UPDATE

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Tom Foley

A Hmong family living in St. Paul

Hmong Refugees
Hedley Donovan
Professor as Playwright
Oneota Dig
Hubert Humphrey

Mountain People From Laos Build Community in Minnesota

by Maureen Smith

In the war in southeast Asia, they fought on the losing side. Fearing for their lives when the war was over, they fled from their villages in the mountains of Laos, swam across the Mekong River, and landed in refugee camps in Thailand. Now more than 2,000 of them are in Minnesota, most of them in a growing community in St. Paul.

They call themselves Hmong, pronounced *mung*. The Chinese call them Miao, the Vietnamese call them Meo, and it was as Meo that they were occasionally mentioned in American newspapers during the fighting in Laos. But they like the name Hmong, which means free.

American life has not been easy for the Hmong. Catching buses, shopping in supermarkets, and working in factories or living on welfare are alien experiences for a traditional tribal people who came from small independent villages, worked mostly out of doors, and usually had little prior exposure to English.

But most of them are glad to be here. "I'm pretty lucky I came to Minnesota," said Phay Vang, who is now working in the budget office in the College of Liberal Arts (CLA). "A barn in this country is better than a camp in Thailand," said Shoua Vang, a caseworker at the International Institute of Minnesota.

"The Hmong are amazing for their lack of expressed bitterness, although they do have emotional and physical problems," said Timothy Dunnigan, associate professor of American Indian studies, who has worked with them and studied their culture. "They are very open and trusting toward Americans."

"They are very pleasant people to work with, quite easy to get acquainted with," said Bruce Downing, chairman of the linguistics department, who has worked with students in trying to develop effective ways of teaching English to the Hmong. Last summer Downing and his wife gathered some clothing and garden tools for a group of Hmong people, and he observed that the Hmong were happiest when they could offer something in return, even if it was simply a soft drink.

Tom Foley

Hmong mother and daughter

Helping the Hmong

Because the needs of the Hmong are great, because their culture is fascinating to scholars and students, and because their community in St. Paul is one of the largest in the United States, a number of University people have been working with them.

Dunnigan, Downing, and Glenn Hendricks of Student Life Studies led a class on the Hmong last spring. Offered through the Office of Special Learning Opportunities (OSLO), the class gave students a chance to learn about another culture and provide services to the Hmong at the same time.

"We worked with the agencies," Downing said. "We couldn't just send someone out to knock on doors and say, 'I'm interested in helping you people.' We placed students in already existing programs. As much as learning about the Hmong people, they learned how these things are set up. They kept asking, 'Isn't there anyone who's in charge of the whole thing?' "

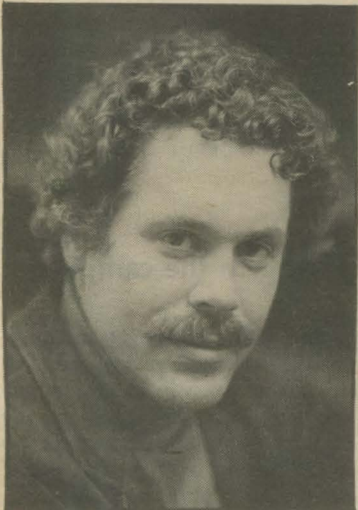
Government assistance to the refugees is being channeled through the established public welfare system. Private agencies are also making a major effort to help the Hmong—the International Institute, Lutheran Social Services, Catholic Charities.

Students in the OSLO class worked with some of these agencies and also with the Hmong Association. "We weren't coming in like gang busters," Hendricks said. "We were assisting the Hmong, letting them define the problems."

At least one University staff member is sponsoring a Hmong

family. Mary Bilek, assistant to the dean in CLA, remembers meeting them at the airport on a cold winter day. "They arrived in their short-sleeved shirts, with bare legs and rubber sandals. They carried everything they had in a little box not much bigger than a shoebox."

The family of three—a young man and woman and a baby—stayed with Bilek and her husband and children for a month before moving to an apartment.



Timothy Dunnigan

Tom Foley

Bruce Downing

Tom Foley

Joseph Westermeyer

Tom Foley

Bilek has continued to help the family, and she said they are "rapidly adjusting to this life, but they still have a long way to go."

Except for the Hmong people who are staff members or students, the person at the University who knows the Hmong best may be Joseph Westermeyer, associate professor of psychiatry, who was in Laos from 1965 to 1967 as a physician in the public health division of the Agency for International Development and returned six or seven times between 1970 and 1975 to do research on opium addiction and mental illness among the Hmong and other ethnic groups in Laos. Westermeyer and his wife have a Hmong foster daughter, now in her thirties.

Every Thursday Westermeyer holds a clinic for Hmong people who are suffering from depression. His knowledge of the Hmong language is limited—"certainly not enough to do careful psychological assessment or psychotherapy"—but he does what he can. Mayka Bouafeuly, a Hmong woman, works with him as an interpreter, and she has also been visiting Hmong families to ask them about their health needs and other problems.

Broken families

What has been devastating for the Hmong has been the separation from family members—and the Hmong define a family more broadly than the American government does. In working with the Hmong and other refugees, American officials have tended to keep nuclear families together—husbands, wives, and children—but to allow extended families to be scattered.

"The way the Hmong were moved fragmented their most important resource, the extended family and the clan," Westermeyer said. "I've seen marriages that were working well for years within the clan network and support system, and now with that fabric being destroyed there is an increase in marriage problems."

For the Hmong, Dunnigan said, "the attachment to parents is very strong, and also to siblings and what we would call aunts and uncles and cousins." When important family members are left behind in refugee camps or sent to other parts of the United States, he said, the Hmong "feel as if parts of their body have been cut away."

All the Hmong lost relatives in the war and its aftermath, but they are doing what they can to be reunited with surviving family members. They have been pleading their case to get family members out of the camps—Dunnigan and a graduate student recently helped a group of them write letters to President Carter—and they have been moving from state to state to rejoin their relatives.

It has been in this process of secondary migration that the Hmong community in St. Paul has grown. St. Paul now has the second largest concentration of Hmong in the country. Santa Ana, California, is first with about 4,000 or 5,000 Hmong, and Missoula, Montana, is third. Vang Pao, who was general of the Hmong army in Laos, now divides his time between Santa Ana and Missoula and is still a national leader for the Hmong.

Westermeyer said that some of the emotional problems of the Hmong have been eased as families have been reunited. "There were marriage problems that I felt at wit's end to help with, and now as more people have moved in, some of those marriages have stopped needing my services. The people's lives improve as more of the clan arrives."

Family breakups have traditionally been rare among the Hmong, Bouafeuly said. "We fight, but we expect the old people to help us work things out." Now, she said, clan members are filling the gap for people who are separated from their actual relatives. If people find out that their neighbors are from the same clan, even if they never knew them before, "they can go to them and talk about their problems. If people don't have their grandfather or grandmother or mother-in-law, they get together with members of their clan and become a family."

There are about 20 clans in all Hmong society. In the United States the people have taken their clan names as last names. Vang is the name of the clan that is most common in Minnesota.

The clan system in traditional Hmong society is patrilineal, which means that at birth a child becomes a member of the father's clan. The basic social unit is the household or patrilineal extended family, which includes not only those who live under one roof but all those under the authority of the household head: a man's unmarried daughters, his sons and their wives and children, perhaps his sons' sons' children, and any feeble or otherwise dependent relatives. When a woman marries, she becomes a member of her husband's extended family.

Some of the customs are changing, but Dunnigan and Tou Fu Vang in a paper on marriage rituals have predicted that the patrilineal clan and its system of family alliances "will be a feature of the Hmong culture in urban America for at least several generations."

Fallen elders

Elders are revered in Hmong society, and here, too, American values and Hmong values have collided. Dunnigan said one of the tragedies for the Hmong has been that American policy has often prevented the immigration of old people—the very people regarded as most valuable by the Hmong. In deciding which people to bring out of the camps, American officials have tended to prefer those who are young and vigorous and employable.

Even if the old people are not economically productive, Dunnigan said, they play an essential role for the Hmong. "But the Hmong are a resilient and innovative people. They are using the few older people they have, and they have pushed younger people into these roles, prematurely taking on these responsibilities."

For the old people who do make it to this country, Westermeyer said, life in America can be a painful comedown. "In the past, age brought with it wisdom. Now the old people are being asked to do janitor work. They faced malaria and tigers in Laos, they've been through the war, they've been through the refugee camps, they've survived all that, led their families through, and when they get here to the promised land they are demoted.

"And maybe it has to be that way. The old people's predictions don't necessarily come true any more. The old wisdom is no longer wise."

A new generation of leaders is emerging among the Hmong, Westermeyer said. "There is a core of young Hmong, mostly under 30, who are literate and were educated outside the Hmong community. Now these people are becoming the leaders. They're kind of leaping ahead, taking the place of the patriarchs and matriarchs."

One of the good things that happened during the war years, Dunnigan said, was that for the first time "some of the young men and even young women started to have the opportunity to go to school, and those who did well on competitive tests even had the opportunity to go to college, and a few studied overseas. Now these people are much relied on, and they are staying closely allied with their community."

One problem that has kept some Hmong elders in the refugee camps is opium addiction. Opium poppies were an important cash crop for the Hmong in Laos. Although they grew the poppies, Westermeyer said, most of the Hmong did not use opium. "They wouldn't have anything to do with it, even when they were severely ill. By the same token, they grew it and had a lot of access to it, and there was a fairly high rate of addiction, maybe as high as 9 or 10 percent."

Yang See Koumarn, a Hmong who wrote a paper for the National Indochinese Clearinghouse, said the use of opium among healthy young people was considered disgraceful by the Hmong, but opium was used as a painkiller among the elderly.

"The American government has a policy of being very harsh on opium addiction, even though the addiction of many of these old men is probably no greater than that of a German farmer in Minnesota who has a few beers a day," Westermeyer said.

"We have a policy that splits up families based on our stereotypes. Some families won't leave the refugee camps if they have to abandon a patriarch who is on the pipe. Others do come to escape the camps—their women are being raped, their children exposed to social ills—but they are faced with the guilt of having abandoned a significant member of the family."

Learning the language

Except for the handful of young people who were educated outside the community, most of the

Hmong are illiterate even in their own language, and learning English is a difficult challenge for them. The Hmong language and English are quite dissimilar.

(It was only 25 years ago that two Christian missionaries developed a written form of the Hmong language. One of them, William Smalley, is now on the faculty at Bethel College in St. Paul and was a guest speaker in the OSLO class last spring.)

Hmong is a difficult language for English speakers to learn, Downing said. It is a tonal language: words that are identical except for different intonation have different meanings. Similarly, he said, English is difficult for speakers of Hmong.

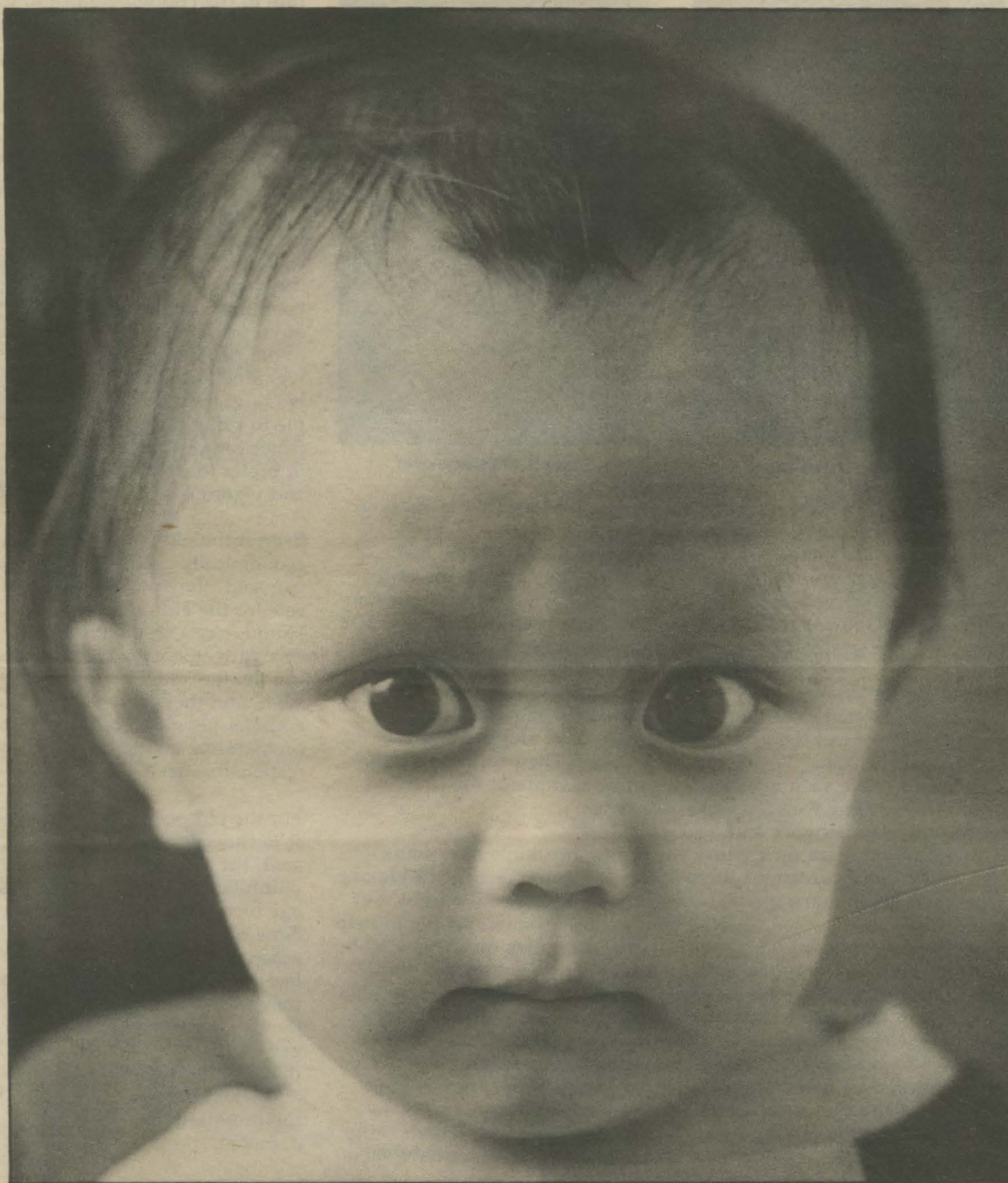
All words in Hmong are one-syllable words, and except for the nasal sound represented in the word *Hmong* itself, there are no final consonants. "When the Hmong learn English, they tend not to even hear the consonants we put after vowels, and it's hard for them to put two consonants together. They might be able to say *dog* but not *dogs*. It isn't that they can't understand the plural, but that they can't say the sounds. There are important grammatical differences, too," Downing said.

Until they do learn English, most of the Hmong are isolated and unemployable in American society. Westermeyer said he has seen people who are going to language classes two or three hours a day, and "after two or three years they're not picking up English, and they don't have any American friends. The ones I see are so depressed that they can't study. Once they get some English they can go and try to find a job, but until then they are despondent."

Because English is so difficult for most of the Hmong, those who are bilingual carry a heavy burden. Phay Vang, for example, lives in Minneapolis, and among the 33 or more Hmong families in Minneapolis he is "the one who speaks English a little bit better than the others." After working eight hours a day at his job in CLA, he goes home to find people knocking on his door at all hours of the evening and night. Someone needs a letter translated, someone else needs help looking for an apartment.

Vang isn't complaining—he keeps saying "I'm one of the lucky ones"—but the responsibility can be overwhelming. He has been asking his coworkers at the University if they know of any simple books about American life or any books that summarize what is legal and illegal so that he could use them in teaching classes for his people in the evening.

Dunnigan said he knows a few bilingual Hmong students who are "exceptionally brilliant and are undertaking a difficult course of study—maybe to become chemical engineers—and it's hard for them to set aside time for themselves and their families when there are so many immediate problems of Hmong survival that they have to help with. It's hard, but if anyone can do it, I think they can."



Tom Foley

Nu Xiong, age 2

Whose war was it?

Dunnigan and Westermeyer have different views of the role of the Hmong in the war in Indochina. On two points there is no debate—most of the Hmong fought on the American side, and they fought magnificently. The question is whether they joined the fighting for their own reasons or were used and betrayed by the U.S. Special Forces and the Central Intelligence Agency (CIA).

"We seduced them to fight for us, we armed them, we promised them that we would never abandon them—and these were not tacit assurances—we made some very explicit promises and we went back on them entirely," Dunnigan said.

"They were our best allies, operating in a clandestine fashion, and their story was never really told. They died by the thousands. There were war dispatches about the fighting on the Plain of Jars—but it wasn't the royal Laotian army fighting insurgents, it was the Hmong fighting Vietnamese.

"Everybody knows that we were fighting in Vietnam, and that we made a temporary incursion into Cambodia, but God knows we had nothing to do with Laos—there the fighting was among Laotian groups," Dunnigan said ironically. "It was all a clandestine operation, and that has put the Hmong at a terrible disadvantage. Even their association with certain elements of our government has possibly worked against them. They're very open about it, they make no apologies."

With equal eloquence, Westermeyer presented another view.

"The Hmong have been attacked and oppressed by lowlanders for centuries. The Vietnamese have always been trying to wipe them out, the precommunist Chinese, the Lao, the Thai. There has been constant fighting between uplanders and lowlanders. The French were the first to recognize that, and they allied themselves with the Hmong. For the Hmong it wasn't a fear of communism so much as a fear of being wiped out by lowlanders.

"They joined hands with us because it's better to fight the Vietnamese with a gun that shoots bullets than with a crossbow that shoots arrows. To talk as if some sleazy CIA guy got them to sign their birthright away in defense of the American flag is baloney. For Americans to think we're so strong or so clever or so marvelous that the Hmong would throw themselves in with us has got to be the most crazy notion I've ever heard in my life.

"The Hmong aren't so naive—they're bright people—and that kind of thinking is an insult to them. They've had political liaisons before. Betrayed? What does that mean? They lost, and we lost."

Dying in the camps

Some of the Hmong have been afraid that their people are also losing in the race to be rescued from the refugee camps in time. "There are many thousands who went to Thailand in 1975 and who are still sitting in the camps," said Leng Vang, a Hmong leader who is an outreach worker for Lutheran Social Services. "Children are growing up without proper education, without medical care. Many of them have died."

"Boat people" escaping from Vietnam were given priority over land refugees for a while, but Ken Truitner of the International Institute said that there has recently been "quite a bit of movement in some of the camps."

"The State Department seems to respond to pressure," Truitner said. "When Thailand is saying 'you've got to move people out or there will be trouble,' we move them. When Malaysia is saying 'you'll have to do something or we'll send boats out to sea,' we do something. It keeps jumping back and forth.

"What the State Department is really doing is saving lives. If people are going to be pushed across the Mekong River into Laos and be shot—which has happened—then we'll take them. The United States is committed now, not just for humanitarian reasons but as a necessity on the international level."

Refugees from the camps are now arriving, Truitner said. "We've had quite a few Cambodians, Lao, and Hmong in the last three months." Sponsors for new arrivals are urgently needed, Leng Vang said. "We need more help."

Rescue for the refugees can't come too soon, Dunnigan said. "The people in the camps have been dying slowly for a long

time. They're desperate now. These people have to make it now or they will be dead—they will be on their feet and breathing, but they will be dead."

Preserving the culture

Wherever they have lived, the Hmong have been in the minority, and they have learned to make accommodations. In America they know that they must change some of their ways. Some customs have already changed because of the teachings of the Christian faith, which about half of the Hmong in the United States have embraced.

Tom Foley

Phay Vang

In September the Hmong held a national conference in St. Paul to discuss which of their customs to change, and a report is being prepared for distribution to Hmong people throughout the United States. "We are planning ahead instead of waiting until we run into troubles," Leng Vang said.

"Back home there was a bride price," he said. "Here of course there is no bride price. We know that in the United States there are equal rights for all. We have to treat people equally, not like back home where the men have more power. We have to study it, iron it out."

But even as they are making changes, the Hmong are working to preserve as much of their culture as they can—to continue what can be continued, and to record what is lost.

"One of the most interesting things about the Hmong is that they are so involved in communicating with others about their experience," Dunnigan said. "They have a fantastic oral tradition, poems about their origins and the common experience of their people, and right now they are prolific creators of poems and ballads about the refugee experience. They want to record and record and record, preserve in any way they can."

Chinese Alumni Toast 'U'

Although most of them studied at the University of Minnesota more than 30 years ago, alumni in the People's Republic of China had never gathered before.

Last fall they met in Peking—some of them traveling more than 1,000 miles for the occasion—to have dinner with a delegation from the University that was visiting China to set up an educational exchange agreement.

Wenda Moore, chairman of the Board of Regents, led the 12-member delegation. Moore called the meeting "a very moving, very emotional evening."

"After all these years, they had not lost their affection for the University," Moore said of the 42 Chinese alumni who attended the dinner. "You can't really appreciate how difficult it must have been for them to have to ignore any foreign connection and now to be able to stand up and talk with pride about their fond memories of the University."

Those memories are of a campus that no longer exists as they remember it, but Moore promised to send slides so they can see what it looks like now. Many members of the delegation brought back letters and pictures to be delivered to friends of the Chinese alumni.

Lun-chi Hu, a professor of economic geology who was unable to attend the dinner, sent a letter that said, "We still think of our alma mater very much. Would you please remember us to all the professors and students when you return to the campus of the University of Minnesota."

Ding-lai Tao, a 1948 graduate of the University and now director of the Academy of Agricultural Engineering in Peking, also sent a letter that said, "To meet the delegation of our mother university, the University of Minnesota, is of course a great pleasure to all of us."

For 32 years, Ding said, it was impossible to communicate with the University because of political differences between the United States and China, "but I believe none of us had forgotten the education and training we received while we were in the University." Nor had they forgotten "the Twin Cities, the Mississippi River, and the tram car between the campuses."

Roger W. Staehle

Regent Wenda Moore with Lun-chi Hu, professor of economic geology and University alumnus

"It is a pleasure to tell Mrs. Moore and all other members of the delegation that we graduates have been doing well through the years," Ding wrote. "Some of us are now professors in universities. Some are well-known scientists in various fields in research institutes." Ding said that the Minnesota graduates had made significant contributions to the "reconstruction of our new country" and that the University has a good reputation in China.

He noted that the period during which communication was impossible was a long one. "You can see that most of us have become old and with white hairs or without hairs at all."

On behalf of the Minnesota graduates in China, Ding proposed a toast:

"for the success of the mission of the delegation in China,

"for the cooperation between the University of Minnesota and the colleges and universities and research institutes in China,

"for the activities of University of Minnesota alumni in China, and

"for the health of the Honorable Mrs. Moore and all the members of the delegation."

Hats Off

Academic leaders aren't the only ones who are going to China these days.

A group of alumni visited the People's Republic in September, and at about the same time Harvey Mackay, a 1954 graduate of the University, led a delegation of Minnesota businessmen to talk to their Chinese counterparts.

As groundwork for the trip, Mackay studied the Chinese language with Tsung Shun Na, assistant professor of East Asian languages, during the summer.

His preparation paid off. At a dinner at the famed Peking Duck restaurant, Mackay "astonished the Chinese guests...when he delivered a five-minute speech in passable Chinese," according to a United Press International account of the event.

Later Mackay led the Minnesota businessmen in an "off-key" rendition of "Minnesota, hats off to thee."

