

Division of Professional Relations
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DENNIS CHAMOT, *Editor*



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FROM THE EDITOR . . .

Hill Award to Pavlath

The latest recipient of the prestigious DPR Henry Hill Award is Attila E. Pavlath. Long active in ACS, Dr. Pavlath has served as a Councilor from the California Section since 1973. His presence has been felt at every ACS Council meeting for years. He is widely recognized as one of the most outspoken advocates for professional relations in the Society, and has chaired the Committees on Local Section Activities, Economic Status and Membership Affairs.

"The work of the DPR isn't done," Dr. Pavlath said. "Everything is possible with perseverance . . . At the end of your career, you look back and reflect on what you have done . . . This award is worth more to me than all of the others that I have ever received."

While Dr. Pavlath is the 1989 honoree, the presentation of the award was delayed until the Boston meeting last April in honor of Henry Hill. Dr. Hill was a major figure in the Northeast Section.

Report from Boston

The Council allowed the full dues increase to go through this year, \$4.00, with virtually no debate. You may recall that last year Council voted to permit no increase, zero dollars more. The two votes seem to be contradictory, but are confusing only if one misinterprets them. Clearly, the debate and vote last year was an indication of displeasure with the way things are going in ACS; it was sending a message. Having sent the message, Council this year was confirming that they were not asking for program cuts last year. They recognize more funding is needed, and approved it.

Unfortunately, last year's message was not received, and it appears that the "powers that be" are unwilling to listen. Let me give a couple of numbers by way of background. According to the latest ACS annual report, only 5.3% of the Society's operating revenues were derived from dues. "Dues related expenses" (allotments to local sections and divisions; *C&EN* allotment; member and professional services; education activities; government relations; etc.) accounted for only 8.3% of total expenses (\$13.5M/\$163.1M). Clearly, a significant amount of money from other activities is added to the dues pool to fund member activities, but even so, what kind of an organization is it where only a twelfth of the expense budget goes into dues related activities? Is it a membership or-



Dr. Attila Pavlath receiving Henry Hill Award from Dr. John Connolly.

photo by G. Borowitz

ganization? Or is it a publishing house?

Let's go a bit further. We all know that a good deal of potential dues revenue over the past few years has not been available because Council voted to increase dues by less than the full dues escalator, and as the escalator is calculated based upon changes in the cost of living index, dues revenue has not kept up with inflation. This needs to improve. Still, if we calculate dues revenue based upon a rate *ten dollars higher* than real dues were last year, the dues supported activities pool would still be short \$2-3 million.

It seems to me that there are two issues here (at least). The first is what goes into the "dues related" budget. Is it time to take another look at the automatic allotments? For example, *C&EN* takes almost one-quarter of all dues; but the allotment was changed from 17% of dues to 23% of dues a few years ago. Should this allotment, could this allotment, be reduced? What about the allotment to local sections, and money given to divisions? Do large sections and divisions need to get the same amount, proportionately, as smaller groups? Are the funds spent on National Chemistry Week well spent? And so on. I am only raising questions. I am not suggesting personal preferences. The final decisions in all of these areas rest with the Board, but examination of priorities needs a broader discussion, going well beyond budget setting exercises in individual areas.

A second major issue goes to heart of the question, what is ACS? Some time ago, Dr. Crum published a piece in *C&EN* where he argued very persuasively that the Society's finances were very healthy. He then went on to look only at the dues supported part of the Society's activities and concluded that there are real problems. To me, there is a major problem *only* if the view is one of ACS being first, an information services "company", and only secondarily a membership society.

There is nothing at all wrong with taking some of the money generated by successful publishing activities or investments and using this to pay for additional member-related services. In fact, other societies I am familiar with do just that. Yet discussion at Council meetings seem to give the impression that some of our leaders don't agree. Obviously, one cannot let this get out of hand or one would jeopardize the health of the publications, but the *principle* is sound.