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Playwright Looks for 'Trouble' To Make His Mark Off Broadway

by William Hoffman

We have been moving toward the present emergency for a long time—for 5 billion years, says the American President in Paul D'Andrea's play *The Trouble With Europe*.

What emergency? Europe is winding down. It is running out of physical and spiritual energy—its holy buildings are empty—and something must be done quickly to save it. The future of Western civilization is at stake.

The best people are called up for the job: Inspector Jogot, a French criminal detective whose forte is "abstract thought," and Wilbur Tilbury, an American cowboy and truck driver whose special interest is "a little of this and a little of that," which translates as violence. Their task is simply to save us from the underworld demons of power, lust, and ideology, in six days.

D'Andrea, an associate professor of humanities, has been writing plays for a decade or so, with some success. But he considers *The Trouble With Europe* a real breakthrough. And well he should.

A Phoenix Theatre production of D'Andrea's play opens Off Broadway in January. In March, the Kennedy Center in Washington, D.C., will include D'Andrea's play in a series of readings. And the play was one of those nominated by the American Theater Critics Association for best play of 1978-79.

Getting this far was no breeze for D'Andrea. "It was an awful lot of work to bring the play to the attention of the right people," he said. "You have to keep in mind that I'm in the academy. I'm not hobnobbing with the theater people in New York."

Once he got the attention of the right people, however, things started happening. *The Trouble With Europe* was one of just four mainstage plays performed early last year at the Mark Taper Forum in Los Angeles, and it was the only one that had never been done anywhere before. The Mark Taper Forum is a sort of launching pad for promising dramatic works. D'Andrea's play was given a big lift when Phoenix director Daniel Freudenberg saw it, liked it, and bought it for the theater's new season. He'll direct it himself.

Tom Foley

Paul D'Andrea

D'Andrea wrote the play while he was living in Germany in 1975. His wife translated it into German. German director Rudolf Noelte read and liked the play and encouraged D'Andrea to have it produced. So D'Andrea sent it to Peggy Ramsey, a prominent London agent, who recommended it to American director Alan Schneider.

"Schneider loved it," D'Andrea said. "He helped me hand it around—with his letter attached." Schneider has directed Broadway plays by such notable playwrights as Samuel Beckett, Edward Albee, and Harold Pinter. "He wanted to direct the Taper production himself, but he discovered he had a scheduling conflict."

The fate of *The Trouble With Europe* rests largely on the opinions of New York critics. "It is very important what the theater critics think," D'Andrea said. "It could get blasted out of the water." He said that there are plenty of risks in the business—money, professional reputations, the future of a theater itself. "When a theater like the Phoenix does only four or five plays a season, it can't afford many failures."

To guard against failure, new plays are revised at every stage, from the workshop early on to the commercial production—if they make it that far. For instance, D'Andrea's play has been revised five times, and currently he is working on the sixth revision, honing and tightening it at the advice of theater professionals.

"I believe in solving problems while learning. I am not a master," D'Andrea said. It is one thing to write a play, it is another to see it performed. The need for change sometimes is apparent after it is run through a dramatic medium. "But even the slightest change in the script can vibrate the whole web," he said. "It's more like a musical composition in this respect. So revising a play will take all the time the writer can give it."

Drama is "an awesome medium because it's social,"

D'Andrea said. "It's easy to be solipsistic when you're a college professor. To reach out to the public in a serious way is really a challenge."

Being a university professor is not a problem once into the theater world, D'Andrea said. So far he's been met with open arms and minds. "At the Taper production I had a wonderful experience with theater people. They love having a professor in their midst. They called me their rented intellectual." His colleagues at the University have supported him, too, he said.

"I have always loved plays," said D'Andrea, who got his Ph.D. in Shakespearean drama from Harvard and then "roamed out of classical to modern drama, to Ibsen, Strindberg, Chekhov, and the absurdists. As a playwright I think it is best to reach out rather than zero in." His favorite dramatists, besides Shakespeare, are Aristophanes ("English-speaking people don't know how good he is"), Tennessee Williams, Edward Albee, and Sam Shepard ("a real American with a gift of language").

The Trouble With Europe is a serious play about some of the problems of the modern world. D'Andrea calls it a romance or adventure. "That mode is not in fashion today. Most people expect a spoof, but I think that is begging off social responsibility."

D'Andrea's play is "designed to put a stop to the 20th century," according to its subtitle. He believes modern literature, and modern drama in particular, has said what it has to say and that now it's time to move on.

Dramatic irony reached at once a pinnacle and a dead end with Samuel Beckett's *Waiting for Godot*, he said. "Most sophisticated people see irony as truth, so we're dominated by the ironic mode in modern drama. But why suffer more? Beckett did us a great favor. Now we should move on to a new vision."

D'Andrea's newest play, *A Full Length Portrait of America*, was also bought by the Phoenix Theatre. It is scheduled to open in December 1980.

The two cultures

In his role as a University professor, D'Andrea teaches several courses. One of the more interesting is Science and the Humanities, an examination of the centuries-old warfare between scientific and humanistic values. If scientific and humanistic qualities were joined so magnificently in Leonardo da Vinci, some would argue that they have been drifting apart ever since. Things really got hot in the 19th century when science, principally Darwin's theory of evolution, directly challenged religious doctrine.

The debate reached a high point in this century following the "Two Cultures" lecture by British novelist and scientist C. P. Snow in 1959. Snow stated that those trained in science inhabit a different world from those trained in the humanities, that there is hostility between them, and that this has disastrous consequences that only major educational change can ease. Like

Samuel Beckett

Thomas Henry Huxley, the 19th-century British biologist, Snow argued that science should take a more prominent place in the educational curriculum.

Several years later, F. R. Leavis, a noted British critic, attacked Snow. Leavis defended the primacy of humanistic education and hinted at the dangers of science run amuck that British novelists George Orwell and Aldous Huxley had warned of earlier. More dispassionately, American critic Lionel Trilling wrote that the exclusion of humanists from the mode of thought "which is said to be the characteristic achievement of the modern age" is a wound to their intellectual self-esteem.

D'Andrea is uniquely qualified to enter the arena. Besides his Ph.D. in English, he has a bachelor's degree in physics, and he spends his leisure reading both science and poetry without damaging effects.

The enmity between science and the humanities has arisen mainly because science has taken over a large part of the domain formerly reserved for theology, D'Andrea said, citing Galileo's run-in with the church as perhaps the most celebrated example of science and religion colliding. "As this process has gone on, science has become top dog.

Leonardo da Vinci: painter, sculptor, architect, and engineer

"The field of science is thrilling and there is every reason for the joy scientists show in the process of discovery." Nature must be "delighted" at the human capacity for scientific understanding, he said.

But one of the things crucial to the debate, according to D'Andrea, is mythical or metaphoric truth. "I'll tell you a story. Once there was a king who wanted to divide his domain among his three daughters. You recognize King Lear. Shakespeare tells us a lie. There is nothing to suggest that *King Lear* actually happened, that such a king existed and suffered that particular misfortune in that particular way. And yet *King Lear* is true in a sense, just as *Faust* is true. There is an important sense in which myth need not be mapped on to historical reality to be true."

Myth and metaphor are evident even in science. "Newton said that an apple is like the moon. It sounds crazy. But in a sense, an apple *is* like the moon: they both have mass. And just look at Einstein's search for a unified theory. This is a search for God, an example of myth controlling the mind of a scientific genius."

In his teaching, D'Andrea tries to show how scientists make use of metaphorical truth by citing two scientific principles of 20th-century physics.

The uncertainty principle in quantum mechanics, put forth by German physicist Werner Heisenberg, states that precise simultaneous measurement of the position and velocity of an atomic particle is impossible because of the wave-particle duality of matter. This negates the Newtonian idea that, in principle at least, we can know the position, speed, and energy of all particles in the universe and then predict the course of future events.

In short, we can never be certain of the future because we are never in fact quite sure of the present. We have to rely on probability and the metaphorical method of learning about one thing in terms of another.

The uncertainty principle is a specific example of the complementarity principle, formulated by Danish physicist Niels Bohr. The complementarity principle

Niels Bohr

states that an experiment on one aspect of atomic dimensions excludes the possibility of learning about another (complementary) aspect. Waves and particles "are like the two faces of an object that never can be seen at the same time but which must be visualized in turn...to describe the object completely," Bohr said.

Philosophers of science have taken this to mean that both scientific (verifiable) truth and humanistic (metaphorical) truth are needed to comprehend reality.

"When Bohr spoke about the complementarity principle, he mentioned three primary influences: [Danish philosopher Sören] Kierkegaard's *Either/Or*, [German poet Johann] Schiller's verse statement that 'only in the fullness of detail lives clarity./ Truth dwells in the abyss,' and [American psychologist] William

D'Andrea, p. 15

The Happy Wa

Doubleday & Company, Inc.

Hubert, age 10, with his dog, Rex

Doubleday & Company, Inc.

Graduation day, with Orville Freeman, 1939

Hubert, age 2

rior

Humphrey Collection, Minnesota Historical Society

These photographs were part of the first public exhibition of the memorabilia and photographs collected by Hubert H. Humphrey. The exhibition was held last October in Coffman Union on the Twin Cities campus and was sponsored by the Humphrey Institute of Public Affairs in conjunction with Coffman Galleries.

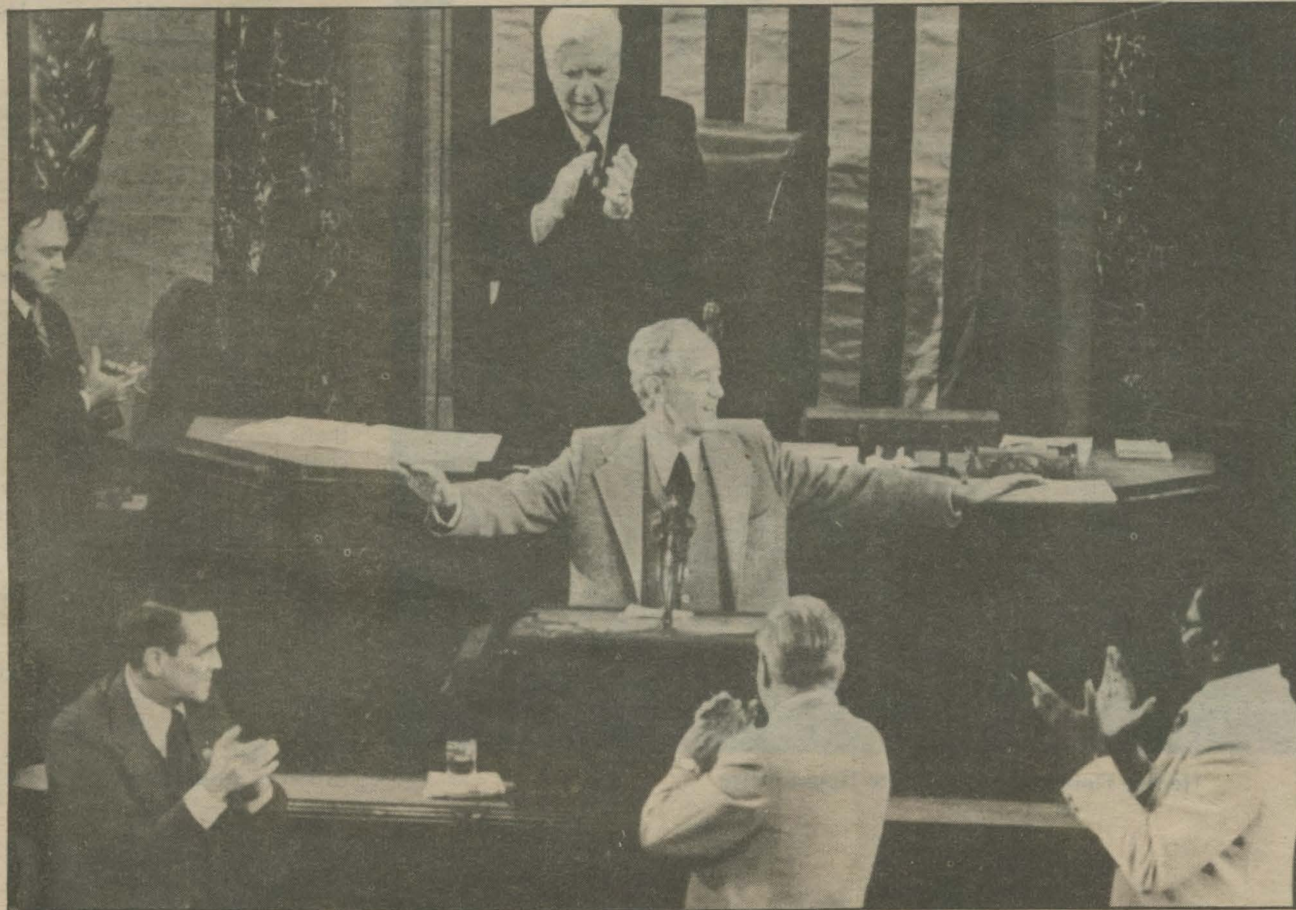
The Humphrey Institute building will be built on the easternmost edge of the Minneapolis campus—at Oak Street and Washington Avenue—and the state legislature will be asked for $11 million to build it. The site is large enough to hold a hotel and conference center, should they become part of the final plans. The hotel and conference center would be built with private money.

About $13.5 million has been raised so far for the institute, but that amount falls short of what University administrators feel is necessary to build both a structure and sound academic program.

The Humphrey Institute currently has about 125 students and operates at a $1 million level annually, according to acting director John Borchert. A permanent institute director will be chosen early this year.

Humphrey Collection, Minnesota Historical Society

University of Minnesota debate team, 1938

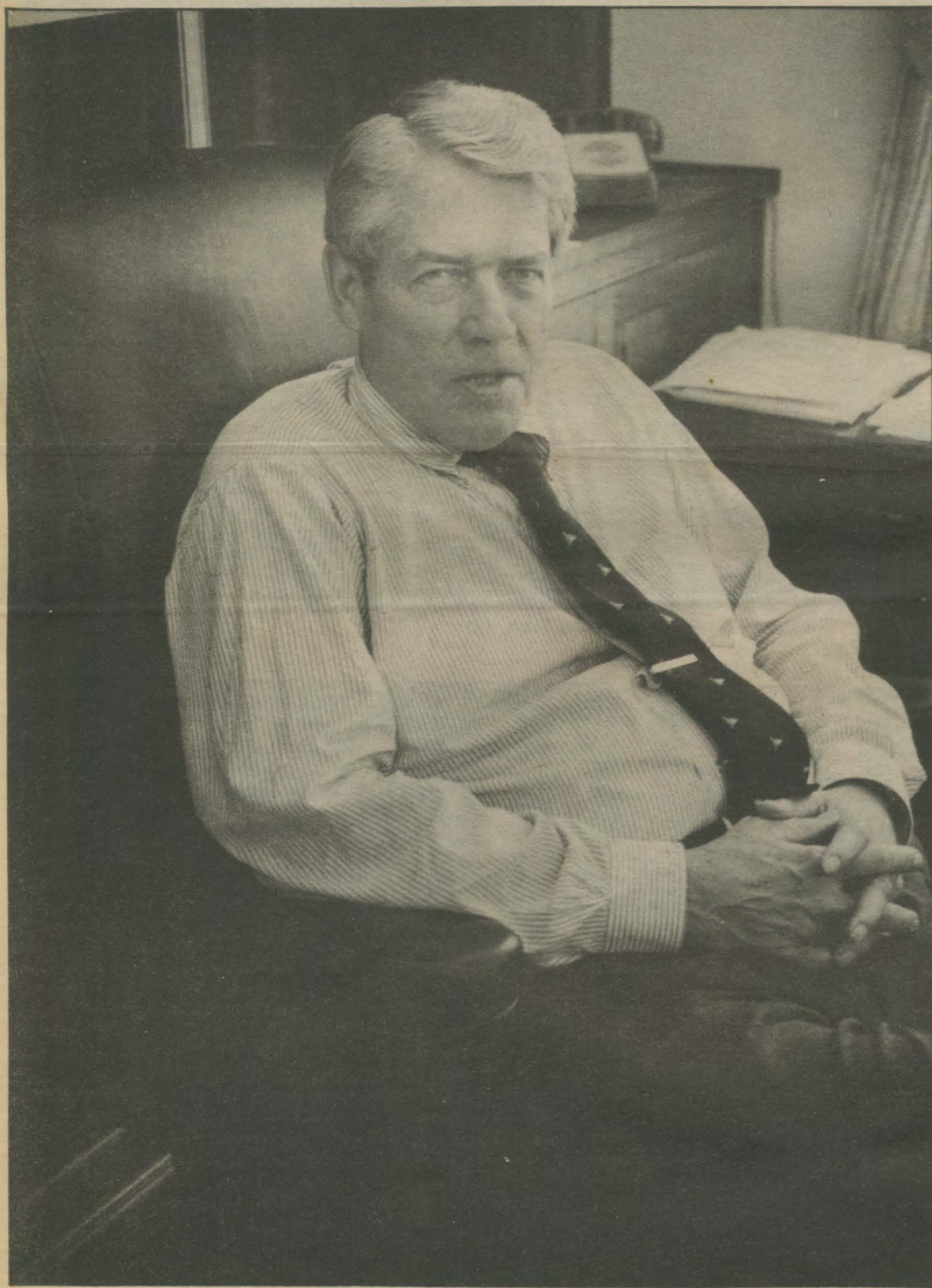


K. Jewell, Humphrey Collection, Minnesota Historical Society

Addressing the U.S. House of Representatives, November 1977

Journalist Donovan: Now Inside Looking Out

Former Time Inc. Chief Advises Carter



William Hoffman

Hedley Donovan in his White House office

by William Hoffman

One thing about retirement, it frees some time. Hedley Donovan sees considerable advantage in that. Not that Donovan was especially relieved to be retiring last spring from Time Inc. after 15 years as editor-in-chief, for he prefers being active and insists that working in journalism was great fun, too. But, at 65, he was hoping to keep busy in a more leisurely way.

Given his retirement plans, however, it is hard to believe that Donovan really expected to relax much. After all, he planned to remain involved in several Time Inc. projects and stay with Time-Life Books. He planned to continue to serve on various boards of directors, including those of the Ford Foundation, the Council on Foreign Relations, the Carnegie Endowment for International Peace, the *Washington Star*, and Merrill Lynch & Co.

Moreover, he planned to remain a trustee of two universities. He would teach a seminar on politics and the press at Harvard University's John F. Kennedy School of Government and also write a book about his 40-year career. At intervals, he would relax at his Long Island home—swimming, playing tennis, and rearranging the rocks on the beach in front of his house. The latter activity is a favorite of Donovan's, according to his successor at Time Inc., Henry Grunwald. "He said he likes moving rocks around for aesthetic reasons—and for weight control," Grunwald said.

Then, last July, President Carter came back to Washington from Camp David bent on making some big changes in his administration, and Donovan's retirement plans got a major overhauling. Aides had advised Carter to, among other things, buttress and streamline White House staff operations. The addition of a prominent person would help—someone who moved easily among the leaders of the intellectual, diplomatic, corporate, and political worlds, someone who could deliver steady and reasoned opinion on a wide range of difficult issues facing the administration.

At the suggestion of Sol Linowitz, chief U.S. negotiator of the Panama Canal treaties, Carter called Donovan and offered him a job as senior adviser to the president. After several days of deliberation, Donovan accepted. He is serving without salary.

Donovan and Carter were not strangers to each other. They met in 1971, several weeks before *Time* magazine ran a cover story on Carter, then newly elected governor of Georgia. Later both men served on the Trilateral Commission, a group of private citizens from Western Europe, Japan, and the United States who study mutual problems.

Carter's offer was not as enticing as it might seem, however. Donovan had already spent a fair part of his life at the center of power. He had traversed the globe for two decades, interviewing more than 50 world leaders. But Donovan has a stock of old-fashioned virtues, among them being willing to serve his country. In this case, he said, it was sort of like being drafted.

Donovan's decision to take the post rested on three conditions: he would not take part in building the president's image nor would he participate in Carter's re-election campaign, and he insisted on direct access to the president. For his part, Donovan volunteered to take a leave of absence from the corporate boards on which he serves.

"The president wasn't surprised that I insisted I wouldn't take part in politics," Donovan said in an interview in his White House office. "I concede that you can't totally divorce politics from policy, but we agreed that I can advise in substantive policy matters without becoming too politically involved."

For a man so formidable and stately in appearance, who belongs to so many high level

committees and think tanks, Donovan is remarkably reserved in person. Reporters have duly noted his disdain for small talk and his penchant for using silence strategically. He delivers his opinions in declarative sentences, without equivocation or hedging, and he delivers them patiently in a deep monotone. He has wry humor and rumbles when he laughs.

The job of senior adviser to the president is new and "still somewhat amorphous," Donovan said. "It is not easily defined, but it is becoming clearer." He said that a journalist can offer certain qualities inherent in the nature of his work, such as diverse interest and wide experience, stamina, and the ability to make decisions under deadline pressure. Upon hearing of Donovan's appointment, one syndicated columnist wrote that it was refreshing to see a journalist in such a role after the usual run of college professors.

Donovan calls himself an independent "with conservative leanings." In a speech to his colleagues at Time Inc. last May, he revealed his main concerns about the country's future: the decline of American productivity, the failure to achieve civilized race relations, and the military threat from the enigmatic Soviets. Further, he noted that the United States can no longer afford to ignore its neighbors, particularly Canada and Mexico.

As a presidential adviser with access to cabinet meetings and national security sessions, Donovan is in a position to do something about those concerns, or at least to assist the president in doing something. As the *Washington Post* editorialized: "Mr. Donovan...is a man of such enormous professional talent and personal distinction that whatever he does for the Carter presidency is bound to be a plus."

Minnesota roots

Donovan was born in Brainerd, Minnesota, on May 24, 1914, the son of a mining engineer. Shortly afterward, his family moved to Minneapolis, where he graduated from West High School and subsequently enrolled at the University of Minnesota.

"I wanted to go out east to a private school like Harvard," Donovan said. "But it was during the Depression and Harvard cost a lot of money. So I went to the University."

Donovan studied liberal arts. As an editorial writer for the *Minnesota Daily*, he wrote editorials opposing compulsory military training, a central issue at that time. "I thought ROTC should be optional. Some students thought it should be thrown off campus, as it was at some campuses in the sixties. The political and social atmosphere on campus was full of tension. Not on the same scale as in the 1960s, but for that time there was a lot of activity," Donovan said.

Donovan was elected to Phi Beta Kappa and graduated magna cum laude in history in 1934. He promptly set sail for Oxford on a Rhodes scholarship with a view to becoming a history professor. When he returned after two years and another history degree, he settled in the East, for that is where he heard opportunity knocking. But he retained interest in his native state and his alma mater.

"I think the University of Minnesota is a first class university," said Donovan, one of the original trustees and now a trustee emeritus of the University Foundation. "It is not an elitist institution by any means, but a very democratic one. I got a fine education there, and I didn't think size was a problem. There is diversity in numbers. I believe in diversity."

The University is unique in that it is the dominant institution in the state, Donovan said. "There are other distinguished universities in the country, some more distinguished than Minnesota, but they are either in states with several universities of note or in states where other institutions dominate. No corporations in Minnesota are as influential as the University," he said.

Donovan once remarked to a colleague that education is the "secular religion" of Minnesota. Several years ago he told a University alumni group that "here one has the advantage of being at a University where a prosperous and rather serious-minded state can bring many strengths to higher education."

Both the University and the state of Minnesota are special to Donovan. "The mood in Minnesota is not one of boastfulness, so perhaps it was predictable when *Time* ran that cover story in 1973 ["The Good Life in Minnesota"] the general response from Minnesota was that we had been too generous. The mood in Minnesota is one of sobriety, perhaps from the Scandinavian stock."

Minneapolis and St. Paul have "a marvelous combination of some very important urban values, and there is easy access to the country for recreation, which isn't true of a city like New York. New York is more dynamic intellectually, of course, but it's also more maddening."

Schumacher—The White House

Donovan gets a presidential welcome following his appointment

Hooked for life

When Donovan returned from Oxford in 1936, he launched a search for an assistantship at a university history department. "I applied at 15 or 20 colleges and universities, but the best I got was an offer of an assistantship at Harvard for $600 a year."

Instead, Donovan looked to journalism and took a job at the *Washington Post* for $25 a week, hoping to save enough money to get back into academe. But in the space of a few weeks he was hooked for life.

"As soon as I started reporting, I liked it so much that I never considered for a moment going back to the academic world," Donovan said. "I was having enormous fun, and I find journalism fun to this day." Indeed, Donovan's view of his craft rubbed off on his children, two of whom are journalists. The third "defected" from the field several years ago, he said.

Donovan worked at the *Post* for five years, covering the State Department, Capitol Hill, and the White House. During the war he served overseas in naval intelligence. He returned to the journalism trenches in 1945, but not at the *Post*.

"The *Post* kept a job open for me, but I wanted to do something else," he said. "The managing editor then was a fellow named Casey Jones. As a boy in Minneapolis I had delivered his paper when he was the managing editor of the *Minneapolis Journal*. He agreed that I should explore other opportunities and gave me the names of a dozen places—all in New York. So that's where I went."

One of the places on Jones's list was *Fortune*, a Time Inc. business magazine. At that time executives at Time Inc. were hunting for Rhodes scholars. Donovan got an interview with the vice president, who recommended him to *Fortune* with praise for his writing skill. He joined the staff and in six years was the magazine's managing editor. Lack of formal business experience was no handicap.

Donovan's talents as a writer, editor, and manager caught the eye of company co-founder Henry Luce. In 1959 Luce appointed Donovan editorial director of all publications, which at that time included *Time*, *Life*, *Fortune*, and *Sports Illustrated*. Just five years later he was at the helm, succeeding Luce, who appointed him "without consultation."

Donovan, p. 14

Students Want More Say in New Tuition Plan

by Elizabeth Petrangelo

Students adrift in a sea of indecision about careers and worried about their hazy futures can always be sure of one thing: tuition must be paid and the money must come from somewhere.

Those whose job it is to keep the University running smoothly and solvently can be equally sure of something else: any mention of changes in tuition policy will set off a chain of rumors, distress, and confusion.

A current proposal to change the way tuition is levied has done just that, despite administration attempts to let students know that the new plan will not make the University rich and students poor.

Proponents of the plan maintain that the University will collect the same amount of tuition income it now collects and that the plan will make little or no difference in the amount of tuition most students pay.

The proposal has not mobilized the student body. Actually, few students are aware of its existence. But a small group of student leaders are not happy with the plan. This group is asking for time—to study, ask questions, and perhaps hold open hearings.

"Hasty action" was never intended, according to members of the administration and the Board of Regents, who are puzzled by the students' feeling that they are "rushing" a proposal that has been under discussion for more than two years.

The new tuition plan, which would change the way tuition is charged rather than the amount that is charged, grew out of a set of recommendations made by a task force on student access appointed by President C. Peter Magrath in 1975. Eighteen people sat on that task force, seven of them students. The task force was to come up with a set of recommendations to make the University accessible to all students, and tuition reforms were part of their recommendation.

Despite the fact that students have been involved in formulating the plan from the start, current student leaders are skeptical, maintaining that since the student body is large, amorphous, and different every year, more time is needed for students to get involved.

"The students who were on the task force then are not the student leaders today," student body president Sue Gjemse told the regents at their November meeting. "Times change and issues change. We need time to study the proposal and conduct open hearings."

Frank Wilderson, vice president for student affairs, said that besides student involvement on the task force, students have been kept informed right along. He has discussed the plan with student leaders himself several times, he said, and has held meetings on the plan at each of the campuses.

"Apparently the fact that students have participated in this discussion right from the start has no bearing on the average student," Minneapolis regent David Lebedoff told the other regents when the plan was discussed at the September meeting. "If that's true, then something's wrong with the process. If the student leaders see their representation as a chimera, maybe they should abolish it and hold public meetings instead."

Gjemse urged the board at that meeting to come up with an "official student opinion" since there is no single student organization that represents all students.

Basically, the new plan can be divided into three parts. First, it extends the per-credit tuition limit so that students taking 14 or fewer credits will pay by the credit. (Currently, students pay by the credit through 12 credits. After that, a flat rate is charged so that students who take 13 or more credits pay the same as those who take 12 credits.)

Under the proposed plan, students who take 15, 16, 17, or 18 credits will pay the same tuition as those who take 14 credits, and those who take 19 or more will pay extra for each credit, at the same per-credit rate.

Second, under the new plan all freshmen and sophomores will pay a uniform tuition rate, lower than the current rate. Juniors and seniors will pay a higher rate that will vary from college to college.

Third, under the new plan tuition rates for different colleges will be tied more closely to the actual cost of instruction in each college.

According to Wilderson, the changes would give a break to part-time students, who now pay more for their total education than do full-time students by the time they earn their degrees. The more vocal students, however, aren't sure they feel that's such a good idea.

"Part-time students often work more (have a higher income) than full-timers," wrote Jim Clark in a document titled "Student Response to 'Recommendations and Rationale of Tuition Policy.'" Clark is chairman of the University Student Senate State Lobby Advisory Committee. "Would they be better situated to pay for their education? If so, why move towards favoring them?"

Tom Foley

Sue Gjemse

Tom Foley

Frank Wilderson

Clark feels that the new per-credit tuition system would provide more of an incentive for students to attend school part-time, and would thus slow down the rate at which students complete their degrees. This could hit small departments where it hurts—in the numbers of students taking their courses during a given quarter—and could cause budget problems for those departments, Clark said.

Clark also maintains that the per-credit system will change the nature of the student body, bringing in a "wave" of part-time students. Several regents have also said that if the new plan does increase the number of part-time students, the shift could cause fundamental changes in the institution.

In September, Clark presented Wilderson with a laundry list of questions and concerns, which Wilderson answered in a 10-page document. In that document, Wilderson said the degree-completion rate probably would not slow down. The only comprehensive study of the effects of major changes in tuition assessment was done at Florida State, he said, and that study showed an initial decrease in average credit hour loads with no permanent effect.

Delaware, Michigan State, and other schools that have changed their tuition systems have not reported any slowdown in progress toward degrees, and none has shifted back to a term fee system, he said.

Wilderson also doubts that there will be a drastic shift to part-time schooling. "One should be careful not to anticipate that these proposals, if adopted, will radically alter the University's character in short order," he wrote. "Although they open the door slightly to some already occurring changes in the mix of publics served, they are very moderate in degree."

Illinois, Nebraska, Penn State, and Texas universities have been on similar systems for some time without suffering any "severe alterations," he said.

Nor does Wilderson think the change will harm small departments. "The unstated premise is that enrollments would drop as a result of the proposals," he wrote. "We don't think so. Nothing in the proposals before the regents provides any incentive for any student to change the mixture of courses selected."

Clark and other students who have spoken before the Board of Regents also worry about the effect the plan might have on students at the coordinate campuses. Bryan Jamison, a student at Morris who spoke to the regents at their November meeting, said the plan would raise tuition for the average student at Crookston and Waseca, where students take relatively heavy course loads. These students would suffer unfairly in comparison to the total student body, Jamison said.

According to Wilderson, the majority of students on the coordinate campuses fall within the so-called "mid-range band" of students taking 15 to 18 credits and thus would not be adversely affected. "One of the purposes of the proposal is to obtain some payment for excess credit loads so that low-load students can be offered some relief," Wilderson wrote.

Students have also criticized the plan for what they feel is the administration's failure to study what the plan will do to economically disadvantaged students. Moving to a uniform rate for freshmen and sophomores is likely to mean that these students will be paying less for the first two years of school than they are now, Wilderson said. "This should provide a positive, though probably slight, incentive to remain in school," he wrote.

If the plan is approved by the regents, it would take effect at the earliest in the spring of 1981, when a new computerized registration system is expected to swing into action.

In the meantime, discussions have taken on a predictable flavor. Student leaders ask for more time, maintaining that the student body needs to study, discuss, and react to the proposal. They are so far not convinced the changes are necessary. "What's wrong with the present system?" Jamison asked the regents in November.

The administration says there's no particular hurry—that students have the time they need—and that students have been involved in the process all along. Further, they say, the new plan will be more fair than the current plan. It would be more fair to part-time students, they say, and to students who attend relatively low-cost colleges. In other words, if tuition were based more closely on the actual cost of instruction, students in low-cost colleges would not be underwriting the cost of educating students in high-cost colleges.

Whatever the outcome, the discussions underscore a continuing problem for major educational institutions: there seems to be no foolproof way of involving every student who has something to add.

Editor's note: At its December meeting, the Board of Regents approved the tuition plan described in this story. Between the time the story was written and the December vote, the plan was amended to address concerns of students at Crookston, Waseca, and Morris. The amendments quieted most of the student opposition.

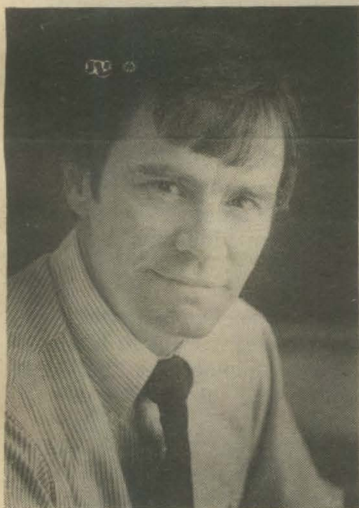
Oneota Dig Tells a Tale of Life Along a River

by Jeanne Hanson

Once upon a time a hawk could fly across half of Minnesota and not see anyone. The land was a study in browns, greens, and blues: prairie tufted with brown buffalo, deer in green, dark woods, and a blue splash of lakes and rivers. Fewer than 2 million people lived on the entire continent north of Mexico, even in the 16th century. Back before 1300, the time of our story, the state's only human inhabitants were three groups of Indians.

One of these groups, the Oneota, a branch of the Sioux, lived along the Blue Earth River near what is now Winnebago. They might have been Minnesota's first farmers.

Their main village, home of 80 to 120 people, covered about 15



Tom Foley

Guy Gibbon

acres and was ringed by a wooden palisade. Families also used dozens of small nearby campsites, hugging lakes now drained. Life was not hard. There was plenty of game and ample space for gathering and planting, with the nearest neighboring tribe nearly a hundred miles away.

The Oneota lived on the Blue Earth for about 500 years, from 800 to 1300. Why they left is one of the missing pieces of their story.

The search

Guy Gibbon, associate professor of anthropology on the Twin Cities campus, is piecing the story together. He spent last summer digging near Winnebago, is now analyzing the artifacts found there, and will do more digging next year. With him at the site over the summer were 13 anthropology students from the University and an equal number from the Science Museum of St. Paul. Their work was at times frantic, at times tedious, but nearly always intriguing.

The first rule of archaeology is "everything happens during the last week," Gibbon said. After digging all summer, they found, in the tenth week, what may be part of one of the large earth-sheltered lodges where the Oneota all lived when they were "in town." During the first weeks they had made less frantic delves into the deep, rich refuse pits.

The basic method is, of course, thorough digging. "All excavation is destruction," Gibbon said, "so you have to be careful." A one- by three-foot rectangle can take several days to dig and analyze. Tiny fishbones, cherry pits, tool bits, and corn kernels—keys to a culture's lifestyle—must be sifted, separated, and labeled. Heavy modern ploughing has compacted the earth, so that most of the material is in the first 18 inches. A maze of pocket gopher tunnels that can collapse and confuse the evidence also complicates the search.

Tricks of the trade

Anthropologists are developing techniques more exotic than digging, some of which are being used at Winnebago. Gibbon located the refuse pits, for example, by running an electric current between two poles anchored in the ground about two feet apart. He moved the contraption around until he found areas where the current behaved differently—because of underground moisture from ancient decayed food, it turned out.

Another method the team used is core sampling. With a 30-foot tube, they pulled up a cross section of prehistory from nearby lakes to spot patterns of climate change. In the samples, pollen grains show periods of greater

Tom Foley

Artifact from the dig

vegetation and warmer periods. Pine and spruce tree pollen is more common in layers representing colder periods. And more evidence of deciduous trees may indicate the "big forest bulge" after the Indians stopped clearing the prairie by setting fire to it periodically. "Pollen counting is one of the most tedious but revealing tools of archaeology," Gibbon said.

The "little sonar wagon" is another archaeological tool but one not used by Gibbon's team. Dragged across a site, it can spot the broad outlines for an excavation by using sonar to locate different materials underground.

Infrared sensing by air is still exotic enough to be a classified military technique, but instruments used to detect the heat of the Vietcong in their bunkers could also detect outlines of underground villages in a huge area, Gibbon said.

Another, still debatable, method is analysis of an early culture's stress level and family focus based on its pottery designs. Neat designs that look "finished" are supposed to signal a less stressful culture, Gibbon said. This conjecture is being considered in the case of the Oneota, who are known for their sloppy pottery designs.

Pottery patterns that are similar across the culture are supposed to indicate something else: a "matrilocal" culture. The theory is that if women stay in their mothers' villages after marriage they continue to make the same kind of pottery, which eventually comes to characterize the village. Patrilocal cultures, where women go to live in their husbands' villages, would have more diverse pottery patterns. "Since the Oneota have chaotic variability in their pottery, we will be looking at this quite tentative hypothesis," Gibbon said.

Although the Winnebago site does not include a burial ground, a few skeletons from the area have been given to the archaeological team. Another trick of the trade provides a check on the nutrition of the culture. Corn as a dietary staple, as opposed to local plants or meat, is reflected in the mineral content of human bones.

Yet another method, called experimental archaeology, may be used to find out about the crops raised by the Oneota. An advanced student may try to plant them in mounds the way the Oneota did, to see if frost really "rolls off" these mounds, keeping the crops warm longer.

The results

Corn and beans, along with fish, squash, cherries, and game were part of the Oneota diet, according to what their garbage has revealed so far. They gathered food and did some farming with hoes made of bison bones. They hunted with chert arrows.

As analysis proceeds, Gibbon hopes to learn more about the Oneota tribal lifestyle. The leaders, probably called "big men,"

seem to have had power mostly when the group was threatened. They were granted no special status symbols or buildings. Nuclear families generally lived at their own nearby campsites, probably gathering at the main village only in winter or for ceremonies.

Why did this way of life end? Why did the Oneota abandon the village, moving south between 1350 and 1400? Gibbon has two ideas.

First, the climate might have become colder, changing rainfall patterns enough to disrupt farming and gathering. The fact that Wisconsin Indians moved south at about the same time reinforces this theory. Or the Oneota might have been part of the large cultural center near St. Louis known as Cahokia, which collapsed for some reason at about the same time. The tribal move south, then, might have been to form new economic and religious ties. Perhaps both things happened, Gibbon said.

Gibbon applauds the Winnebago community's interest in the Oneota dig. Local people have brought in bones and artifacts found years ago when gravel companies dug up part of the area. And they are building a museum where the community's roots can be displayed. Enthusiasm for archaeology is high in the area.

If it were abandoned today, a small Minnesota town or a city neighborhood could disappear into the earth in about a hundred years, Gibbon said. Wooden houses would leave only stains in the ground. Books and wooden furniture would rot. Only glass, plastics, and metals would remain to identify us. A shard of mirror, a cracked toy truck, and a broken microwave oven might be the only clues we left for future archaeologists.

Donovan . . .

Donovan is credited with steering the magazines away from the narrow conservatism and anticommunism of the Luce era to broader national and international perspectives during his tenure as editor-in-chief.

Not that he wasn't criticized. Some groups complained about what they called corporate journalism and its failure to promote social reform. Others attacked Donovan for initially supporting the war in Vietnam. But if he was slow in changing his mind about the war, when he did he brought *Time* magazine with him. And under Donovan *Time* reported Watergate when other editors were still testing the waters.

Being editor-in-chief of Time Inc. is the second best job in the world, according to Donovan. Only being president-elect of the United States is better, he said, and the duration of that job is much shorter. He is proud of having started two new magazines—*People* and *Money*—and of having revived *Life* magazine. One of his primary duties was appointing managing editors. He appointed 14 managing editors, and, with the benefit of hindsight, he claims to be good at it.

Fears and dilemmas

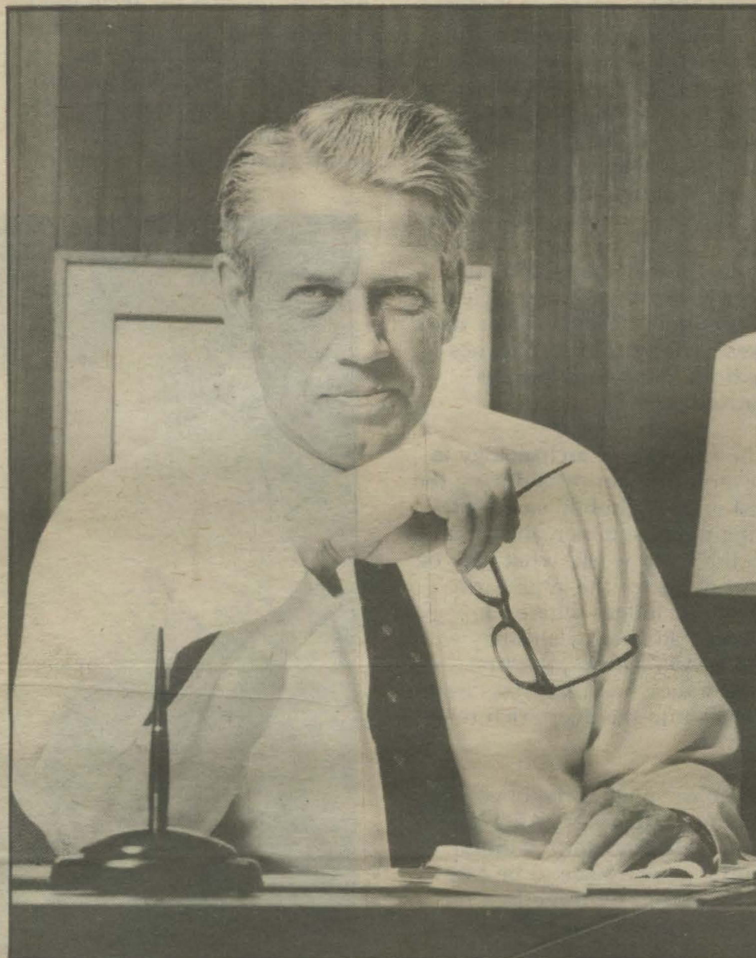
Many journalists and civil libertarians think that the press is taking a beating in the courts. They have rallied against what they perceive to be an insidious assault on First Amendment freedom by judges, including those on the Supreme Court.

These fears are not shared by Donovan. "I am not as alarmed as some people about recent court decisions," he said. "I am not an absolutist on the First Amendment. I don't believe that there is an absolute right to say or print whatever you want to. There is a tendency to suppose that freedom of the press is the supreme human liberty, but it can collide with other important liberties.

"More important than the court decisions, in my view, are the increasing attacks on the accuracy and responsibility of the press—a general suspiciousness in the community at large, some of it unjustified. Part of the problem is a widespread distrust of institutions generally.

"The irony of the situation is that, as journalism does a better job of informing and educating people, they in turn become more critical and expect better performance. People are far less gullible today than they used to be because they are better informed—because of good journalism. Consequently, they are better equipped to criticize.

"Then there is a separate substratum of journalism—investigative reporting—that sometimes carries things too far and needlessly alienates people, public figures especially. People are on guard [for fear] that investigative reporters will intentionally emphasize the negative in order to get a good story," Donovan said.



Henry Groskinsky, Time Inc.

Hedley Donovan

Distrust of reporters is greatest in the business community, he said. Business reporting continues to be the least effective area of journalism. Some reporters assigned to cover the business beat still regard it as "hazing," a nasty initiation to the field, Donovan said. But good business reporting can be very interesting, he said: witness *Fortune* magazine and the *Wall Street Journal*.

Politics, on the other hand, is well reported—after a fashion. "I think politics is covered superbly as a horse race, perhaps at the expense of more serious approaches." Sports and crime reporting are well handled, too, but science reporting leaves room for improvement. In fact, Donovan said, Time Inc. is contemplating a new science magazine, something more than current science coverage in *Time* but lighter than *Scientific American*.

As a trustee of two institutions of higher education—New York University and Mount Holyoke College, a private women's school in Massachusetts—and with lifelong interest in the academic scene, Donovan has some ideas about the future of higher education.

College administrators across the country are worried about the effect enrollment declines projected for the 1980s will have on their institutions. They are also worried about increasing competition for federal research monies and about growing red tape in getting and keeping those funds.

Donovan refused to comment on the latter, saying that it is "a question of federal policy. I'd rather not get into." However, he did hold forth on the question of enrollment decline: "There has been an explosion in college enrollment since World War II. Some people have come to view this growth as the normal state of affairs, with the result that the physical plant has been overbuilt. Some of the weaker and smaller colleges, even though they might have beautiful campuses, are going to be in trouble."

The decline in numbers of students may lead to rising tuition, according to Donovan, but he doesn't believe an increase in tuition will greatly reduce academic opportunity. The enrollment decline might also bring about a reduction in "the tremendous spectrum of courses offered today" as colleges try to figure out a way to cut costs, Donovan said.

It also may bring about a change in the tenure system. "I think we can afford some reduction in tenure without seriously jeopardizing academic freedom." There should be a way of protecting academic freedom without producing a monopoly of academic jobs, he said. "In journalism, there is strong belief in liberty, but no one has total job security." Furthermore, he said, many brilliant and enthusiastic young people who want to teach at colleges and universities are looking to other fields because the academic jobs are locked up in tenure.

Neither does Donovan believe that the recent surge of interest in vocationalism over liberal arts is necessarily as great as reported. "This is one of those false dilemmas," he said, adding that it isn't necessary to have a balance of interest in each area at every institution. Interest in one area or the other will depend on the makeup of the student body. He sees no radical shift.

"We need to have students who are interested mainly in ideas and others who pursue practical training, just as we need both public and private universities. We need both coeducational schools and single-sex schools like Mount Holyoke," Donovan said.

"Perhaps I'm a bit stubborn about it, but I believe in maximum diversity."

Tom Foley

D'Andrea . . .

James for his insight into how one leaps from mental state to mental state."

Aside from myth and metaphor as sources of truth, perhaps the larger question today is "What is the authentic source of moral authority?" Authority is what people are concerned about, D'Andrea said.

Is authority to be found in natural science, social science, or the humanities? "Natural science is very good at knowing, but should it direct us? The sociobiologist E. O. Wilson thinks so. He believes the key to knowledge is in the human genetic endowment. Social science claims *it* should be the authority. B. F. Skinner says that if our survival is at stake, we will have to rely on behaviorism."