With all of this in mind, a group of councilors (including me) submitted a petition to amend the ACS constitution. It was not a perfect petition, but it had two purposes. The first, and most important, was to bring attention to these issues, and in particular, to re-emphasize that priorities in ACS should be set based on member needs. The second was to offer a first cut at an approach to do that. What we suggested was to split off the production (not editorial) functions of Chem Abstracts, other information services, and journals into a subsidiary, so that in what was left, member related activities would represent a larger *fraction* of the budget, and hopefully, a higher priority in planning.

I am sorry to report that while this petition was up only for consideration at the Boston meeting, with no vote scheduled until at least the fall meeting in Washington, a major effort was made by the president and Board to argue against it. Now, I mentioned that the petition was not perfect, and it is fair to expect criticism and suggestions for improvement. But our broader concerns were made clear, and the other side chose only to attack the content of the proposed amendment and to ignore the intent. So we didn't get the kind of discussion we sought. Well, we will withdraw this petition and come back with a better one. The basic structural, financial and openness issues are still there, and need to be dealt with.

Comments?

—Dennis Chamot

ETHICS, EDUCATION AND LAW

Alexander MacLachlan
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There's hardly a day goes by that we don't hear about insider trading, bribing of officials to get government contracts, cover up of toxic waste dumps, or some other unethical occurrence. The media have found fertile ground in closely watching business and industry behavior. Scandal and violation of the public's trust are getting more column inches in daily newspapers and more TV air time than ever before in history. And the chemical industry is not being spared. Recent stories on chemical air and water emissions, liquid chemical spills, and the greenhouse effect have put the chemical industry in the public eye and made it even more vital that we maintain our ethics above reproach.

Every decision we make in the course of our business day is made based on ethical standards which have been fostered by our personal morals and beliefs and by the corporate culture in which we live. I don't have space to do justice to the whole topic of ethics nor am I qualified to do so, but I would like to share my thoughts on how a company such as Du Pont establishes and reinforces ethical standards and nurtures a culture which promotes ethical behavior. Then I'll use several examples of business decisions made by Du Pont to give you a feel for the way ethical considerations come into play in the corporate decision-making process.

Sometime back in the late 1800s, a judge in Colorado wrestled with a complicated case involving a big railroad company—one of the so-called "Robber Barons." By the end of the trial, he had come to two conclusions. First, he decided that the company had used every trick in the book to rig its rates to swindle the poor farmers and other settlers in the region. And second, he found there was no actual violation of the law, and therefore he couldn't do anything about it. In his frustration, he ended the trial by complaining, "A corporation ain't got a soul to curse or a backside to kick, and it damn well ought to have both."

Presented at the DPR Symposium "Ethical Dilemmas of Chemists," held at the national ACS meeting in Boston, April 24, 1990.

He was not the first person to express that sentiment, nor was it the last time a corporation was accused of improper behavior. It's a fact that illegal and unethical corporate behavior exists. Those kinds of problems are all too prevalent in society. Wherever such behavior is found, it should be met with firm action. But I think that on balance the business world—at least the part I've been exposed to—is a pretty ethical place. It's just the old story of exceptions to the rule getting the most notice.

There are, in fact, a lot of reasons why businesses try very hard to uphold high ethical standards. To begin with, businesses want to attract outstanding people—people with high values—and to do that they must have a reputation for an unyielding commitment to ethical behavior. The best people simply aren't attracted to companies known for low ethical standards. And once those people are on the job, they expect to conduct their business affairs the same way they go about their private lives. No employer has the right to ask them to cut corners on ethics. This is the basis for an effective ethics policy, because, as Thoreau said more than a century ago, while "it is true enough said that a corporation has no conscience, a corporation of conscientious (people) is a corporation with a conscience."

Of course, there are other reasons why ethical behavior is pursued in business. In matters of strictly legal concern, for example, it helps a company avoid costly courtroom experiences. But the term "ethical" is more than a synonym for "legal," and so more is involved. Simply stated, customers and potential customers want to do business with people they can trust. They naturally gravitate toward companies with a reputation for ethical behavior. It's the same way you decide who's going to repair your car. How many of you pay a little more to know the shop working on your car is completely honest and above-board?