The humanities have been the traditional repository of ethical values and the source of moral authority, D'Andrea said. "Who do the people listen to, [economists John Kenneth] Galbraith and [Milton] Friedman, or the pope and the ayatollah?" At the same time, he concedes that the humanities have been put into service by such ideologies as Marxism and reactionary movements.

"What we need is an interdisciplinary approach to understanding truth and reality. Truth sophistication derives from a multitude of disciplines," he said. American universities don't favor this approach: "Here you have specialists shipping up ore from specialist mines."

The humanities, specifically, can help by educating students' imaginations. By exploring a wide range of ideas, humanities students take a step toward becoming autonomous individuals capable of criticizing, creating, and making enlightened decisions, D'Andrea said.

As for competing claims for authority, he believes that, in a democracy, the people have the authority. Democracy is "inherently complementary," permitting the exercise of the educated imagination by way of the ballot box, where diverse opinions and interests are weighed. The more people with educated imaginations, the better for everyone.

"If it sounds like I'm pumping up the humanities program, perhaps I am," D'Andrea said. He believes the program has not lost sight of the value of good teaching.

"Too often students who take courses in the sciences and in the liberal arts have no idea how to reconcile them. We expect them to do it in their heads on the bus home without ever telling them how."

'U' Hospitals First in Nation To Use Artificial Blood

by Paul Schurke

"I feel real strong, just like I did 25 years ago," said a jubilant Haldor Mickelson when he was discharged from University of Minnesota Hospitals in December.

The 67-year-old Minneapolis resident (a native of Elbow Lake, Minnesota) made medical history November 14 when he became the first person in the United States to receive a transfusion of an artificial blood substitute.

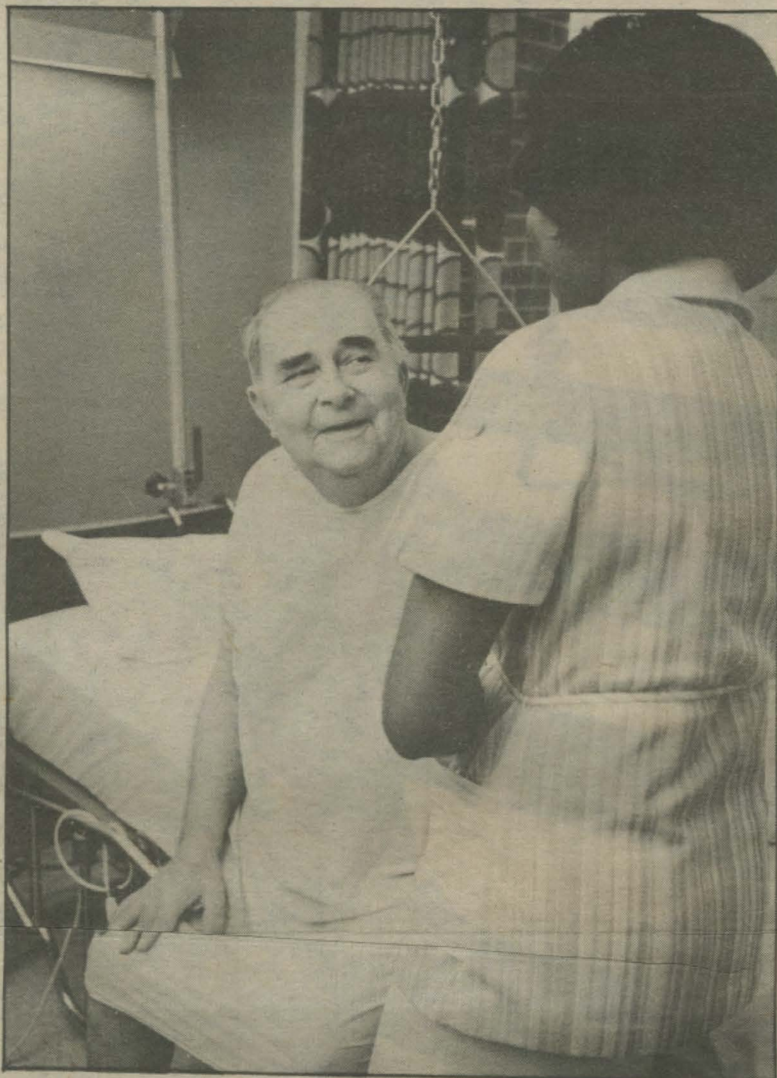
Mickelson was given about four pints of the synthetic chemical Fluosol when his life became threatened by severe anemia, a shortage of red blood cells. Robert Anderson, the University surgeon who headed Mickelson's medical team, said the substance probably saved the man's life.

Mickelson, who was admitted to University Hospitals in September for leg surgery, has always suffered from mild anemia. The condition became severe following loss of blood during tion. When Mickelson, who is a Jehovah's Witness, refused a conventional transfusion on religious grounds, doctors obtained permission from the U.S. Food and Drug Administration (FDA) to use the experimental solution.

Fluosol shares with blood the ability to transport dissolved oxygen to living tissue, although it cannot perform blood's other functions, such as carrying hormones, antibodies, and agents responsible for clotting. It is recognized as foreign by the body and removed in about 24 hours, but it temporarily helps sustain tissue while the body replenishes its own blood supply.

Fluosol was developed by the Green Cross pharmaceutical company of Japan, where it has been used on 55 patients, all of whom are doing well. Although a California subsidiary of Green Cross is importing it for research use, Fluosol has not received FDA marketing approval since animal studies on its long-term effects are not complete.

Researchers believe it holds promise for military, emergency, and ambulance use since, unlike whole blood, it can be frozen and stored for up to two years and does not need to be matched, or typed, to the recipient.



Tom Foley

Haldor Mickelson

University photo lab

James Lewis Morrill

Correspondence

Shaping Futures

I wanted to tell you how much I enjoyed Mr. Hoffman's article ["James Lewis Morrill: A Land-Grant Giant"] in the recent issue.

I think this article gave us all a perception of just how great a man James Lewis Morrill was and how much he did for our University.

I suppose we all could come up with our counterpart for James Morrill; that is, someone at the University who had special talents and a way of influencing and shaping futures far beyond the formality of the classroom.

D. R. O'Hare
IT, 1943
Milwaukee

Accolades & Errors Dept.

I want to thank you for the fine piece about J. L. Morrill in the most recent **Update.** Of all the university heads I knew in a quarter century of working for the state and land-grant universities in Washington, I'd put him at the top. Period!

Russell I. Thackrey
Manhattan, Kansas

P.S. As some Illinois alumnus has no doubt written you, James "Scotty" Reston is a graduate of the University of Illinois, and not of Ohio State. O.S.U. may have given him an honorary degree, though that's not listed in the not-recent *Who's Who* I have.

Editor: Thanks to Mr. Thackrey and apologies to Mr. Reston. The editor, who is prone to apoplectic fits, takes full responsibility for the error.

A Student Perspective

The story about James Lewis Morrill in the fall issue of **Update** provided insight into the contribution of the late president from the institutional perspective. The perspective of the student was missing—appropriately, because he appeared remote from student life—but inappropriately, because Dr. Morrill clearly relished interaction with students and regularly provided occasions to be with them.

The president was insulated from student contacts by the usual bureaucracy. His imposing demeanor and impeccable manners gave him an aura of aloofness. Only a few of the thousands who attended the university during his tenure had the opportunity to observe him closely or to know him personally. Student government and related activities gave me that opportunity, through which I learned that Dr. Morrill was a warm person who took advantage of every occasion to talk with students and especially to listen to their views.

Those of us who had the privilege of knowing him as students remember Dr. Morrill with admiration and affection. He enriched our Minnesota experience.

Gary L. Filerman, '59, '61, '63, '70
Washington, D.C.

Chrono-clarification

I would like to compliment Paul Schurke on his lucid article ["Chronobiology Shows Promise in Treatment of Cancer," fall]. The chronobiology of cancer prevention, diagnosis, and treatment like any growing scientific field has evolved a technical terminology and language that can appear quite difficult. Mr. Schurke has done an especially good job of making concepts, not language, the focus of his article. He conveys these concepts well and clearly.

It is, however, necessary for the sake of accuracy to point out two errors. *Circadian* derives from the Latin *circa*, which means around, and *dia*, which is day (around a day). Secondly, the predicted optimal time for administration of cisdiamminedichloroplatinum II, according to all the animal and human studies we've done so far, is in mid to late activity phase of the subject. This would be in late afternoon if given to patients who arise between 0600 and 0700 and who retire between 2200 and 2300.

William Hrushesky, M.D.
Assistant Professor of Medicine
Section of Medical Oncology

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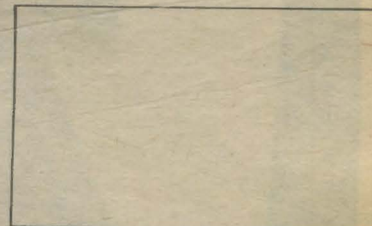

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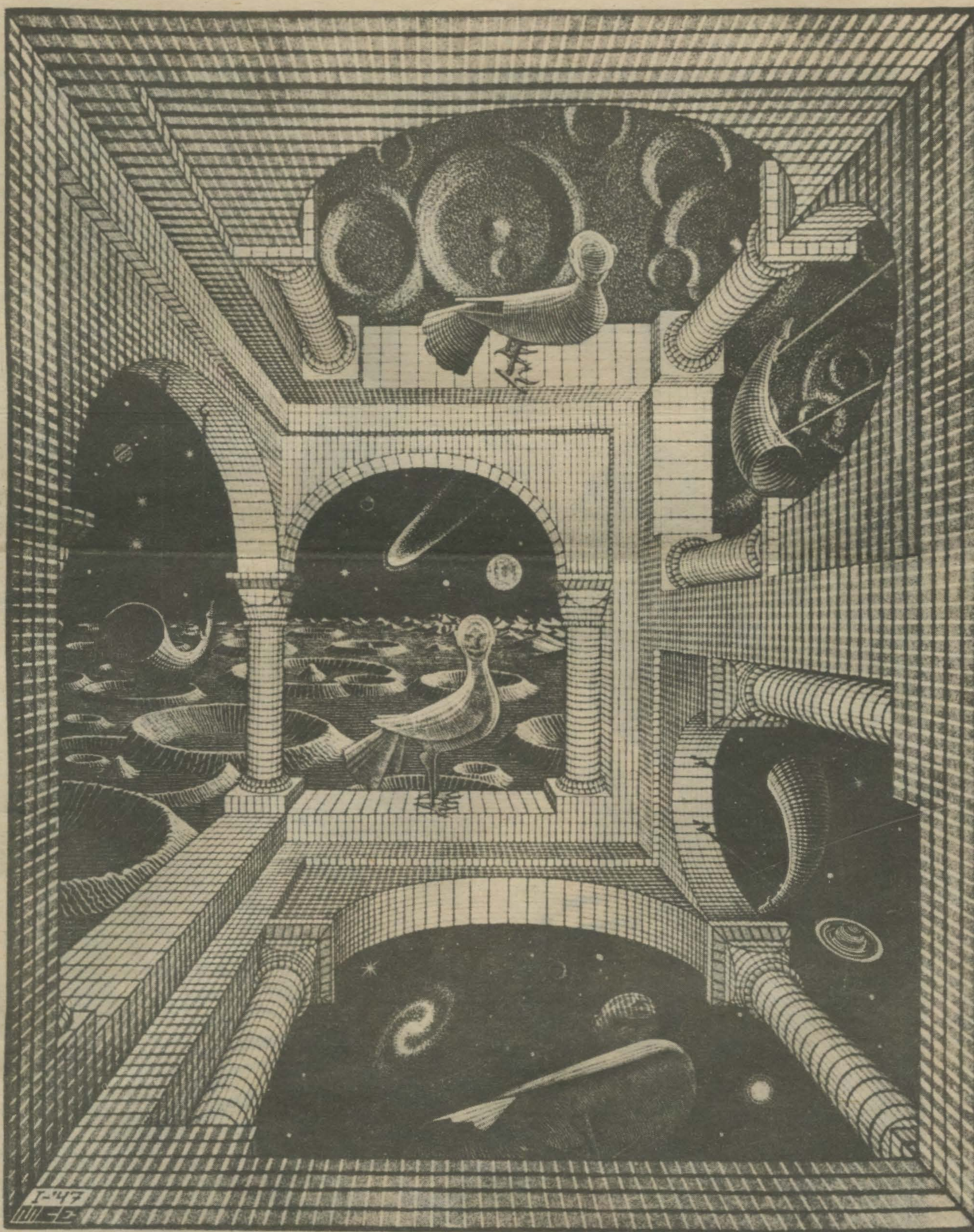


"Another World." From an engraving by Dutch artist M. C. Escher.
See perspectives of science, technology, and health care in the 1980s, pp. 8-9.

Escher Foundation—Haags Gemeentemuseum—The Hague

PKU Clinic
Sleuth of Antiquity
Foreign Languages
Blind Tom
Hidden Women in History

Hamburgers and Milk Shakes Just Dreams for Kids With PKU

by William Hoffman

The wisdom of the adage "you are what you eat" is probably lost on most people. But the parents of children with PKU can't afford to ignore it. For those children, what they eat has a great deal to do with how smart they'll be.

Children suffering from the genetic disease called phenylketonuria, better known as PKU, were born without an important digestive enzyme. Without it, their bodies are unable to metabolize a common amino acid—phenylalanine—present in foods like meat, milk, cheese, bread, and cake, in any food containing protein.

If the children are not placed on a severely restricted diet soon after birth, phenylalanine builds up in the blood and can damage the brain. From birth, children with PKU must subsist largely on a special powder mixed with water —or run the risk of deteriorating intelligence.

Whether to maintain or discontinue the diet after the child's brain has developed poses a medical dilemma for doctors. It was thought for a time that most children with PKU might be safely withdrawn from the diet at the age of five or six, but recent research has unveiled some cases of pronounced drops in IQ among preteenagers who had begun to eat normally.

Some doctors have challenged the effectiveness of the diet, claiming that it hinders growth and that some children who are on it might not have the form of the disease that requires it.

Administering the diet is inconvenient at best, especially after the children start school. Some parents take the risk of stopping the diet rather than endure the cheating and squabbling sometimes associated with enforcing it. Now and then a family is torn apart by the social and emotional burden of the disease.

Another dimension to the dilemma is what to do about young women with PKU who want to have children of their own. These women, particularly if they have never been treated for PKU, run a much higher risk of bearing children with major birth defects than do women in the population at large.

Most states, including Minnesota, have laws requiring that newborn babies be tested for PKU. The U.S. Department of Health, Education, and Welfare recommends that infants be tested within the first two weeks of life. But not all infants who have PKU show high phenylalanine levels until some time afterward.

Phenylketonuria is a rare disease. Only one of every 10,000 to 15,000 infants born in the United States is affected. And unlike other chronic illnesses, PKU can be treated. Its victim can live a normal life span, if not a full life.

However, treatment of the disease brings into play a host of conflicting social, ethical, and medical considerations and values. The diet is the best gamble, but it creates new problems not easily solved and offers choices reluctantly made.

The clinic

The PKU clinic at University Hospitals was established more than 20 years ago and has cared for 120 families. The clinic serves four states and provides diagnostic, dietary, and educational services to the patients and their parents. It is among the leading PKU research centers in the country.

Robert Fisch, professor of pediatric medicine and director of the clinic since 1961, is a national expert on PKU. He has published

Tom Foley

Parents Face New Problems, Hard Choices

dozens of journal articles on various aspects of the disease and continues to conduct research on it. To the families of PKU victims, Fisch is both an expert and a confidant.

"I suppose I could sell the PKU story as a medical success, but I don't think that would be appropriate," Fisch said. "Medical treatment for the disease is improving all the time, but it is not a victory. The problems of treatment are enormously complicated."

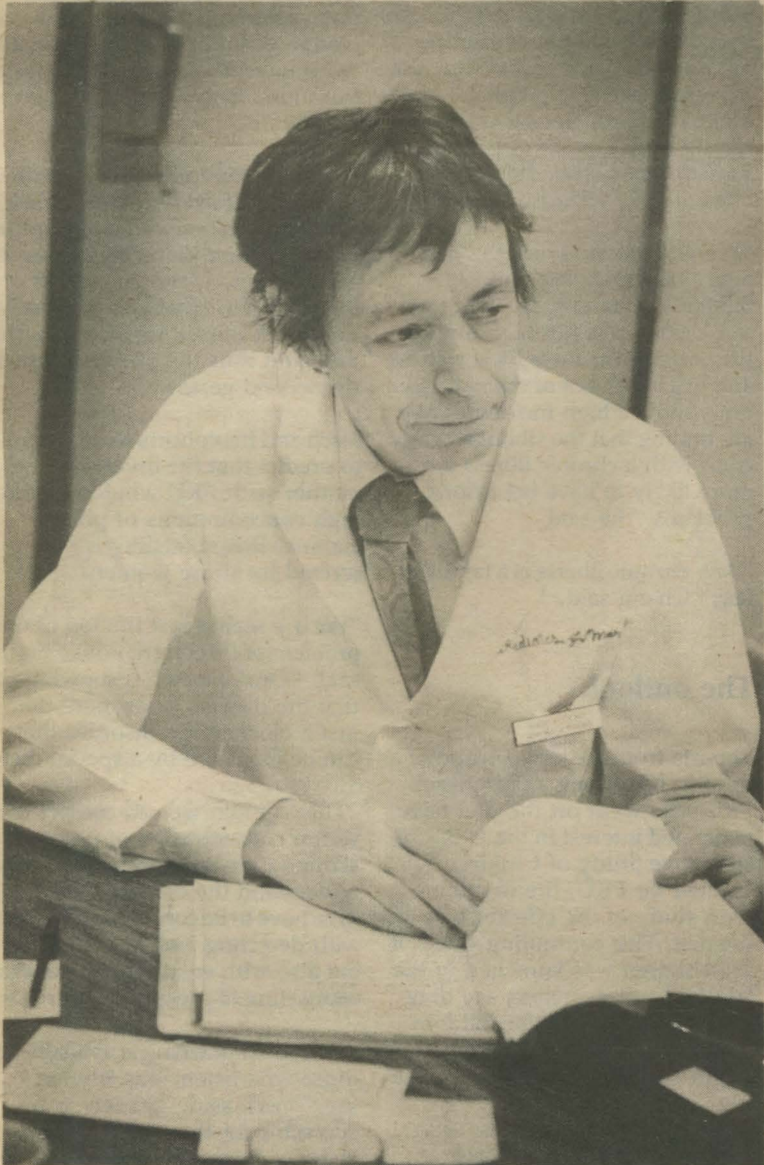
Phenylketonuria is not very old as diagnosed diseases go. The first researcher to link high phenylalanine levels in the blood to mental retardation was a Norwegian doctor. That was in the early 1930s. Twenty years later a synthetic diet was developed for treating PKU victims, and 10 years after that, in the early 1960s, Robert Guthrie of Buffalo, New York, developed a reliable and quick blood test for the disease that led to mass screening of infants.

The diet formulas used by the clinic are Lofenalac and Nofenalac. Both contain essential nutrients but have little or no phenylalanine. Both are sold in the United States by Mead Johnson & Co.

"Phenylalanine is an essential amino acid," Fisch said. "We need it to grow and function—to live. In PKU victims there is an enzyme deficiency that interferes with the normal metabolizing of phenylalanine into tyrosine, another amino acid. Some phenylalanine enters the urine. That's how the disease was first detected. But just how excessive phenylalanine in the blood damages the brain is unknown."

The effectiveness of the diet is clearer. "Of the children who don't get the dietary treatment, 80 percent are severely retarded. Half never talk and a third never walk. It's very rare for a child with an untreated case of PKU to reach an IQ of 100 (the 95 to 105 range is considered normal), though some children who are treated early reach 90 and even over 100."

The diet does make a difference, Fisch said. "Statistically, treated PKU victims fare better than untreated ones. But one must consider both medical *and* social factors. For example, untreated victims often stay at home whereas treated victims go to school. Educational and social advantages aid their development.


Tom Foley

Robert Fisch

"The question is, is the diet good? I say no, not just because it is inconvenient, but because it is not curing the disease. In fact, there is evidence that some damage has already been done during pregnancy—abnormal bone development or retardation, for instance," he said.

The diet needs to be cultivated on an individual basis, Fisch said. Because there are variations in the disease, the diet for each victim must be adjusted accordingly. "This is an individualizing process. Through various tests and growth patterns we can devise the optimum diet for each child most of the time," he said.

Lofenalac is "the principal source of protein and calories" for the children who are taking it, whereas those taking Nofenalac are allowed greater amounts of other foods, mainly fruits and vegetables. Lofenalac is essentially an infant formula, Fisch said. As the children get older they require larger amounts of other foods. Nevertheless, the substance "is still the major source of food" for those on the diet.

The diet "is both a reflection of the severity of the disease and the degree to which parents are willing to cooperate," Fisch said. "Feeding is a primitive instinct and an expression of love. We love to see our children eat. Toward a child with PKU, a restriction of feeding is the proper expression of love. This is incredibly difficult.

"The process must be reversed all through the extended family. We encourage grandparents to attend conferences at the clinic so that they can help the parents manage the child's diet. It takes a great family to do it well. Everybody must be working at it."

Are children with PKU faced with the prospect of staying on the diet for a lifetime? Should teenagers have to subsist on what is essentially an infant formula? "These are very complex and difficult questions," Fisch said. "In the past, when the mentally retarded were ordinarily put into institutions, PKU was an expensive, sad story. Today they are in an ordinary social and educational environment, no longer isolated.

"We must learn to look at the whole picture, not just the intelligence level of the child. There are social and emotional and growth considerations that must be taken into account. Sometimes stopping the diet is just a formality because the parents never enforced it."

Sarah Knoepfler

Pi-Nian Chang

When Fisch does recommend that the diet be stopped, he urges that it be withdrawn gradually. "I can remember a case of a 12-year-old boy we removed from the diet. His parents took him to the closest hamburger shop where he ate all those foods he couldn't eat before. Soon he was back at the clinic, violently sick."

Fisch said the incident reminded him of a time in his own life when he drank too much milk and got sick. That was just after being freed from a Nazi concentration camp.

The family

PKU is a family affair. Not only must parents and siblings cope with the victim's extraordinary needs, but siblings may be carriers of the recessive gene that produces the disease.

If both parents are carriers of the gene, chances are that one out of four of their children will have PKU and two will be carriers.

George and Anita Anfang of Maplewood, Minnesota, were not so fortunate in this respect. The Anfangs have three children. All of them have PKU. In another respect, however, they have overcome the odds: the Anfang family is a model for successful treatment of the disease.

The Anfangs had never heard of the disease until after the birth of their second child. Their first child, Kathy, now 29 years old, was admitted to University Hospitals in 1953 "because she had tension tremors and she wasn't doing the things she was supposed to be doing at her age," her mother said. The disease went undetected.

In 1954, after the birth of Jeff and the discovery that he was retarded, doctors tested for the disease. The tests registered positive and the Anfangs were informed that they were carriers. Little could be done at that time because the diet hadn't been developed.

When Mrs. Anfang discovered she was pregnant five years later, she immediately got in touch with

University Hospitals. Andrea, born in 1960, was placed on Lofenalac nine days after she was born and stayed on it for 11 years.

"It really wasn't that bad," said Andrea, who today is studying for an associate degree in child development at Lakewood Community College. "I remember that I sort of liked the stuff."

"That's right, she actually liked it," recalled Mr. Anfang. "She was excellent, had great self-control. She never cheated once."

The diet was very strict. It consisted of so many grams a day of Lofenalac plus morsels of fruit and vegetables, all carefully weighed. Sometimes it involved oddities like rice for breakfast and lettuce for lunch and frozen Lofenalac to substitute for ice cream at birthday parties. Flavored ice and artificial bread were also part of Andrea's fare, as were some sweets and cereals.

Mrs. Anfang became quite adept at preparing recipes within the restrictions of the PKU diet. And she informed others, including school officials, about Andrea's special diet.

"Good relatives, friends, and neighbors can make all the difference in the world," said Mrs. Anfang. "We got great cooperation from everyone."

In withdrawing from the diet, Andrea drank less of the formula each day for about six weeks. She added bread, sweet rolls, and finally steak to her diet. "I had never had as much as a sliver of steak up till then," she said.

If Andrea ever decides to have children, she will have to go back on the diet. "I'm sure it would be a lot harder now," she said. But even with the diet doctors believe that women with PKU who want to bear children are taking big chances.

The extended family of a child with PKU is routinely tested to see if any members are carriers of the recessive gene that causes the disease. Aunts and uncles on both sides of Andrea's family are carriers of PKU.

Kathy and Jeff get along in spite of their handicap. Kathy works as a kitchen aide at a vocational school, and Jeff goes daily to a community activity center where he swims, plays basketball, and makes handicrafts. He has a part-time job at the center.

"Our main concern is what will happen to Kathy and Jeff when we're gone," Mrs. Anfang said. "If only we could live to be 100 or 150 years old to take care of them. If only they would have had half the chance that Andrea had."

The team

The PKU clinic uses a team approach to treating the disease. Besides Fisch, the team includes a dietitian, a psychologist, and a social worker.

Dorothy Markowitz is the University Hospitals dietitian who consults with the families to make sure that the diet is being properly managed.

The diet has remained basically the same since it was developed in the mid-1950s, Markowitz said. Some things have changed, however—mainly attitudes toward certain foods.

Tom Foley

Marsha Zuckerman

Tom Foley

Dorothy Markowitz

For example, the popular attitude toward sugar, which PKU patients can have, is not as favorable as it used to be. And the health food movement has had a mixed effect on the willingness of some parents to implement a strict PKU diet: the preference for fruit and vegetables is good but the preference for cereal is not so good.

"As a group, these parents cooperate more than any other group that needs to put its children on a special diet because of chronic illness," Markowitz said. "Still, some of the parents are skeptical about the need for it."

Markowitz currently is rewriting a PKU diet instruction book to make it more convenient for parents. Some parents also make use of a cookbook produced by the University of Wisconsin at Madison, she said.

Marsha Zuckerman, a University Hospitals social worker, counsels PKU families and helps them find financial assistance. "I try to hook them up with the right financial resources."

The two principal resources are the Service for Children with Handicap (SCH), a federal assistance program, and Women, Infants, and Children (WIC), a federal program for low-income people.

"The SCH program can help families pay for clinic visits and the diet on a cost-share basis—anywhere from $50 to $1,750 a year," Zuckerman said. (The cost of the diet formula is something over a thousand dollars annually for each patient.) SCH will pay up to $10,000 a year for medical expenses. The WIC program provides low-income families with redeemable coupons to help pay for the diet formula.

Pi-Nian Chang is a pediatric psychologist who helps families deal with the myriad difficulties that invariably arise in treating the disease.

"The majority of parents are very devoted to maintaining the diet," Chang said. "The fact that we get almost 100 percent cooperation from the families for research studies is an indication of that devotion and of how much Dr. Fisch is trusted."

The biggest behavioral problems are limited to just a few families, the problems resulting from neglect and abuse of the child. "What is most frustrating is that sometimes we can see the child deteriorate for lack of proper attention," Chang said.

But most families, to one degree or another, go through a denial phase once the disease is detected, he said. "The denial is normal. We expect it. But it has to be worked through before the family can learn to cope.

"Remember that there is a treatment for PKU, but not a cure. In our society we expect instant diagnosis and treatment for disease and illness. In PKU the treatment is everyday. Sometimes there is an accumulation of frustration leading to complicated social and behavioral problems," Chang said.

Success in treating the disease "is a reflection of how cohesive the family is. This disease can be emotionally devastating to a family. But at least there is a treatment that can prevent mental retardation," he said. Families in which the older children are retarded because the disease was untreated can better appreciate the necessity of the strict regimen for the younger children, Chang said.

Chang also counsels parents about their child's social and psychological development. Behavioral disorders among children with PKU are usually of two types: neuropsychological and emotional. The former manifests itself in hyperactivity, a short attention span, and mild seizures, all most apparent in untreated children.

The common social and emotional problems are low self-concept, passivity, and overdependence, Chang said. "The state provides pre-school development programs, where children who show signs of development delay can catch up with other children by the time they enter kindergarten." Each county in the state administers such a program, he said.

Chang provides vocational counseling to PKU patients in their late teens. Often they have trouble holding on to jobs and making the necessary social adjustments during that difficult period of growth, Chang said. Similar difficulty is sometimes experienced by the siblings of PKU victims, he said.

"We've been studying the incidence of schizophrenia in PKU families," Chang said. "Though the incidence is not high among the parents, the male PKU victims and to a lesser extent the male siblings show a high incidence. We are finding that the siblings of any child with a chronic illness are more likely to have behavioral problems," he said.

"Any chronic illness is a family affair," Chang said.

The outlook

Reports from eastern Europe of a drop in IQ among children with PKU who went off the diet have generated interest in the U.S. Collaborative Study of Children Treated for PKU, the first long-term study of the effectiveness of the diet. This continuing study of 216 children was launched in the late 1960s. Researchers say they will have to follow the children through their teenage years before a firm conclusion can be reached.

As a cautionary note, *The Lancet*, the prestigious British medical journal, editorialized that children with PKU "should be kept on a strict diet for as long as they will accept the restrictions or until the safety of stopping the diet at a particular age has been shown." It added that a relaxed low-phenylalanine diet is better than no diet at all.

But as difficult as the diet normally is to manage, perhaps the more serious concern to medical science is the prospect of women with PKU bearing children. Women with untreated cases of PKU almost certainly have a high risk of giving birth to infants with major birth defects, with small heads or malformed hearts. Whether those who have been treated have a lower risk is not known yet.

"This is very complex and very difficult," said Fisch, who along with Chang provides genetic counseling as part of the PKU program. "What is genetic counseling? What use is it if we tell the parents of the possibilities and the risks and only one listens?

"My advice is that women with PKU shouldn't have children of their own," he said. "But if they decide to have children anyway, then I insist that they see me before conception. This requires incredible comprehension, communication, cooperation, and planning. It takes an exceptional woman, and a woman suffering from PKU is at a disadvantage already."

According to Fisch, a baby with PKU may already have been damaged at birth, so women with the disease should start a low phenylalanine diet before conception. But even if the baby is physically normal, it is itself restricted to the diet, and thus the problem enters the second generation.

Fisch and his cohorts were the first to predict that the breast milk of a mother with PKU would contain high concentrations of phenylalanine. Breast feeding is proscribed for those women.

"We are seeing just the top of the problem of PKU right now," Fisch said. "Our research is showing us that the disease is far more than just a biochemical disorder that can be managed by a special diet.

"The fact that we can control the serum concentration of phenylalanine does not mean we totally understand the disease," he said. "We have to be concerned not only with detecting and treating PKU but also with encouraging genetic counseling of prospective parents.

"Genetic counseling is available to those who listen, this is what I say," Fisch said. "Society is responsible for the genetic well-being of future generations."

As a French scientist Fisch loves to quote once remarked: "There is no victory in biological science."

U of M Bucks the Tide, Is Viewed as Good Investment

by William Hoffman

In a time of double-digit inflation and fiscal belt-tightening, the University is being seen as a worthy investment.

The University ranked sixth among the nation's colleges and universities in the amount of money received from private sources in 1977-78, according to figures compiled by the Council for Financial Aid to Education in its most recent annual survey.

In 1977-78, the University received $34.5 million from private sources, including corporations, foundations, and alumni and other individuals. The only public institution of higher education to receive more private support was the University of California.

"Our overall record in private fund raising is impressive," President C. Peter Magrath said. "We are grateful to those private foundations and supporters who recognize that an investment in the University of Minnesota is among the best investments that can be made." Magrath commended the efforts of the University of Minnesota Foundation and the development office.

Tom Foley

Robert Odegard

Robert Odegard, executive director of the foundation and associate vice president for development and alumni relations, said that the 1978-79 period will show a 9.2 percent increase in private gifts—to a total of $37.8 million. This does not include recent gifts from Control Data Corporation ($2.3 million to the Institute of Technology), the McKnight Foundation ($1 million for merit scholarships), and a number of business and industry grants to the College of Business Administration that total $3.5 million.

A number of things account for the high level of private support, according to Odegard and John Whaley, director of development. Perhaps the most important is that the University is looked upon favorably by most Minnesotans.

"Surveys show that more than 80 percent of the people in the state approve of the University," Odegard said. That is a high rating at a time when other public institutions are suffering from a lack of public confidence in them.

Another factor is the "enlightened attitude toward philanthropy" in the area. "There are all sorts of philanthropic activities going on here," Odegard said, noting the generosity of business corporations, foundations, and individuals alike. "People appreciate what the University has done for them."

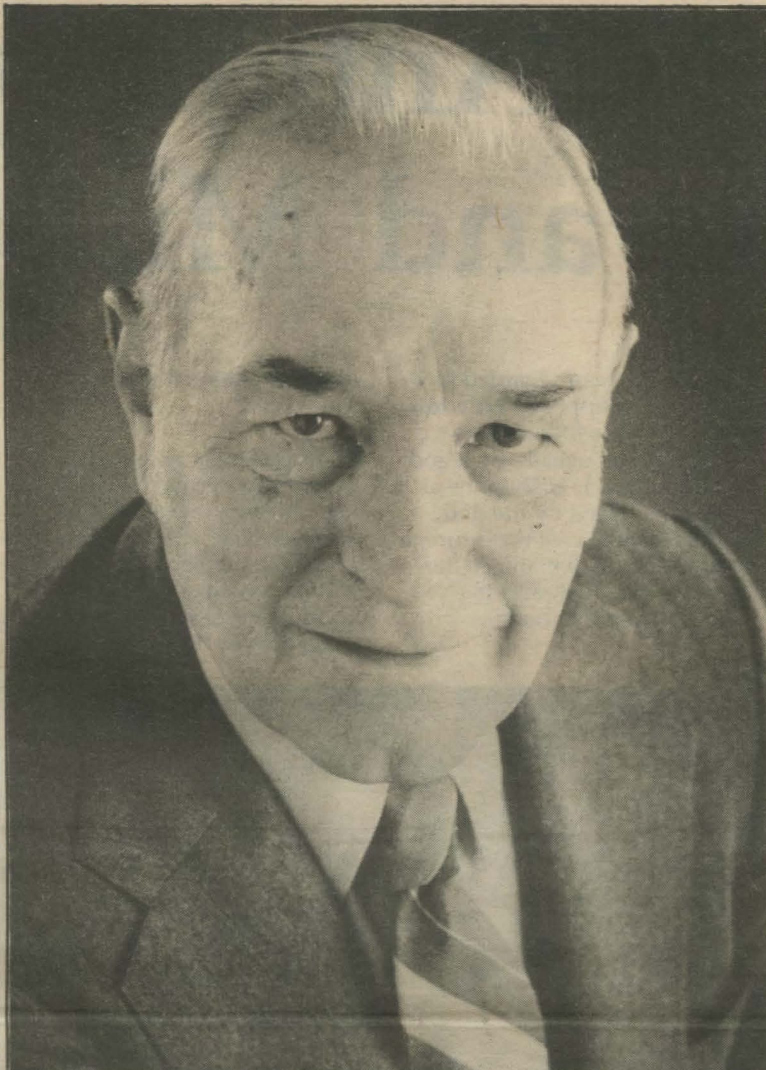
People who give to the University benefit in tax savings, Odegard said, and a corollary to the University's donor education program is more donations to other organizations in the community.

Finally, heads of various University units "are moving in new and exciting ways to cultivate interest and generate support from business, industry, and their own alumni," Whaley said. The College of Business Administration has been remarkably successful in this respect, he said.

Gifts from individuals often have an interesting story behind them, Odegard said. Among the most curious is that of Luckie Waller.

Waller had had no contact with his alma mater following his graduation from the University in 1926 and his subsequent move to California, where he made a fortune in citrus ranching and real estate. One day Waller received an invitation to his 50-year class reunion, so he thought it was a good time to advise University officials that he had decided to leave the University part of his estate. Except for his wife, he had no heirs.

Since Waller's death in 1976, the University has received several million dollars from the Waller trust fund. Some of the money has been used to provide scholarships and some to support the regents' professorship program.



Tom Foley

Cleveland To Head Humphrey Institute

Harlan Cleveland, former U.S. ambassador to NATO, was named director of the Hubert H. Humphrey Institute of Public Affairs in February. Cleveland has served as president of the University of Hawaii and as assistant secretary of state during the Kennedy administration, and has been director of international affairs at the Aspen Institute in Princeton, New Jersey, since 1974. He will begin his full-time duties at the Humphrey Institute August 1.

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UPDATE

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Sleuth of Antiquity Uncovers Demons and Misogynists

by Paul Dienhart

There's something about Gerald Erickson that conjures up images of Sherlock Holmes, master detective.

It's not just that Erickson smokes a pipe, wears Irish tweed sportcoats, and has an office in 309-A Folwell Hall, an edifice of high ceilings, marble walls, and carved woodwork that recalls Holmes's abode at 221-B Baker Street. Like a detective, Erickson makes connections.

From the shadowy byways of antiquity, this classics professor traces connections to today. From the origins of devil possession to early Christianity to Hippocratic cures for hysteria to the phenomenal success of *The Exorcist*. From wife abuse in ancient Athens to the fall of Greece to the women's liberation movement.

Come, Watson, the game's afoot.

A devilish attraction

"There's this cute little girl, see, and she's possessed by the devil. All of a sudden she's spinning her head around like Howdy Doody, floating around the room and talking like a longshoreman with cancer of the larynx. Maybe we can even have her vomit green slime on Richard Burton."

Somewhere along the line, somebody must have said something like this. The funny thing is, they were right. From the huge success of Peter Blatty's *The Exorcist* and its B-grade offspring, one must conclude that people are fascinated with devil possession.

To understand this modern fascination, Erickson examined the golden age of devil possession, the Roman Empire in the first century A.D. His investigation resulted in a paper on the origins of devil possession published in the *Journal of Popular Culture*.

By the first century, Erickson said, possession had become a plague to the Romans, while only 500 years earlier it had been regarded as a blessing that happened only to a lucky few. In the fifth century B.C., possession was usually by a god. The famous oracle at Delphi was a woman possessed by the god Apollo. She could tell the future, a service much in demand. Offerings were accepted, and the wealth at Delphi became legendary.

The reversal in the idea of possession from godly to demonic puzzled Erickson. By putting together ancient attitudes toward medicine, religion, sex, and government, he's come up with an explanation.

Erickson found evidence that there was an epidemic of hysteria in the first centuries A.D. "Hysteria seems to be a disease produced by certain social conditions," Erickson said. "It was an especially frustrating time for women. They weren't allowed any real role. They had very limited participation in government and the arts, and their homes were run by slave labor."

It was generally accepted among ancient physicians that hysteria resulted from an unsatisfied womb, which was forced to wander inside the female's body. The prescription for bringing the womb home to rest was increased sexual activity. But the early Christians found the medical cure for hysteria repugnant.

"Revulsion toward the sexual had swept across the ancient world," Erickson said. "Even sex for reproduction was in doubt since many of the early Christians believed they would witness the end of the world." The Gospel of St. Mark, written toward the end of the first century, said: "There are some of you standing here who will not taste death until they see the kingdom of God coming in power."

Erickson discovered that some of the early Christians went to bizarre lengths for the sake of celibacy. "It is good for a man not to touch a woman," Paul wrote, but allowed that "it is better to marry than to burn." The Gospel of St. Matthew mentions "eunuchs who have castrated themselves for the kingdom of heaven." Thousands did castrate themselves.

Others ran from the temptations of civilization. In the fourth century the Egyptian desert swarmed with refugees from lust—estimates run as high as 22,000.

St. Simeon Stylites carried escapism to new extremes. He spent 30 years on top of a 60-foot pillar. Ropes cut his flesh, and the sores were infested with maggots. When worms fell from his body he would put them back saying, "Eat what God has given you."

Others confronted lust head on, Erickson found. Celibates in some Christian communities lived with young virgins in an institution called an *agapetae*, sometimes sleeping in the same bed. Stern letters from church fathers quickly put an end to this system of lust control.

Considering this attitude toward sex, it must have been intolerable for the early Christians to agree that it could have therapeutic effects. So men couldn't be hysterical because it was a women's illness, and women couldn't be hysterical because of the cure. Thus, Erickson concluded, many hysterical people were judged to be possessed by the devil.

Tom Foley

Gerald Erickson solves the mysteries of antiquity with the finesse of a Sherlock Holmes. Whether sleuthing or teaching, though, the classics professor seldom wears a deerstalker's cap.

Erickson found evidence that demonic possession was a real worry for the early Christians. In the Gospels written during this time, exorcism is one of the most frequent miracles performed by Jesus. The Apostles, too, were given the power "to cast out many demons."

No doubt belief in demonic possession was aided by actual cases of hysteria. "But the times were right for the devil, too," Erickson

said. "That's where the connection is with today.

"I think it's a feeling of powerlessness that gives rise to interest in the occult. When reason and science don't work, you turn to the irrational."

At the same time demons plagued Rome, the government was losing its power to correct problems, Erickson said. The slave labor system was falling apart. Much of the agricultural land had been ruined by bad management. Country people were migrating to the cities, where they lived off the dole.

"I think people are beginning to feel this kind of powerlessness again," Erickson said. "We aim for science to produce good, but it brings evils at the same time. For high productivity we produce smoke that falls back on us in the form of acid rain. As a nation we're experiencing powerlessness as never before."

The case of the cloistered wives

Few people in history have been as powerless as married women in ancient Greece.

The golden age of Athens was also the golden age of male chauvinism. But the women were avenged. In attaining the summit of sexism, the Greeks insured the fall of their society.

That's what Erickson discovered when he put together a course called Eroticism and Family Life in the Greco-Roman World. He found that the ancient Greeks went to extremes that Hugh Hefner and Norman Mailer could only dream about.

Greek wives were kept as virtual prisoners on the second floor of their homes. "Greek males felt that allowing their wives on the ground floor, with access to the door, had the potential for trouble," Erickson said.

An Athenian murder case from the fifth century B.C. reveals the thinking of the time. "The accused blamed all his troubles on the stupid mistake of letting his wife out of the house to attend a funeral," Erickson said. "There she met her seducer."

The plot thickened when the wife had to find some way to meet her lover. By irritating the baby to make it cry, she convinced her trusting husband that she had to switch quarters with him for a night. She would stay downstairs to be near a water supply for the sick baby. And that, ladies and gentlemen of the jury, gave her the opportunity to escape from her husband's house.

Apparently the wife pulled this trick once too often, because the husband eventually caught the lovers in the act. The seducer was killed. The husband was acquitted; he was not a murderer, just a man foolish enough to let his wife get close to a door.

Even the sight of women standing in doorways was too much for the sensibilities of Athenian males. A Greek historian wrote that when the army was returning from battle, some women stood in doorways to inquire about their kinfolk. "The author was horrified," Erickson said. "He thought it was terribly shocking for respectable women to be at doorways."

During social gatherings the wife remained under guard in an upstairs chamber. "All the guests would be male," Erickson said. "If there were any females they were *hetaerae*—something like a Greek version of a geisha girl."

Besides sex, the hetaera provided intimacy, something the Athenian male didn't require from his wife. Some hetaerae were educated, and a few became famous and influential. "I'm sure they were far more interesting companions than the Athenian wives," Erickson said.

The sole function of the wife was to provide legitimate heirs, Erickson said. "Preserving a girl's virginity was crucial. Girls were married off between the ages of 14 and 16 to men about twice their age. They were extremely naive, their only training being in keeping house. It's unlikely there could have been a social bond between husband and wife.

"A female child was definitely a drag. Not only did she come entirely under the domination of another family when she married, but her father would have to pay a rather handsome bribe, known as a dowry, to get her married," Erickson said.

Devils plagued the early Christians. St. Anthony, shown here in a 15th-century engraving by Martin Schongauer, attempted to escape by becoming a hermit in the Egyptian desert. As many as 22,000 refugees from lust followed his example.

"Getting Athenian males to marry seems to have been a continuing problem," he said. "And getting the husband to have relations with his wife was also a problem. Husbands, at one point, were urged to visit their wives at least two or three times a month so that the race of Athenians could be continued."

Greek males had a tremendous fear of female sexuality, Erickson believes. Virginity was an obsession. "They even virginized the goddess of the hunt, Diana," Erickson said. "Diana started out as a fertility goddess, but by the time the Athenians got through with her she was a man-hating huntress, an asexual being."

The segregation of women brought sexual tension, Erickson said. "It wasn't as if the women remained naive forever. There were intelligent women. They may have been allowed to go to the theater, where they would have seen examples of strong women. Medea, for example, killed her children out of hate for her husband, who behaved like a perfect Athenian husband."

The sexual tension probably led to the downfall of Athens.

Erickson agrees with a theory of Philip Slater's that Erickson explains this way: "The Athenian mother would tend to be ambivalent toward her male child. He's her son, yet he's a representative of the male world that keeps her segregated. It's unlikely she'd be able to give her child her complete love.

"A child learns who he is by the way other people look at him. If people are ambivalent, he's not going to have a very sure self-concept. The result was that the Athenian male was obsessed with proving his identity. Everything from sports to politics was made into a contest. That way the identity of the winner and loser was clearly defined.

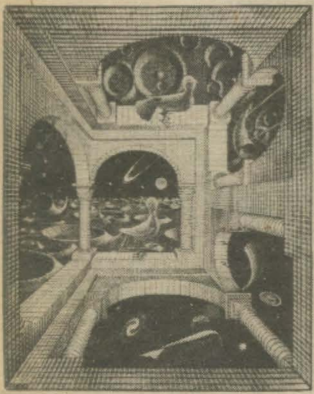
"Athens fell amid great struggles for power. Leaders lost their effectiveness. Either the leader was resented and his orders not followed, or some nonthreatening nonentity was chosen to lead."

As an extreme example of male chauvinism, ancient Athens provides a particularly clear case of the result of sexism: destruction. "I think the thing that has to be made clear to males today is that

Sleuth of antiquity, p. 15

Science, Technology, Health Car

Monorails, Space Shuttles Seen on the Horizon



by Mark E. Canney

Science and technology in the 1970s gave us our first look at the surface of Mars and the moons of Jupiter. They brought us a test tube baby and tried to tell us where Skylab would fall. Through them we discovered both the usefulness and the fallibility of nuclear power.

Terms like *quark, quasar, black hole, recombinant DNA, silicon chip,* and *meltdown* found their way into the popular press and everyday language.