A reputable company begins with an understanding that ethical behavior is the only acceptable policy. However, that is not enough to guarantee that its ethical standards are upheld. It's also important to communicate those values and that commitment clearly and emphati-

cally. Such communications may come in the form of a code of conduct, not to cover all contingencies, but to state the company's values without equivocation. In Du Pont we have made it very clear: we won't make a product unless it can be manufactured, transported, used and disposed of safely and in an environmentally sound manner. That leaves very little room for backsliding or corner cutting.

After making standards of ethical conduct explicit, it's critical to establish an ethical environment so employees understand what is expected of them. If you look at companies that have had problems, very often it is not a case of an employee seeking personal gain or company management trying to cheat someone, but rather of an overzealous employee attempting to "help" the company and believing—wrongly—that improper behavior is expected. That kind of misunderstanding on an employee's part is a very serious problem. It's up to management to make it absolutely clear that the company never wants, expects or tolerates cutting corners on safety, padding expenses, substituting inferior quality materials, or any other unethical behavior. It requires strong leadership to let every employee know that there is no acceptable rationale for deviating from the straight and narrow path. That understanding must permeate the company, so that individual business units will seek to be leaders in promoting ethical conduct.

Finally, a company must be tough when infractions do occur. Doing otherwise sends an unacceptable message. At Du Pont we discharge employees for such behavior as falsifying records, stealing, accepting gifts of significant value from suppliers, or behaving in an unsafe manner so as to endanger other employees. It's not always easy to be that tough, but it's the only way to ensure that employees understand the importance of ethical behavior and the intensity of our feelings.

The goal in each instance is to build an environment that lets employees know there is never an excuse for unethical conduct—none, period. We understand that people may make the wrong decision sometimes, but they should always try to do what is right and not what is expedient. And we want them to know

we will back them up.

I'll grant you that doing what is right is not always an easy call. When Moses brought the tablets down from the mountain, he didn't end ethical arguments, he just provided a framework for the discussions. We understand that written codes of conduct have to be translated into practice in the cold light of day, and that's not always easy. It can create some interesting ethical dilemmas.

The pressures creating dilemmas are easy to understand. There are heightened demands to be leaner and meaner due to increased traditional and nontraditional competition. In this environment, pressures for performance at each level of the company must be balanced against an unwavering commitment to ethical behavior.

Well, what's the best way to deal with such dilemmas? The surest way I know is to have the ingrained set of inviolate corporate ethical principles such as those I mentioned above. But even this does not always present an easy answer.

For example, to what extent should management feel responsible for the safety of their employees? My company resolved this dilemma more than one hundred years ago. We believe all accidents are preventable. That may seem extreme and fallacious to some, but for us it is gospel. Yes, we still have accidents, but we are determined to continue to eliminate the causes of accidents until we become perfect. Adherence to safety rules is a condition of employment at Du Pont everywhere we operate, and it is one area where we insist that our employees in other lands adapt to our corporate culture. Some financial people have accused us of placing so much emphasis on safety that we neglect our obligations to stockholders. We don't agree. You can see the apparent dilemma here—stressing and investing in safety versus simply adhering to legal standards in an effort to save time and money. In fact, in this case we know that safety pays not only in financial terms of reduced employee disability and reduced insurance premiums—but also in terms of reduced pain and suffering for our employees. It seems to us like a pretty clear case, but some companies still take the view that minimal attention to safety is satisfactory as long as it's legal. However, their safety statistics show it, and we believe without doubt that their business performance suffers as a result.

We have a similar set of principles around chemical toxicity. Du Pont voluntarily founded the first industrial toxicity lab in 1936. To this day we have a mechanism in Du Pont that can and does independently assure the safety of our chemicals. Let me now talk about a couple of cases involving the safety of chemicals we produce.