No one knows what new discoveries and scientific jargon the 1980s will bring, but the scientific and technological inroads made during the past decade can provide clues to what the next decade holds in store for us.

The following is a composite of the major events University of Minnesota researchers predict for their fields in the 1980s.

J. Edward Anderson, professor of mechanical engineering with special research interests in transportation: "All of the action in mass transportation research will occur in Japan and Germany."

Anderson blames institutional structures within the federal government for the lack of United States research on mass transport systems. Germany and Japan have made great strides in the area of electrically powered mass transit systems, he said, and if the United States plans mass transit systems for its cities, it will have to import the hardware from Japan, Germany, or perhaps Canada.

The type of mass transit system Anderson envisions is a narrow, electrically powered monorail system that will work like an elevator—the passenger will be delivered to a destination selected with the push of a button.

Lawrence Rudnick, assistant professor of astronomy: "There are a couple of events that will be important to astronomers in the eighties. One very important one will be the launching of the space shuttle."

The space shuttle will enable astronomers to run on-board experiments that should yield a greater understanding of the universe, Rudnick said. Astronomers will also get a better look at the universe after the planned launching of an orbiting telescope, its range unhindered by earth's atmosphere.

Kenneth Keller, head of chemical engineering and materials science: "The most exciting advances of the eighties will be the use of hybrid organs in humans."

A combination of natural tissue and mechanical devices to protect the tissue from rejection will make up the hybrid organ of the future, Keller said. The natural tissue will supply the patient with the products necessary for normal functioning—products such as hormones—and the mechanical device will provide protection for the tissue against natural rejection forces present in the body.

Research on hybrid organs is now being done with animals, but Keller predicts implantation of hybrid organs in humans during the next decade.

Douglas Pratt, head of the botany department, who has research interests in the use of biomass for energy: "The eighties should show a gradual move toward the decentralization of energy in the United States."

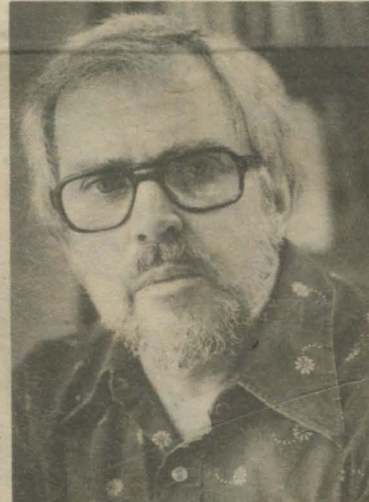
Citing examples of the growing use of regional energy sources such as wood, wind, and solar energy, Pratt said recognition that use of a single national source is inefficient will soon make regional sources of energy more feasible. Total decentralization of energy will not happen during the eighties, but regional energy sources will gain a foothold, he said.

Raymond Sterling, director of the Underground Space Center: "I see a rapid increase in the number of earth-sheltered buildings in the eighties."

The fact that earth-sheltered buildings have little environmental or visual impact combined with the fact that they are cost effective should give earth-sheltered housing a boost, Sterling said. "I don't think earth-sheltered houses will take a pole position in the housing industry of the eighties, but there will be an increase in the number of such houses built."

Tom Foley

J. Edward Anderson



Tom Foley

Douglas Pratt

Tom Foley

George Freier

Tom Foley

Kenneth Keller

George Freier, physics professor and meteorology researcher: "Plans for investigating the effects of solar winds on our atmosphere will have a great impact on our ability to forecast the weather in the eighties."

Better knowledge of atmospheric effects of solar winds will improve long-range weather forecasting and yield a more detailed synopsis of weather effects, Freier said. "This type of weather forecasting will have an immense impact on the agricultural industry in the next decade."

Cecil Waddington, professor of physics, who has done research for NASA: "The launching of the shuttlecraft will have a tremendous impact on the United States space program."

Waddington predicts that the United States will no longer launch satellites from the surface of the earth but from the space shuttle. "Russia sends ten satellites into orbit for every one the United States sends," he said. "The space shuttle should increase the number of satellite launches the United States can undertake."

William Munro, professor of computer science: "Home computers will be as commonplace as the television."

Munro sees the home computer being used for cooking, balancing the budget, shopping, and keeping track of daily responsibilities.

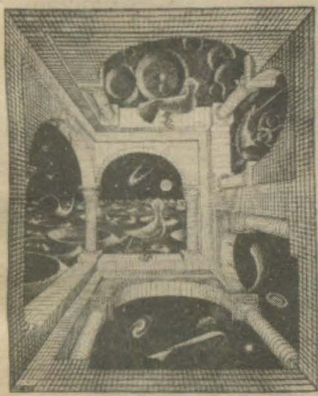
Michael Hoffmann, associate professor of environmental engineering: "The technology will be available for alleviating many of the pollution problems in the world. The question is whether or not it will be applied."

The social, economic, and political structure of the eighties will determine whether the technology that is available is used, Hoffmann said.

"The biggest concerns in the field of environmental protection in the eighties will have to be hazardous waste storage and the protection of water resources," he said.

: A Peek Into the Near Future

Crystal Ball Shows Concern Over Growing Medical Costs



by Bob Lee
and Paul Schurke

The next decade will see a growing disenchantment with medical technology and an increasing emphasis on personal responsibility for health, according to the crystal ball view of physician-researchers on the University's Twin Cities campus.

William Fifer of the Center for Health Services Research and Charles Drage, professor of medicine, both predict a successful effort to contain rising medical costs and both envision health maintenance organizations as the catalyst.

Velvl Greene, a professor of public health, believes health advances stemming from preventive measures are the most cost effective, but he predicts that young people face a tremendous financial burden in caring for an increasingly older population.

Transplant surgeon David Sutherland also anticipates continuing emphasis on preventive medicine while optimistically forecasting new successes in his own field. "We've begun using a technique to induce tolerance of the graft, irradiating the lymph system along with transplanting bone marrow from the organ donor. In addition we are going to use a new drug called cyclosporin A that has been very effective in animal experiments."

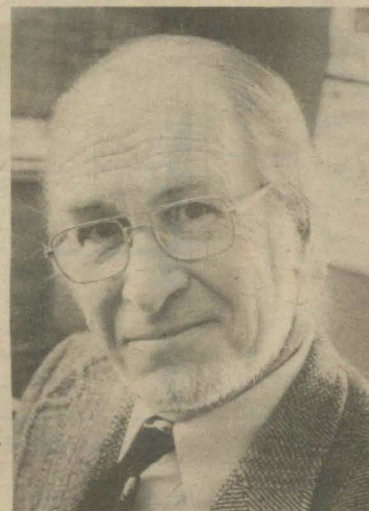
"Because of the increasing cost of technology, we must weigh carefully the cost effectiveness. Physicians, government, and consumers must all ask if the return is worth the expenditures," Drage said.

Computer tomography scanners, which cost about $500,000, are now commonplace in Twin Cities hospitals. "If health care providers do not monitor and control this kind of technology, government, business, or consumers will. Hospitals must cooperate. Somebody—doctors, administrators, engineers, scientists—must ask if this equipment is really needed," Drage said.

Drage said he supports study of the clinical and cost effectiveness of new technology similar to the rigorous testing undergone by new drugs.

Tom Foley

David Sutherland



Tom Foley

William Fifer

Sutherland believes kidney transplants are cost effective. "Dialysis can keep people with end stage kidney disease alive, and it has a mortality rate similar to transplantation," he said. "But dialysis is far more expensive. It costs $20,000 a year compared with $15,000 for a transplant and $2,000 a year for postoperative medications."

A successful pancreas transplant should be cost effective, he added, because it may prevent the secondary complications of diabetes, which require expensive care.

Fifer, who has been an advocate of quality assurance programs for medicine for years, foresees a declining emphasis on costly medical technology. "We are beginning to realize that technology can't solve all our problems. Our economic resources are also limited, and we must face the health needs of a growing elderly population. Many older people have multiple chronic problems that don't easily lend themselves to a solution.

"I believe we're already rationing today and must decide what form it will take in the future. Fee-for-service is a form of economic rationing, but it's not very equitable. Perhaps the health establishment will just be given a set amount of money, a percentage of the gross national product."

Greene suggested that more of that money needs to be redirected from treatment- to prevention-oriented medicine. "Congress is spending its time thinking about how to pay for us *after* we get sick," he said.

Both Fifer and Drage said they see a shift from medical treatment to health maintenance and personal responsibility tied to financial incentives.

"Wellness incentives" are already offered by some insurance companies that have lower rates for nonsmokers and nondrinkers.

The Twin Cities area has long been considered a guiding force in the trend toward health maintenance organizations (HMOs). An HMO has a natural incentive to be cost effective because it gets a fixed amount of money to work with, Fifer said. About 16 percent of the metropolitan population is currently enrolled in the several local HMOs. Most of the physicians are also signed up, so they too have an incentive to keep their patients out of expensive hospital beds, he said.

Fifer and Drage are so convinced that HMOs will successfully contain health care costs that they don't think national health insurance will be enacted.

"The national health insurance concept has been with us since Lyndon Johnson's Great Society," Fifer said. "But now only about 10 percent of our population is uninsured. A massive program of health insurance would be redundant."

"It's a dead issue," Drage said. "But some form of catastrophic illness insurance may be necessary."

Greene disagrees. He predicts that some form of national insurance will be established during the next five years, in which case, he said, "the United States as a whole will have a vested economic interest in promoting good health."

Young people, he said, face an "actuarial time bomb." With a growing elderly population, the burden of health care costs will fall on a relatively small number of wage earners. "Good health, while up to the individual to direct, then becomes a community concern. If *you* are sick, it's going to cost *me*. I want you to be well," he said.

Drage said he thinks the news media will play a key role in creating a greater awareness of what individuals can do to prevent illness. "As consumers are more involved they'll live longer, feel better, and save money on their insurance premiums."

As our knowledge of the epidemiologic factors that cause illness increases, the incidence of disease will decrease, Drage said. "Because people have taken personal responsibility for dealing with smoking, drinking, obesity, and stress, we've seen a 20 percent drop in the death rate due to heart attacks."

"But we're just beginning to invest people with the responsibility for their own health," according to Fifer, who pointed out that alcohol-related illness and chemical dependency are at the top of admissions lists at hospitals around the country.

Both physicians said there is a real need for more information about preventive medicine. "We really don't know what works in public health and what doesn't," Fifer said.

Greene, who has been a public health instructor for more than 20 years, said a surveillance system is needed to determine which preventive health measures are effective. He added that wide acceptance of health maintenance practices will require a wholesale change in attitudes.

"People in public health are just beginning to get into the field of behavior modification," Greene said. And they are finding it a difficult task. "Prevention is a long-term, undramatic, unromantic sort of thing. It has to be approached the same way a football team approaches the big game: before playing on that glorious fall day, you have to sweat a lot in July."

Greene advocates establishment of an outreach program to encourage health maintenance practices among people in rural areas, and cites the county agriculture extension system as a model.

While none of the physicians questioned the availability of research money to investigate epidemiological factors (work, stress, the environment), Sutherland and Drage are concerned about the diminishing dollar for basic science research.

They said it is essential to understand the disease process in the cell and "unless we know how the cell works it will inhibit medical advances."

It is apparent to all four physicians that continued medical progress depends on an aware, responsible public, prevention-oriented physicians, and generous support of research in preventive medicine and basic science.

'What? Sorry, No Comprendo.'

Foreign Languages: A National Scandal, a Local Revival

by Paul Dienhart

Roxie Silbaugh amazed the people of Turkey: she was an American, yet she could speak Turkish. Incredible.

"Even though they resent it, people in other countries have gotten to the point where they really don't expect Americans to know their language," Silbaugh said. "In Turkey, they're absolutely thrilled if an American can put five or six Turkish words together. Most of the embassy people can't manage even that."

Silbaugh studied for a year at a Turkish university because she wanted to learn about another culture. She learned the language by talking to the friends she made. Now she helps arrange similar experiences for other Americans through the University's International Study and Travel Center.

*You have dung on your shoe. **You have dog dung on your shoe!

The ugly American

The United States' incompetence in foreign languages is scandalous.... Nothing less is at issue than the nation's security.

These statements are from the report of the President's Commission on Foreign Language and International Studies. The Commission found in 1979 that fewer than 1 percent of American high school students study a foreign language for four years, and only 15 percent take any language courses at all.

There are more teachers of English in the USSR than there are students of Russian in the United States.

The argument that English will become the universal language just isn't holding up, the report found. Americans can no longer afford to wait for everyone else to learn English.

"For a long time, if you wanted to deal with the United States—and everyone had to deal with the United States—you had to know English. Things have changed," said Peter Robinson, chairman of the University's French and Italian department. "Japan, the Soviet Union, Germany, the Middle East, and China have emerged as forces in the world. They're nationalistic enough so that if we want something from them they'll insist we use their language."

If you wonder why the United States trade deficit is running $29 billion a year, consider that there are 10,000 Japanese salesmen in New York who all speak perfect English. Very few of the 1,000 American salesmen in Japan speak Japanese.

If you wonder how a huge mob could take over an American embassy with no advance warning, consider that only two of the sixty-some embassy employees spoke Persian, the language of Iran.

Even in the United States, English does not have sole reign. Spanish is the official second language of New Mexico and California. Nearly half the students in the Los Angeles school system are Hispanic; English is their second language. Three television stations in Chicago broadcast in Spanish. The largest minority group in Minnesota?—Hispanic people.

In the United States, money for foreign language programs has followed the political winds. The first big push came after World War II. Then there was the post-Sputnik boom, the big valley of detente, and the rising interest associated with the present saber rattling. The President's language commission was savvy enough to use "national security" as one of its major arguments for language study.

There's a mood of optimism in most of the University's language departments. Students seem to be increasingly interested in languages, not because they're particularly interested in national security, but because they realize a second language might help get them a job.

"We get an awful lot of students coming in here," said Caesar Farah, who heads the Arabic program. "Almost any American who's fluent in Arabic has unlimited job potential. In fact, I think you'll find more people from Minnesota working in Saudi Arabia than from any other state I know of."

There are 100 students in beginning Chinese. One of the department's best students is now in law school: he felt it wouldn't hurt a lawyer's career to know Chinese. Another student is very deliberately pursuing a business degree while studying Chinese and Japanese.

Even Latin, the so-called dead language, is making a comeback. "The students feel it's practical. It helps them build their vocabulary and understand the terms of science," said Gerald Erickson, director of the undergraduate Latin program.

The big three

Spanish, French, German. The three most popular languages on campus expect to have 1,100 to 1,500 students who won't be able to get into language classes next year. Present classes are overcrowded.

"Enrollment is up more than 10 percent in the past 10 years. But the faculty was retrenched 20 percent and the teaching assistants have been cut back even more," Robinson said of French and Italian courses.

"Students need language courses for a liberal arts degree," he said. "Courses fill up fast, and because it's a sequence of at least three language courses, students can't put off enrolling too long. By the end of the sophomore year panic sets in."

Last fall, for the first time, the Spanish department was unable to enroll all the students who wanted to take courses.

There's a simple reason for the enrollment increases. There are more students on campus who have a language requirement. The strange thing is that the number of majors has remained steady in French and Spanish and decreased only slightly in German.

It's strange because the traditional employment for language majors is teaching, a job market that has dried up. The alternative is the double major: use language skills to make you more employable in another field.

Many of the language departments are counseling their students to plan double majors. "The doubling up makes for more specific job skills," said Thomas Plummer, chairman of the German department. "A person with a double major in German and business could study economics at a German university for a year, gaining fluency and business credits at the same time."

"We promote Spanish as a good companion for majors in fields like journalism, business, and agriculture," said Nicholas Spadaccini, chairman of the Spanish and Portuguese department.

Students are leading Spanish-language tours at the zoo and the Science Museum, and the newsletter for Spanish majors lists openings for Spanish-speaking volunteers at hospitals, legal clinics, and community organizations. A spring seminar for seniors will concentrate on putting the students' language skill to work in the community. "It will remind them, just before they graduate, that they can make use of those skills," Spadaccini said.

The newsletter also includes such items as the date of the law school admission test. "We think it's perfectly correct for a Spanish major to have the option to go to law school," Spadaccini said.

This kind of activity answers one criticism in the report of the Presi-

Foreign languages, p. 15

Tell Them Erasmus of Rotterdam Sent You

by Paul Dienhart

It was not your typical student rally.

The signs carried slogans like "Step Down to the Low Countries," "Get Your Kicks From Wooden Shoes," and "For Cheese's Sake, Take Dutch!"

But then, the University of Minnesota's Dutch program is not a typical college language program.

It began in 1971, a relatively flush period for languages, when the German department asked faculty member Ray Wakefield to teach a Dutch course. Wakefield expected to get two or three students, but the turnout was close to 30. "They obviously didn't come simply to satisfy a requirement. They were willing to work extra hours. It was fantastic," Wakefield said.

When money got tighter, Wakefield volunteered to teach Dutch on top of a full teaching load of German courses. "The enthusiasm of the students made it impossible to walk away. I felt the program should continue its natural growth or decline and not be nipped in the bud," Wakefield said.

There are close to 150 students in the Dutch program this year. And a major in Dutch studies, one of two such programs in the nation, is being offered for the first time this year.

Credit for much of the success of the Dutch program must go to Wakefield, who is not your typical professor. He not only teaches languages, he promotes them.

Wakefield—who has been known to walk around campus in an Erasmus of Rotterdam costume answering the questions of the curious—rented a house near campus for some of his Dutch students. Christened Netherlands House, it was the scene of a birthday party for the city of Rotterdam and of a campuswide smelt fry. It gave the students a chance to speak Dutch to one another, and when a Dutch writer visited the campus he moved in for a week and cooked Dutch specialties for the tenants.

Netherlands House eventually became too big a financial burden for Wakefield, but he's found other original teaching methods.

Dutch students study grammar on a computer program, proceeding at their own pace. They meet with the teacher one or two at a time to get tutorial help. At least once every two weeks there's an evening gathering called a *borrelpraat* —Dutch for a "drink and chat." It's the closest thing to a class.

Tom Foley

Ray Wakefield has been known to walk around campus dressed as Erasmus of Rotterdam, with willful intent to lure the curious into the Dutch program.

The government of the Netherlands was so impressed with Minnesota's Dutch program that, since 1976, it has provided the salary for a visiting Dutch writer in residence.

Wakefield also teaches intermediate German. He and his colleagues agree that motivating students is the most important thing they have to do. "We left space in the class plan for a special project, something the teacher is especially interested in," Wakefield said. "We hoped the teacher's excitement would spread to the students."

One class explored German media, another wrote and performed skits, another delved into German wine tasting. The latter project ended with a wine-tasting party. A wine expert who was invited to attend was shocked to discover that some of the students could identify more of the wines than he could.

"The wine project was, of course, optional," Wakefield said, "but none of the students refused."

Motivation is all-important in language instruction, Wakefield said. "Languages are very tricky for adults to learn. Without a student's desire to learn, you're not going to get too far."

He admits that his teaching methods won't work for everyone. "I have fun doing things that fit my rather theatrical nature. Those things wouldn't work for some teachers because students would spot it as phony. But there are hundreds of ways to motivate students that are consistent with a teacher's own personality."

Languages Help Rediscover Heritage of Immigrants

by Paul Dienhart

Rudolph Vecoli grew up in the Italian section of a small factory town in Connecticut. He spoke Italian before he learned English.

Now he's the director of the University's Immigration History Research Center. Sitting in a building full of ethnic newspapers and documents, all printed in native languages, he sometimes wonders how the United States could have failed to become the nation richest in languages and ethnic culture.

Then he remembers growing up in that Connecticut factory town.

"I went through a period when I tried to reject my heritage," he said. "A foreign language was a mark of inferiority, ridiculed by other kids and not tolerated by teachers. The last thing a kid wants is to be different."

When he went to college he studied French. "It never occurred to me to study Italian. That was something I wanted to leave behind."

He still speaks Italian with his mother. "It's a language that seems to be attached to a different part of me, a more emotional part. I can express things in Italian that don't come across in English. English was my second language and it seems more mechanical, more tied to reason and logic.

"It's the most natural thing in the world for a language to perpetuate itself. It's the first thing you learn from your parents. The elimination of foreign languages from this country was very deliberate. Some scholars have called it 'linguicide.' "

Dropping the mother tongue was part of what it took for immigrants to fit the American mold. "Forcing people into a mold caused a lot of misery," Vecoli said. "There was a model American, like Jack Armstrong the all-American boy, and most people couldn't quite make it. They changed their names, fixed their noses, and tried to pass."

Iowa actually had a law during World War I that prohibited the speaking of a foreign language in a public place.

"In the past 10 years there's been a healthy shift toward accepting one's self and national origins. It began with the black pride movement and spread to other ethnic groups," Vecoli said.

It's time for the University to get more involved in the ethnic movement, Vecoli said. "We need to do more to serve the ethnic communities.

"Just visit northeast Minneapolis. There are all kinds of ethnic groups that could provide political and community support to language programs. The University isn't doing enough to reach these people.

Tom Foley

Rudolph Vecoli

"I'm afraid there might be some snobbery involved. These people aren't intellectuals who are concerned with literature. But they have as much right to outreach programs as the Minnesota farmer with a sick hog.

"And the advantages would be mutual. I sense a lot could be done to create the right climate for studying languages. Students who find value in their heritage are more likely to study a language."

Blind Tom: The Enslavement of a Musical Genius

by Paul Dienhart

Blind Tom was a living wonder back in the 1860s, '70s, and '80s. He could play two different tunes on the piano and sing a third in his rich baritone voice—all at the same time. And the showstopper was when someone came on stage to play a complicated original piece and Blind Tom would play it back note for note after hearing it just once.

Even if you hadn't seen Blind Tom in one of his concert tours across North America and Europe, you probably would have read about his court trials. There were three big legal battles over who would control his career.

But by the time Geneva Southall heard about Blind Tom in the 1960s he had become a curious footnote in music texts: a blind idiot, born a slave, who had a freakish musical ability. One modern critic called him a "musically inclined human parrot."

Southall, head of Afro-American studies on the Twin Cities campus, was interested enough to search for some original compositions by Blind Tom. She discovered a few, and right away she knew something was wrong.

"I said, 'Wait a minute, this idiot business can't be true.' I felt he deserved a place in history as a serious composer," Southall said.

When she decided to find out more about Blind Tom she uncovered something truly shocking. His musical genius had been incredibly exploited. Blind Tom was virtually a slave until the day he died in 1908.

"I've lived with the Blind Tom story for over 10 years now," Southall said. Her research has resulted in the first volume of a three-volume book, *Blind Tom*. The first book takes Tom from his birth in 1849 through his first guardianship trial in 1865.

Few people could be more qualified than Geneva Southall to tell Blind Tom's story: she's a concert pianist with a Ph.D. in the music of the 19th century.

"Tom has to be viewed as one of the most amazing musical prodigies ever known," Southall said.

His musical abilities were so

Blind Tom was thought to be an idiot with a freakish musical ability. Instead he was a musical genius who was virtually a slave until the day he died, in 1908.

evident that, by the time he was four years old, he became a house pet of his master's family. The children exhibited Tom around Columbus, Georgia, and their mother gave Tom piano lessons. Tom's composition "The Rainstorm" was published when he was five.

His master, General James Bethune, soon became interested in the pet. Bethune was a highly respected lawyer and the editor of a secessionist newspaper. In 1857 he promoted concerts in Columbus and Atlanta for his eight-year-old slave. Tom played music of Beethoven and Mozart and his own compositions.

In 1858 Bethune hired Tom out on a three-year contract for the then remarkable sum of $15,000. A steamboat tour of the South brought $50,000 before it was interrupted by preparations for the Civil War.

Tom's concerts included crowd-pleasing stunts like playing with his back to the piano and doing piano impressions of the sounds of nature and machines. But he also played improvisations on popular ballads and operatic airs, the kind of thing other 19th-century pianists were doing. Most of his improvisations were never written down.

His surviving compositions show a startling sensitivity to sounds. He composed "The Battle of Manassas" when he was 15. It's full of the sounds of brass bands, troop trains, cannon fire and drums. The music reveals the ebb and flow of battle, and the piece ends with a waltzlike treatment of "The Star-Spangled Banner." Southall calls it "one of the most musically rewarding documents of the Civil War." The Bethunes called it "a knockout with the average audience."

In 1864, with the Union army invading Georgia, General Bethune had Tom's parents—who were still his slaves—put their marks on an indenture agreement. Bethune would manage Tom, Tom's parents would get a home and $500 a year, and Tom would get $20 a month and 2 percent of the net profit.

No sooner did Bethune start a tour of the North than he was slapped with a lawsuit that became a national sensation. A black man from the northern city of Cincinnati

claimed he had signed an agreement with Bethune to become Tom's guardian. It was a civil war in miniature.

But Cincinnati was a border city, heavily dependent on the South for trade. The city's forgive-and-forget attitude was evident in the judge's verdict: he turned over Tom, "a mentally defective eccentric," to Bethune, "a good and humane slavemaster."

Tom Foley

Geneva Southall

There were howls of outrage from newspapers like the *New York Times*, but it was all publicity for Bethune. He took Tom to Europe, where the London concerts alone brought in $100,000. The Bethunes were getting rich. They bought a stable and named a racehorse Blind Tom.

Their affluence was aided by Tom's playing three to four concerts a day. "There were long periods when he was made to play, play, play," Southall said. "In 1866 he was supposed to play a week in New York; he was there five weeks. That's the pattern from 1866 to 1885. He was even one of the featured performers at Philadelphia's centennial celebration in 1876."

The Bethunes finally lost Tom in another incredible example of legal justice. They lost him to the widow of Bethune's son, the son who had acted as Tom's manager. She remarried, to a smart lawyer named Lerche, and the Bethunes were taken to court.

"You're not going to believe this, but Blind Tom was actually willed—this is a grown human being—to the wife of Bethune's son," Southall said. So in 1887 Tom was passed like a piece of property to the Lerches.

Tom was not legally a free man until a third court case in 1891. The New York State Supreme Court set him free 28 years after the Emancipation Proclamation.

"The 1891 freedom was a farce," Southall said. "What are you going to do when you're 42 years old, black, blind, and have been kept totally dependent your entire life? He stayed with the Lerches in Hoboken, New Jersey."

Tom had almost no family life. In her old age, his mother complained that "they stole my boy from me." The only people he had much contact with were his white managers. No wonder, then, that Blind Tom hated blacks. He was reported to have shouted at a Boston shoeshine boy: "Are you a nigger? No nigger's going to shine my shoes!"

What Tom had was his music. Even with a heavy concert schedule he would practice four or five hours a day. "Obviously, playing music was where he found his enjoyment," Southall said.

Tom's career declined after 1885, but he made a brief comeback as a featured performer on the Orpheum vaudeville circuit. Tom stopped performing in 1906. He died a pauper in 1908.

Until Southall's research, even Tom's real name wasn't known for certain. His name was actually Thomas Wiggins, but for most of his life he was known as Thomas Bethune, the name of his slavemaster.

Southall's work has already done much to set the record straight on Tom's contribution to music. In 1978 his name was included in *Baker's Biographical Dictionary of Musicians*, with a credit to Southall's research. Music scholars who dismissed Tom as a musical freak have written to Southall to thank her for setting the record straight.

Her main concern now is to show how the exploitation of Tom mirrored the social conditions of the late 19th century. Her book is free of technical discussions of Tom's music, but the second volume will be issued with her recording of Tom's compositions.

"It's such a sad story," Southall said. "It's a sad example of how the system could be manipulated to keep a slave in bondage. Tom was unique. He was born a slave and born blind. That's what makes what he was doing a greater achievement than that of any of his contemporaries."

Survey Asks Former Students To Size Up 'U' Education

by Ronaele Sayre

If you were among the 11,000 students who graduated from the University of Minnesota during the 1977-78 academic year, the University wants to know what you think of your education. Survey forms have been sent to all who graduated in fall 1977 and winter, spring, and summer 1978.

The survey is the beginning of a long-term program in which a graduating class will be surveyed every four years, according to Roberta Armstrong, head of the Admissions and Records Data Retrieval Center and project codirector. An entire class will be surveyed a year after graduation and a random sample of the class will be surveyed again after 4, 10, and 20 years.

The project may eventually include surveys of persons who attended the University but did not graduate.

Among the objectives of the project are to inform the public about the effects of a University education, to assist in program planning and evaluation within the University, to provide current and prospective students with information about the experiences and employment of University graduates, to create a data base for study of the effects of higher education on students, and to help the University maintain contact with a group of alumni.

Ron Matross of Student Life Studies, the other project codirector, said the idea for a survey has been discussed for a number of years. A committee was appointed in the spring of 1977 by the vice presidents for academic affairs and student affairs.

Matross noted that recent government regulations for financial aid recipients required that information be available on job prospects for particular careers.

James Werntz, director of the Center for Educational Development and chairman of the committee appointed in 1977, said the consumer movement has created interest in the effects of education. "There is no implication that a history major is going to get a job as a historian, but the information from the survey will tell how worthwhile the college experience was," he said.

Survey participants are asked about such things as quality of University instruction, vocational guidance and counseling, and job placement; advice they would give to a current University student in their major; long-term career goals; how their employment relates to their college experience; involvement in community, cultural, and professional activities; and plans for further education.

A preliminary report is currently being compiled from a sample survey of approximately 600 students who graduated on the Twin Cities campus in the spring of 1977. Armstrong said the University Foundation has made follow-up phone calls to get people to return their survey forms.

A final report on the sample survey will be available this spring, but some preliminary data are available, although some should be interpreted cautiously because of the small sample size in some categories, Armstrong said.

Of those responding, 80 percent reported they are moderately or very satisfied with their experiences at the University, and only 7 percent expressed any level of dissatisfaction. An even higher number, 86 percent, rated their instruction as good, very good, or excellent. Eleven percent rated instruction as fair, and just 2 percent viewed it as poor or very poor.

Three out of four of those surveyed said they would attend the University again if they were just starting and two out of three would choose the same major.

Eighty-nine percent of all the graduates surveyed are employed, and 74 percent are working full time. A majority are in service-related fields such as education and health care.

A number of the graduates are not pleased with their level of employment. Forty-three percent described themselves as possibly underemployed, and 14 percent said they are definitely underemployed. About 23 percent of those who graduated with bachelor's degrees feel slightly dissatisfied with their jobs.

The preliminary report also indicates that data on differences in the employment status between male and female graduates generally mirror the differences between men and women in the work force at large.

More women than men, 47 percent versus 40 percent, considered themselves underemployed and are generally less satisfied with their jobs. Women graduates are also earning less than men: $11,500 is the average annual income reported for women, $14,000 for men.

In the pilot study report, the data will be broken down only by sex and degree earned, Armstrong said. The major survey report covering the 1977-78 academic year will also include information on colleges and majors. Information about individual schools and colleges—the Graduate School, for example—will be available for comparison with statistics from other universities.

Final results of the major survey will be available toward the end of the year.

Dean Builds Bridges to Business Community

Editor's note: David Lilly was named dean of the College of Business Administration in the summer of 1978. At that time, he was chief executive officer of the Toro Company and had recently served as a governor of the Federal Reserve Board. He was interviewed in January by University News Service writer Jeanne Hanson.

Hanson: What do you consider your major accomplishments since you became dean?

Lilly: I think we've established the identity of the college within the University community and within the Twin Cities metropolitan community. We've been able to make the college more market-oriented, more responsive to the needs of the community. We've been able to interest the community in what's going on here, and the response has been magnificent. Contributions now total more than $4 million. This includes endowment for two chairs, and we're now working out a third.

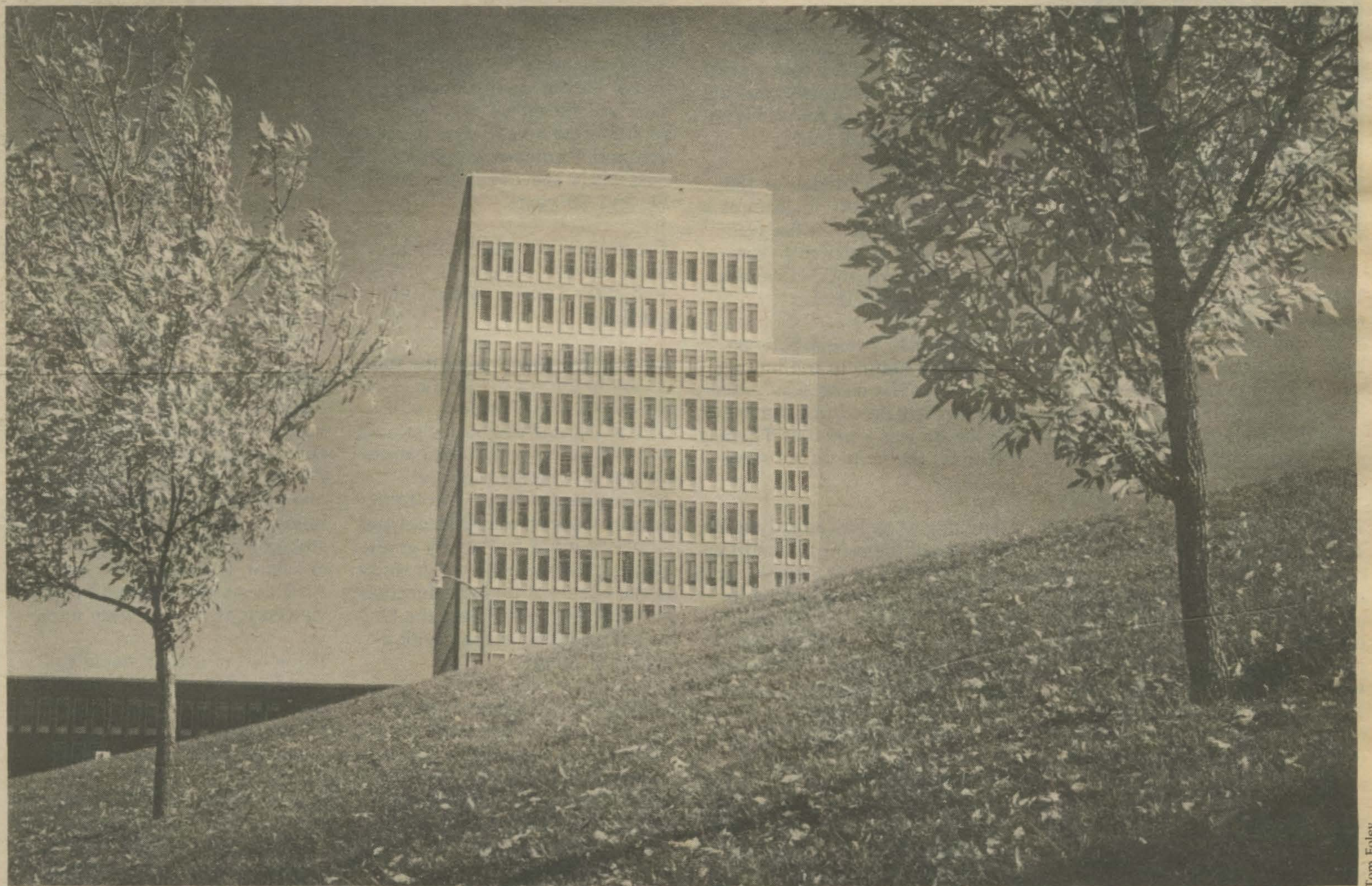
But I think the most important accomplishment is the faculty's development of the new MBA [master of business administration] program. It has been totally exciting and successful. We've increased the quality of the students to the point where we are approaching some of the very best schools of business. And our detailed plans for expansion of this building [the Business Administration Building on the west bank of the Mississippi River in Minneapolis] will allow us to bring together all of our constituencies in a more educational and relaxed environment.

In addition to the programs, the most important accomplishment, I guess, is the general agreement that our faculty must be expanded. We are in the process of hiring something like 13 new faculty members. We're showing some progress in all the areas that I consider important.

Hanson: Does it seem odd to you to work in the public sector after such a successful career in the business world?

Lilly: There's an essential difference between a university and a corporation. A corporation is united in supporting common objectives, whereas a university is by definition an aggregation of individual scholars, each engaged in a pursuit of the truth. The only place that a university and a corporation are similar is in the development of programs—putting together the MBA program, for example. A core of faculty is working very closely as a team to produce it.

We also hope to greatly improve the undergraduate program by changing the content of the required courses and also by emphasizing the spirit of a liberal arts education. Over at the College of Liberal Arts the Committee on Undergraduate Education has just finished a study and defined it very well. The objectives of liberal education, they said, are to have "the ability to think critically and creatively, to gather, recognize, and interpret data, to solve problems, and to interpret and communicate findings." That certainly should be the underlying objective of what we're doing here.



The Business Administration Building on the west bank of the Minneapolis campus

Tom Foley

David Lilly

Tom Foley

Hanson: Apart from producing an MBA program, have there been any discordances in working at a university, any times when you felt like, "No, this is not the way I'm used to operating?"

Lilly: There is a leisurely pace in the University that's difficult to get accustomed to, and I don't plan to get accustomed to it. There's not the same sense of urgency that one finds in the business world and this is, I suppose, appropriate for basic research. On the other hand, in the execution of our programs there's no need to have the same contemplative, leisurely pace.

Hanson: What changes are you encouraging in the faculty? I notice you have a prize for applied business research.

Lilly: We think that one of our main functions is to be engaged in meaningful research that business cannot do and really looks to universities to do—the basic research, as opposed to the applied product development research that industries do. We want our faculty to do applied research and we also want them doing abstract work. We're therefore rewarding people who are published in practitioners' journals as well as in the more basic journals of the disciplines. I also expect every member of our faculty to be consulting. I don't know how they can keep abreast of the problems of industry unless they are.

Hanson: In what other ways are you building bridges to the business community?

Lilly: Senior executives of major corporations teach in several of our programs. One, winter quarter, was coordinated by Stephen Keating from Honeywell. Roger Upson, director of the MBA program, has 3M executives working with a class. The Young Presidents Organization also comes in. We also spend time going around explaining what we're trying to do here. And we meet with overseers from the business community quarterly.

Hanson: I heard somewhere that because your enrollment is going up, you might be encouraged to take some faculty laid off from other parts of the University. Might this happen and how would it be handled?

Lilly: It's possible, and we certainly want to do it if we can. The problem is that the most appropriate disciplines—statistics, mathematics, sociology, journalism—aren't showing any diminution of demand. Registration in these areas seems to be at the highest level ever, so they are as overwhelmed as we are. It's a good idea, but in practice it's difficult.

Hanson: Is there a chance you'll take any historians?

Lilly: I'd have to start from the beginning. I guess if you could make a good historian out of an accountant...

Hanson: Besides the new undergraduate program, what do you see changing in the eighties for the college?

Lilly: Our plan shows us holding our undergraduate program at about 1,460 students, holding our day MBA program at about 860, increasing our evening MBA program about 50 percent, and increasing our Ph.D. program, too.

We're busy analyzing the needs of the nineties: What kind of training do we offer? How should it be focused? We're working right now with Control Data to put some of the basic accounting course on computer. But we haven't come up with any definite conclusions yet.

Foreign languages . . .

dent's commission—that language departments don't point out job opportunities.

The commission also complained that too often language courses are just tacked on to a curriculum, that they don't tie in with other areas of study. The University is working on that.

For example, a German minor was started a year ago. It gives students a chance to get special credit for their interest in German while majoring in another subject. One new course is a three-quarter sequence for people in the sciences or humanities who don't need to speak the language but simply want to be able to read articles in German.

The language requirement

In the late sixties, students demanding "relevance" asked that the language requirement be dropped.

A compromise was reached: instead of taking five language courses, students could take three language courses plus three culture courses taught in English. About half of the liberal arts students now choose this option, known as Route II.

A recent University report on liberal arts undergraduate education upheld the Route II requirement. The reasoning is that three courses give students the chance to see if they have an aptitude for the language. Rather than flounder through a couple more language courses, those who don't have the knack are better off learning something about a foreign culture.

There's general agreement that five language courses give most students only the beginnings of fluency. And the languages most difficult for Americans—Russian, Chinese, Arabic—require more courses or, better yet, actually living in those countries and speaking the language every day.

(The Slavic languages department has a program at the University of Leningrad, and there are plans for teaching Chinese this summer at Nankai University in the People's Republic of China.)

In three courses, even the best students are unlikely to approach any significant degree of fluency. "Route II wastes our time and the students' time," Robinson said. "Given the crowded class conditions, we can't teach even rudimentary French in one year."

"If you're going to have a language requirement, it should be effective," Erickson said. "Students struggle to survive three quarters of Latin and, just at the point where they could start reading the literature, they drop it. They work hard without getting any of the rewards."

While defending the old two-year language requirement, many language department heads admit that they don't have the staff to handle that many students. "In some ways Route II really bailed us out," Spadaccini said.

The future

The President's commission was particularly critical of the quality of teaching in beginning language courses. The University already has a program that helps the graduate students who do most of that teaching improve their methods by reviewing videotapes of their class sessions.

Among the 120 recommendations the commission made in its November report was to spend more money: an increase of $178 million over the $67 million that is currently appropriated for foreign language and international studies was suggested.

A bill in the U.S. Senate now calls for $77 million to be spent on languages and international studies in the next fiscal year. There are three other language bills before Congress, all based in part on the report of the President's commission. One would promote language programs in training for international business, another would provide incentive grants to schools based on the number of their foreign-language students.

"We'd be fools to say we didn't agree with the report," said Dale Lange, president of the American Council on the Teaching of Foreign Languages (ACTFL) and a University faculty member. "It may be our only chance to turn things around for the next 25 years."

Still, Lange said, the ACTFL can't give complete support to all the bills. He calls the incentive grant bill "a sincere effort to get at the problem quickly. But unless it's more selective on who gets the money, the grants could average only $500 per school district."

"Everyone here agrees with the aim of the report—providing more support for foreign languages," Plummer said. He suggests that the University could show its support by making languages a high priority request at the state legislature.

"The state seems to assume that because we're doing our job, we must have appropriate funding," Robinson said. "We're doing the job, but not as well as we should. The department, with increasing panic and ingenuity, is scrambling to make maximum use of our funds—but there's just so much patching we can do."

"The danger is losing any more money," Spadaccini said. "Maybe liberal arts programs like languages will have to start looking for foundation support or do outside fund raising."

The language department heads are aware that college isn't the best place to become fluent in a foreign language. "There's no way we can make the average 19-year-old Minnesotan speak like a native Parisian in two years," Robinson said. "Students should get the basics of a language before they come to college."

The President's commission called for tougher language requirements at the high school level. "The best contribution of the report would be if it strengthened international programs at the high school level. There are no real programs now," said Marilyn Cuneo, who directs undergraduate programs in the Spanish department.

"University programs influence what the high schools teach," Cuneo said. "If college students are beginning to realize that a language can help their career—give them a practical edge—it could have an effect that reaches to the high schools."

Team USA Goes All the Way

Paul Dienhart

Mike Ramsey kept busy signing hockey sticks at a Williams Arena rally for Minnesota members of Team USA, winner of the Olympic gold medal in hockey at the winter games in Lake Placid, N.Y. Minnesotans on the team were former gophers Ramsey, Bill Baker, Neal Broten, Steve Christoff, Steve Janaszak, Rob McClanahan, Buzz Schneider, Eric Strobel, and Phil Verchota; former UMD Bulldogs John Harrington and Mark Pavelich; and Dave Christian, a student at the University of North Dakota, who is from Warroad. The team was coached by the Gophers' Herb Brooks. Another Minnesota Olympian, UMD senior Jim Denney, placed eighth in the 90-meter ski jump.

Sleuth of antiquity . . .

it's not in their self-interest to preserve the system of male domination," Erickson said.

"I'm for things like the Equal Rights Amendment, but changes don't usually come from ethical imperatives. People can protest and say, 'It's not right to discriminate.' But real change comes when people agree the change is in their best interest."

Making connections

Unlike Sherlock Holmes, Erickson is a liberally educated man, a generalist who can make connections between religion, sociology, medicine, and politics.

Holmes had a wide range of knowledge, but his ability to make connections tended to be limited to murder cases.

What's so important about connections? Erickson explained: "One of the primary functions of education is to equip people to live well. Part of living well is to have a wide variety of interests, to be able to make connections between things. Then everything that happens to you isn't an isolated phenomenon. Seeing relatedness in life not only gives you the ability to make better decisions, it gives you a feeling of awareness."

Erickson came to the classics after earning an undergraduate degree in the social sciences and a master's degree in the philosophy of education. "I was taking a course in Latin terminology, and after class the professor took me aside and suggested I take Greek," Erickson recalled. "It was the first time an instructor pulled me aside to say anything. I was so overwhelmed I took Greek.

"I found I liked classics. I knew I didn't want to study a narrow field—where you learn more and more about less and less. In classics, you can do all sorts of things and not become a specialist."

As an associate professor in the Twin Cities campus classics department, Erickson doesn't take the word *classics* literally: he feels free to study popular culture. "If you look only at the finest literature or the recorded history of an era, you're going to miss connections. Eliminate the common culture and you're not going to be exposed to the way things really were." His interest in popular culture prompted him to create courses on eroticism and family life, madness and deviant behavior, and magic and witchcraft in the Greco-Roman world.

"If I came up with these three courses now, it would be a real fight," Erickson said. "There's an atmosphere of contraction and territoriality in academia today. Enrollment is dropping. Funds are tighter. People are guarding their turf. Departments don't have much to do with one another because they're fighting for money."

Erickson thinks the administration is trying to buck that trend. An opening in the classics department is to be filled with the condition that up to a third of the teaching be in interdepartmental programs. Erickson said he is more concerned about students' willingness to absorb knowledge in separate little chunks.

"Today, knowledge is survival. Students are concerned about getting the knowledge to fit them into niches, so they can survive comfortably. Very few have the notion that was prevalent a decade ago—if they could just get enough knowledge they could change the world. It's part of the powerlessness people are feeling that knowledge isn't power anymore. It's just a way to survive. And that's too bad."

Hidden Women Discovered in Historical Search

by Maureen Smith

Women's lives have often been hidden from historians because their achievements have not usually been in the national arena. Now tens of thousands of these hidden American women, from colonial times to the present, have been discovered in a four-year nationwide survey conducted at the University.

The result is a monumental new reference book, *Women's History Sources: A Guide to Archives and Manuscript Collections in the United States*, published by R. R. Bowker Company in New York. Major funding for the project came from the National Endowment for the Humanities.

The goal of the project was to create a reference tool for scholars by identifying and locating primary sources for research. "We did create a reference tool," said Andrea Hinding, survey director and editor of the book. "What we also did was to find and create a compendium of women's history in this country. The book represents in itself a form of history."