The first case undoubtedly will be familiar to you, since it has been the subject of much news coverage over the past several years. It concerns fully halogenated chlorofluorocarbons—or CFCs—that are used in refrigeration, air conditioning, food packaging and other applications, but which has also been associated with depletion of the ozone layer in the upper atmosphere.

Back in the 1930s, materials used for refrigeration were highly toxic and flammable, and therefore dangerous. Du Pont helped develop and supply much safer substitutes, namely chlorofluorocarbons. Use of CFCs spread all over the world, and it seemed like a classic case of progress through technology—"better things for better living," to use Du Pont's phrase.

In the early 1970s, however, two university scientists theorized that certain types of CFCs might be rising into the upper atmosphere and breaking down the ozone layer that helps protect us from the sun's ultraviolet rays. At first there was no hard evidence of such a phenomenon and recognized scientists all agreed it was only a theory. So, what does industry do? Here we have a dilemma. The immediate elimination of CFCs would have a devastating effect on much of industry, on individuals, and on society around the world. Remember that the process cooling in your chemical, petroleum, and manufacturing plants depends on CFCs, your air conditioners and refrigerators all use CFCs, as well as many industrial operations such as manufacturing foam insulation, cleaning of electronic chips and components, etc. Immediate elimination of these compounds would have had a devastating effect on many sectors of the economy. At this point the scientific community agreed that the available evidence would not support such a drastic decision, and the mathematical simulation models which were capable of scoping the limits of the effects expected said there was time for more study. So Du Pont encouraged and even funded further scientific research, and at the same time we began looking into the possibility of alternative products.

Then, a hole in the ozone layer was detected over the Antarctic—a mysterious occurrence that was not fully understood. The theoretical work had by this time shown the reaction involved was incredibly complex but probably did have potential for depleting ozone. It became clear CFC consumption should not continue to grow at the current rate even though the theory was still not proven. This triggered us to step up our R&D efforts and lead industry support for an international agreement—the Montreal Protocol—which was approved in September, 1987 to slow the growth of CFC use worldwide. We felt this was a prudent step based on the alternatives and the available data.

The ink was hardly dry on the Montreal Protocol when an international study sponsored by NASA suggested even more strongly a link between some CFCs and ozone depletion. It wasn't a "smoking gun," but the findings were important enough to resurrect the question once again for Du Pont. What was the right thing to do?

Back to the dilemma. We still recognized a commitment to our customers, no small group since we produce about 25 percent of all the CFCs used worldwide. There were, as yet, no commercial alternatives for many of these applications, and we couldn't be certain that our R&D efforts would produce safe alternatives quickly. Moreover, if Du Pont unilaterally stopped production, other companies might

simply jump into the market void, resulting in no real global environmental improvement.

On the other hand, Du Pont has a long tradition of concern for safety and the environment. Our board first explicitly committed the company to environmental protection 50 years ago, long before the term "environmentalist" became popular. As I said earlier, Du Pont's policy is that we will make no product unless it can be manufactured, transported, used and disposed of safely and in an environmentally sound manner.

Du Pont's decision was made quickly, just a few days after the new findings on ozone depletion were announced. We committed to a total phase out of production of the ozone-depleting CFCs as soon as safe substitutes become available, but not later than the turn of the century. Furthermore, we stepped up our R&D efforts to find alternatives. And we vowed to continue to take a leadership role in encouraging worldwide support for a virtual phase-out of CFC use.

Was this the proper ethical response? We believe it was, although obviously not everyone will agree. Some argue that we should have taken the step when the ozone issue was first raised; others said that now we should cease production of CFCs immediately, regardless of the potential consequences. On the other side, a few people still criticize us for reacting before all the facts are in. Our position was a judgement call—but one which we believe to be the prudent course. We thought there was sufficient reason for strong action, but not for a step that could precipitate a major disruption worldwide.

Now let me switch to another example where we elected to continue production of a chemical which our evidence showed to be safe. That is formaldehyde. The story here begins in 1980 when a study conducted by the Chemical Industry Institute of Toxicology found that formaldehyde could cause a statistically significant rate of nasal cancer in rats when exposed at 15 ppm over the rat's lifetime. Publication of this data resulted in calls for strict controls on formaldehyde and some special interest groups called for the total elimination of the manufacture of formaldehyde.

However, further work including epidemiological studies of more than 50,000 humans exposed to formaldehyde in their workplace or elsewhere showed no evidence of cancer in humans. Studies done in our own Haskell Laboratory confirmed these conclusions—and reinforced that the effects found in rats could not be directly extrapolated to humans. The original 1980 study noted that certain biological mechanisms, such as cell repair and nasal mucous barriers, give humans protection against external irritants. Rats do not have these "biomechanisms." Also, in humans, formaldehyde's irritating odor acts as a warning signal. Humans begin smelling formaldehyde at 0.1 ppm and the odor becomes intolerable at levels well below the minimum concentrations where tumors were found in rats.

As with the CFCs, formaldehyde is a critical chemical for society. It is found in the hu-

man body since metabolism could not take place without it. It is contained in many food products, such as shrimp and beer, and is emitted as a by-product of cooking vegetables such as brussel sprouts and cabbage. Formaldehyde is a key additive for many products such as shampoo, deodorant, toothpaste, lipstick and nail polish. Glues made from formaldehyde are exceptional bonding agents and are used in plywood, particle board, and fiberglass insulation. Formaldehyde is even present in the ink on the dollar bills in your pockets and on the newspaper you read this morning. Overall, approximately 6 billion pounds of formaldehyde are used annually by 45,000 businesses nationwide.

You can see the dilemma: Do we cease production as certain groups were lobbying for or do we continue production believing the chemical to be safe based on the data available to us? In this case, we hung tough and continued production while research continued. And I believe history is now vindicating us. A number of additional studies that have been completed over the past 10 years have shown no conclusive scientific data implicating formaldehyde with cancer in humans.* Overall, the formaldehyde industry has voluntarily reduced product emissions by almost 75% and exposure levels are being carefully monitored and exposure guidelines enforced, which we wholeheartedly support.

Of course, resolving dilemmas of this type can be very costly not only to industry but to society as a whole. Acting on early data, certain types of house insulation were condemned as being "cancer causing," and many people saw the value of their homes decrease overnight. The prefab home industry was devastated, and a number of other industries spent large amounts of resources attempting to find substitutes for formaldehyde. Industry's reputation suffered through accusations of greed and indifference when it called for a more rational approach including further studies before taking drastic measures which could cause significant economic upheaval for the country. In some cases, special interest groups acted irresponsibly and government and universities either were inactive or gave moral support to the irrational.

The situations I have described so far illustrate how we have developed certain principles that aid us in dealing with ethical dilemmas. In many ways these examples may seem fairly complex, but I assure you they are relatively simple compared to what we can expect in the future.

The issues just discussed primarily involved parties we know fairly well. That is, ourselves as industrialists, the scientific community, both in and outside industry, and the government. While it's true public advocacy groups were involved, their role was relatively minor.

*This is a matter of dispute in the technical and regulatory communities. There is sufficient concern to treat formaldehyde as a potential carcinogen—ed.

In addition citizen groups were involved, but because the issues seemed technically complex, the primary debate and decision making was basically done by the three communities: industry, science and government. That's changing and changing fast!

The public must now be a principal in these decisions and this puts very special responsibilities on all of us. Why? Because the decade of the 90's will be the "Decade of the Environment." Sara Title III emissions reporting standards; global warming; plastic degradability and recycle; clean up of landfills; agricultural chemicals as friend or foe; chemophobia, etc. And when you're talking about the environment, you are talking about all of us. It is not enough to make decisions between industry, government agencies and scientists about whether something is safe for the public. If the public perceives a problem, they will be irate and may shut us down. We may be correct that there is no safety or environmental problem, but we no longer will be able to decide the course of action by ourselves, as we did in CFCs and formaldehyde. If the public is not party to the debate we may find ourselves forced to close facilities or spend excessively on environmental controls that make us non-competitive.

The scientists among us may say that perception is not relevant, only scientific fact should be considered. On the one hand this sounds reasonable and rational. But, if the public perceives they have not had a meaningful input to the decisions, their outcry may be such that laws are passed that are irrational, or we are forced to change course or make unnecessary investments simply because of public outcry.

So what do we do? How do we get meaningful involvement? The job is not easy and it must involve us all. The basic underlying principle would seem to be to lead and not follow. Let me explain.

Du Pont's Chairman, Ed Woolard, in a recent speech pledged our company to environmental performance beyond what the law requires. Other CEOs have done likewise. The Chemical Manufacturers Association has formed its principles around clearing up contaminated landfills. Clearly the purpose in both of these initiatives is to earn some credibility with the public. But, we'll have to do much more.

People in our profession are going to have to ensure our performance is exemplary and spend more time in public forums. The managers of our chemical plants have as their major responsibility, along with safety, the involvement with local and state groups. They need to be proactive in explaining what we plan or propose to do before it happens. Also, when problems do arise with spills or inadvertent permit violations, we want to be the first to inform people in the community; not have them read it in the newspapers.

Personnel in plants are spending a lot more time with neighborhood and local groups as well. You must do this because if you don't,

no amount of facts or figures or scientific explanations will help you when you need the public's understanding and trust, and when you want their full participation in risk assessment.

Some will say this is impossible because the public is not generally scientifically literate. This is a cop-out in my opinion. We've seen many examples where taking the time to establish relationships and explain our activities have paid off handsomely. It, of course, goes without saying that all we do must be ethical and correct.

Other things we can do include increasing our support for environmental science and becoming directly involved with advocacy groups rather than treating them like the enemy—we may not agree with them, but at least we should be able to sit down with each other and talk things out.

And, finally, we as professionals in industry, academia, or government must do everything we can to improve the public understanding of science and technology issues. Ultimately, this comes down to reversing the alarming educational trends in this country. With fewer and fewer of our best people going into science, with schools doing less teaching and less acquainting of young people with even the most rudimentary scientific understanding, we are risking the magnificent benefits a key profession and industry has to give to mankind. So as I said earlier, we cannot use the public lack of scientific understanding as an excuse for not involving them. However, it is certainly true that all parties would be much better served by getting science understanding and education back to a satisfactory level in this country.

Let me close by returning to that frustrated Colorado judge I mentioned at the beginning. A corporation may not have a "soul to damn or a backside to kick," but it can and should be held accountable for its behavior. It should reflect the ethical values of its people, and it can do that if its leadership is strong in reinforcing those values and if it weighs ethical considerations heavily in its decision-making process. That may not be the way J. R. Ewing operates Ewing Oil in TV's Dallas, but I think you'll find it's the rule in a successful business—particularly those companies that have grown and prospered over a long period.

Comments and letters to the editor should be sent to:

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For the Record . . .

Results of election of 1990 officers, and proposed DPR bylaw amendments:

Chair
Mordecai Treblow 150*
John Ruth 118

Secretary
E. Ann Nalley 254*
John Ruth (write in) 1

Member-at-large
John Borchardt 210*
Michael Brownfield 64
Attila Pavlath 227*

Bylaws: yes 71
no 1
invalid 1

* = elected

DPR Membership Application

I am a member of the American Chemical Society.
Enclosed is \$4 to cover dues through **December 31, 1991.**

Signature _____

Printed Name _____
Last *First*

My ACS membership number is: _____
(if known)

Address (As it appears on my C&EN mailing label)

Mail to:
Dr. Elizabeth Ann Nalley, Secretary
Division of Professional Relations
Route 3, Box 176-1
Chickasha, OK 73018

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Enclosed is \$4 to cover dues through **December 31, 1991.**

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