Entries in the book are brief, with just enough information to let scholars know what is available in the 18,026 collections that are represented, but even in outline form the women's stories emerge. Included are women who were astronomers, attorneys, engineers, homemakers, legislators, nuns, outlaws, physicians, poets, and stagecoach drivers.

"There are so many stories in there, minibiographies," said associate editor Ames Sheldon Bower. "They really get my imagination going."

Two kinds of women in American history have generally been known to scholars and the public, Hinding said. There have been prominent women—Abigail Adams, Jane Addams, Susan B. Anthony—and *Women's History Sources* reports new information about many of them. At the same time, she said, "we know about women as victims, exploited mill girls, women who died in childbirth. There are stories in the book about pain and failure."

But mostly, she said, the book records the experiences of women who fell in between fame and failure. "It tends to be an account of achievement or at least survival. It tends to be good news.

"One can deduce from the book that women led circumscribed lives, but one of the things that kept us going through 10,000 manuscript pages was our own sense of all these magnificent women who survived and achieved in spite of the obstacles."

Hinding gave an example of an accomplished woman who never became well known: "Louis Armstrong had a wife, Lillian Hardin Armstrong. She, too, was a musician. Some people contend that she taught Louis Armstrong music theory. Her papers are at the Jazz Archive at Tulane University. She was a composer, she was a performer. In the 1930s she led her own all-woman band.

"On one level we can feel deprived that it's only Louis Armstrong who is known to us in our collective national consciousness, that Lillian Armstrong didn't get to perform center stage. That's true, and it's unfortunate. But we can still be proud of her. We found thousands and thousands of women who weren't quite center stage."

Some of the women whose achievements are noted in the book made their contributions in traditional ways. "We have identified women as culture bearers," Hinding said. "Often we're amused by ladies' literary societies or garden clubs. We've tended to adopt male values and undervalue the contributions made in cities and neighborhoods by these groups of women that we've snickered at, men and women alike. But when we look at a large number of these clubs, we can see the cumulative impact."

Religious women are another group that Hinding had not thought of when the project began. Early in the project, she was giving a talk and "bemoaning the lack of women executives." A nun asked her if she had considered the contributions of religious women. "Even though I was raised a Catholic, I had not considered that," Hinding said. "There are women who have presided over colleges and hospitals and orphanages, who have *built* colleges and hospitals and orphanages."

Eccentric and colorful women are also included in the book. One of Hinding's favorites is Nancy Luce from Edgartown, Massachusetts, a poet who lived by herself on a farm and kept chickens in her house as pets. Her book of poetry *Poor Little Hearts* is about her chickens. When her favorite chickens died, Luce erected gravestones for them, inscribed with poems she had written. Her papers are at the Dukes County Historical Society in Edgartown.

Tom Foley

Andrea Hinding

And there is Old Mother Featherlegs, who operated a hangout for outlaws along the Cheyenne-Black Hill Trail in Wyoming and was murdered by the outlaw Dangerous Dick. Her nickname came from the red, ruffled pantalettes she wore around her ankles: the pantalettes fluttered in the breeze "like a feather-legged chicken" when she rode horseback. Photographs of the dedication of a Mother Featherlegs monument are at the American Heritage Center at the University of Wyoming.

Besides uncovering hidden women, the survey team discovered unknown repositories of primary source materials. "Nobody knew how many repositories there were," Hinding said. "The best educated guess was 5,000. To be on the safe side we said 6,000. We found 11,000, and we suspect there are more."

Even scholars with no interest in women's history will benefit from the expanded list of repositories, said Clarke Chambers, professor of history on the Twin Cities campus. "This opens up for all scholars a universe of places to go look for materials, places that they haven't thought of," Chambers said. "Scholars may have known about them locally, but here for the first time they are in a centralized source."

In addition to the obvious places —the Library of Congress, the National Archives—the survey included county historical societies, small museums, labor collections, church collections, school collections. Most of the work was accomplished by a mail questionnaire, with archivists and curators around the country reporting on their own holdings. Twenty field workers were employed for several months in 1976 and 1977 to conduct on-site surveys of repositories that were unable to take on the job themselves.

"The survey that resulted in *Women's History Sources* was an enormous project magnificently done," said University archivist Maxine Clapp. "The publication's scope, format, and index set new standards of excellence for reference guides of this kind. It's the best thing I've ever seen."

In every way, Hinding said, the project grew larger than anyone expected at the start. Her first idea was that she would be the project director, aided by an editor, a secretary, and a half-time student assistant. Instead the work was done by a central staff of 13, plus 12 students, the 20 field workers, and at least 2,000 archivists and curators. "We're talking about 2,500 people instead of the three and a half of us," Hinding said.

The project took longer than expected, and the two-volume book that resulted was more massive than anyone had envisioned. "Originally we thought there might be a scarcity of resources," Hinding said. "We soon knew we had an abundance of riches."

UPDATE

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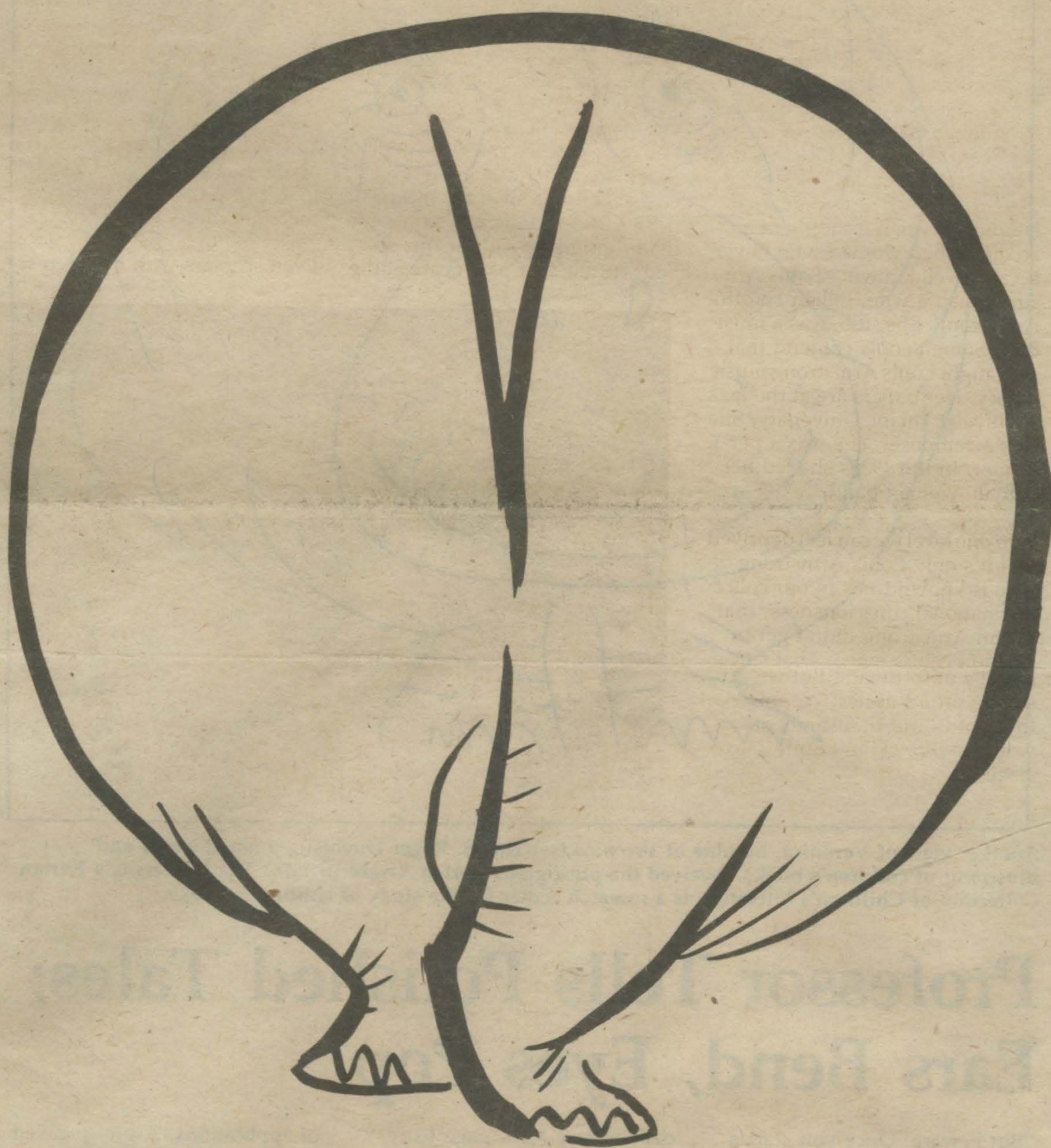


One view of Veronica, a conspicuous hippopotamus, from an ink study by her creator, Roger Duvoisin. See a report on the art of storytelling, next page.

Weimar Arts
Eric Sevareid
Learning-Disabled Students
Landscapes of Fear
Daydreams
Lichens

Storytelling Is Back in Style

by Paul Dienhart

Some people know Harris McClaskey only as "the storytelling man." Every so often, someone will come up to him on a street and say, "Hey, I remember you. You told me a story once."

The stories McClaskey tells are not the shaggy dog yarns one hears in bars, nor the casual personal narratives people tell one another on streetcorners, over coffeetables, and between innings at the ballpark. McClaskey tells polished tales that have been carefully written and made into books. But he does not read, he tells.

Every Saturday for five years McClaskey told stories at a public library in Renton, Washington. At his peak he had a storybag of 60 to 70 stories, stories he could pull out, practice for an hour or two, and tell. He still gets letters from people he told stories to back in the late fifties.

Somehow, the Renton library, which was slated to be closed when McClaskey became director, revived. "There were a lot of young families with children and the library had no particular program for them. Making the effort to contact the children by storytelling got the parents hooked too," McClaskey said.

"There are all kinds of situations where you can use stories," McClaskey tells his storytelling class on the Twin Cities campus, where he is a member of the Library School faculty. "When someone is sick, when a plane is delayed at an airport, when people are gathered around a church basement in an emergency—tell a story. The effect is fantastic. Almost immediately, there's group solidarity and anxiety is reduced."

It's not easy telling stories, McClaskey cautions. "You feel as though you're baring everything you have, but it's very exciting to make that leap and discover you didn't flop. You're looking at people and really communicating. You know when people are touched by what you are saying. You can see the rapport happening, and suddenly a stranger is not a stranger anymore. Children have uninhibited, spontaneous reponses. With adults, stories can stimulate memories of other times.

Another view of Veronica, heroine of *Veronica* (see cover). Roger Duvoisin, a noted writer and illustrator of children's books, received the prestigious Kerlan Award in 1976. The University's Kerlan Collection of Children's Literature is a research center for the study of children's books.

Professor Tells Polished Tales; Ears Bend, Eyes Pop

"But beware. Once you start a story in a public place a crowd will gather. You have to cope with that."

And once you're identified as a storyteller, you have certain responsibilities, McClaskey said. He remembers being invited to an Easter dinner where he expected to be treated like any other guest. "After the baked ham the kids just kind of gathered round. It was story time." Fortunately, he knows about ten stories well enough to tell with no preparation.

A modern revival...

There's a national revival of storytelliing going on, the *Wall Street Journal* recently proclaimed in a front page story. It estimated that there are a hundred professional storytellers—people who earn their living by telling stories. Jackie Torrence, a former librarian, gave story performances last year in 17 states and Canada, earning more than $20,000. In Toronto, a special school for storytellers opened in 1979 and was swamped with hundreds of applications. A group called the National Association for the Preservation and Perpetuation of Storytelling is thriving in Jonesboro, Tennessee.

> "A good story has the same effect on me that I suppose a good drink of whiskey has on an old toper; it puts new life in me."
> —Abraham Lincoln

In the Twin Cities, groups of storytellers are meeting informally to swap stories and critique one another's presentations. The Loft, which usually specializes in poetry readings, is planning to include storytelling on its schedule. The Abbott-Northwestern Children's Health Center uses storytellers to entertain its patients. And people from as far away as Alaska and New York City came to attend an intensive version of McClaskey's storytelling course last summer.

It is librarians who are most commonly trained as storytellers. But the routes to storytelling are various, often born of the necessity to keep a group of people entertained.

Anatoly Liberman, a professor in the German department, found himself in that position when, at 22, he took a job in a boarding school outside of Leningrad.

"This was a boarding school, but not the way you think of a boarding school in the West," Liberman said. "It was not a privileged school, but rather the other way about. It was for students who could not or would not go to other schools, so in very many cases they were not the best behaved children in the world.

"I was a form master there. That meant putting them to sleep, counting the pillowcases, seeing that they were washed and everything else you have to do. There were 32 children. Their favorite thing was listening to a story at night. That was prohibited by the administration, which felt that bedtime stories were really unnecessary. However, in spite of this prohibition, I told my stories—because I enjoyed it myself and everyone else did. I didn't see any reason why I shouldn't do something everybody liked.

"There were two dorms, one upstairs for the girls and one downstairs for the boys. So on odd days I would tell my stories to the girls and on even days to the boys. There was always fierce competition to hear stories. Sometimes I would see children from the other floor creeping to the door and listening from the corridor. I told a lot of Shakespeare, a lot of Homer, a lot of Oscar Wilde's fairy tales. I went on telling stories when my son was born. I go on doing it now as part of my University work."

Liberman, who gets a chance to tell stories in his folklore classes, is a firm proponent of not reading to a group of people. "It seems stupid to read to a group, but it doesn't seem stupid when I do it with one

person. A crowd needs living speech. Storytelling is an art that presupposes a group of listeners. The origin of all literature is a storyteller entertaining a group, catching inspiration from the listeners."

...of an ancient custom

The first stories were probably chanted sing-song around a campfire: "I the clever one, I the skillful one, I killed this beast." Naturally, stories of personal accomplishment were embellished, sometimes to the point of being memorable enough to be passed on to other generations. Storytellers kept this knowledge for the group and were respected for their service.

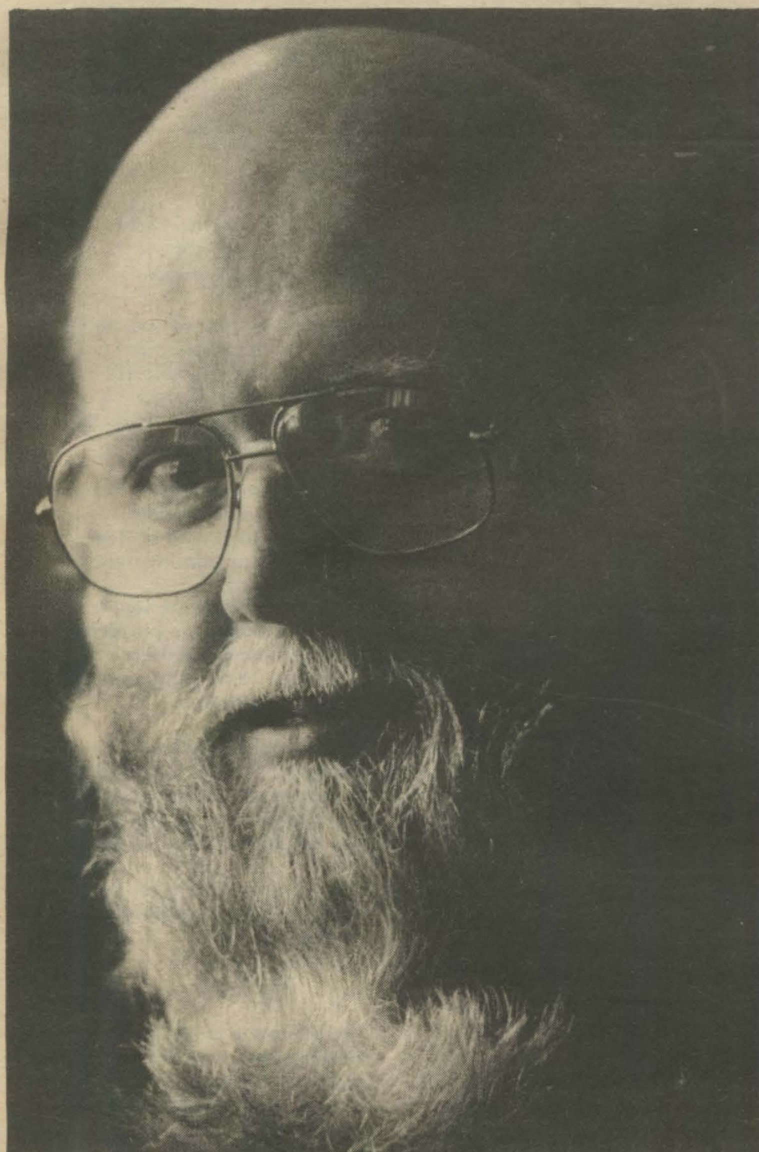
The first written record of storytelling is a collection of Egyptian tales dated at 4000 B.C. They tell of how the sons of Cheops, the great builder of the pyramids, entertained their father with strange tales, each trying to top the others.

For a long time stories were adult entertainment. The tales from the *Thousand and One Nights*, certainly not children's stories in their unexpurgated form, were chanted by Arab storytellers called *rawis* in Baghdad street bazaars. In old Russia, the storyteller was the most respected person in the village. Carpenters and other workers would hire the storyteller to keep them entertained on the job.

Folk tales, for children or adults, seemed in danger of being forgotten, but then the Brothers Grimm published their folklore collection in 1812. Jakob and Wilhelm Grimm wrote the book for serious, scholarly reasons. To their surprise, folk tales became the rage. It was fashionable to visit one's childhood nurse and recount her quaint tales to one's intellectual peers.

"The Brothers Grimm collection was the single most important group of stories affecting storytelling for children," McClaskey said. "It helped European parents believe it was important to continue telling stories to children."

McClaskey regrets that "today stories are relegated to the nursery. All kinds of people can enjoy listening to stories."



Tom Foley

Harris McClaskey

Some Tips on Telling a Story

by Paul Dienhart

"Anyone who wants to can be a storyteller," says Harris McClaskey, professor of library science.

"There are few people who aren't storytellers. Willy-nilly, most of us tell 'I stories' about our personal adventures. Storytelling is a very natural kind of thing. It's just the willingness to work on a story and commit it to memory that separates the professional storyteller," said Patricia Turner, a University librarian who tells stories as a community resource volunteer.

McClaskey's course on storytelling emphasizes stories for children, but the skills taught are broad enough to cover telling stories for senior citizens, social clubs, and religious and ethnic groups.

"The first priority is selecting stories you care about," McClaskey said. "Then you learn to use what you have to tell the story. One female student last summer wore sandals, and her feet were incredibly expressive. It was unconscious choreography. One male student had a rather well developed belly—and he used it! Everyone develops a distinctive style."

Learning a story is not so much memorization as interpretation, McClaskey said. He likes to buy a book of the story and underline the key sentences. He uses index cards to jot down the major events in the story. "Essentially, you're building a mental framework for a story. Often there are patterns to keep in mind. There may be three sons performing three different tasks. I remember the frame the story hangs on and memorize only key phrases and terms that give the story flavor."

Stories tend to have action-filled plots. Description is used almost as seasoning, McClaskey said. The plots generally have patterns that make them fairly easy to remember. "If stories couldn't be remembered they wouldn't have lasted," McClaskey said.

"Storytelling is essentially an art of understatement," he said. "Beginners tend to ham it up too much." He suggests practicing in front of a mirror, developing only the movements that convey something.

"There are many similarities between telling stories and singing," said Turner, who was trained in storytelling in the New York City library system. "When you tell a story you use pauses and make your voice go up and down to convey meaning as in a song. If a story calls for a cat, I believe I should make a cat's voice. In 'The Three Billy Goats Gruff' the voice has to change to indicate the difference in size among the goats."

Turner likes to use silence to build suspense. And, she said, "nothing can silence a group of children like an adult standing in front of them being quiet."

Turner usually tells stories to grade school children. She makes sure that she tells even the youngest children what book the story came from, but she never shows them the book before the story. "We live in an extraordinarily pictorial world, and there's not much freedom for the imagination," she said. "I like to let the children make up their own creatures and places."

A person interested in learning more about storytelling "can find a lot going on by lifting up a rock or dusting off a mushroom or two," McClaskey said.

The local children's library is the logical starting point. If there's any storytelling in the community, the librarian should know. The University's Kerlan Collection of Children's Literature is one of the most extensive in the nation, and it is visited by storytellers from all over. Classic books on storytelling include works by Ruth Sawyer, Ruth Tooze, and Marie Shedlock.

"When you become known around town as 'the storytelling man' or 'the storytelling lady,' that's when you know you're a success," McClaskey said. "It means you're looked at as the personality stories flow through. That doesn't happen when you read stories."

Tom Foley

Patricia Turner

Who Lives Happily Ever After?

by Paul Dienhart

Nodding her old white head, the gentle storyteller concluded "...and so Simpleton married the princess and they lived happily ever after. That is, until she tried to kill him with a frying pan and they had to get a no-fault divorce. The end."

It's enough to send a child into a crying frenzy of righteous indignation.

But if the old storyteller had looked at the fairy tale carefully, shé probably would have seen that the comforting conclusion, "And they lived happily ever after," was probably the least likely outcome of the story line. That's the discovery

Farrar, Straus and Giroux

"Oh, how the poor little sister did grieve!" An illustration by Maurice Sendak of the Grimms' "Hansel and Gretel." Note the caged Hansel below the dog's right forepaw.

of Anatoly Liberman, professor of German on the Twin Cities campus who teaches courses in folklore.

Far from being a misanthrope who enjoys spoiling children's fantasies, Liberman aims to provide a finer appreciation of fairy tales. His analysis is deliberately loose.

"Fairy tales come to you when you're very small, and you don't analyze them," Liberman said. "I think the greatest thing about real art is that we swallow it without thinking. That is the way it must be. You enjoy the plots of fairy tales and they stay with you as long as you live."

Think for a while about fairy tales—German, Russian, French, Scandinavian, or Chinese tales—and the first thing you notice is that they all have basically the same plot. Liberman likens it to the evolution of fish. "Fish are all different, but are all more or less streamlined in order to survive. The same with tales. In order to survive, the tale has to be remembered by the storyteller. It has to have certain structural peculiarities."

The typical fairy tale contains a quest that ends with the hero marrying the princess and both of them living happily ever after, Liberman said. If there are three sons, the third son will certainly marry the princess.

The first surprise is that the heroes of fairy tales are seldom very heroic. The tipoff is that they are usually called something on the order of Ash Lad, Fool, Simpleton, or Numskull.

"In a typical tale the hero will be walking through the forest and meet a fairy who asks if he'd like to be happy," Liberman said. "The hero says yes and the fairy says he happens to know a princess who would be happy to marry the hero. The hero will then have to perform a task. If his task is to make the princess laugh, a magic helper will provide a pipe that produces dancing pigs. The princess has a rudimentary and crude sense of humor and so she laughs."

The plot seldom depends on someone's being killed, except for a few Scandinavian tales that involve killing trolls, Liberman said. "Even then, magic usually helps. There's no real virtue in killing a troll if a magic bottle makes you twenty times stronger than the troll. Usually the hero is not even clever enough to find the bottle. Someone has to help him."

So does the hero deserve the princess? Absolutely, says Liberman. "He has common decency, something the other characters lack. He may not be bright or clever or ambitious, but he has a certain sweetness and willingness to listen to advice.

"Fairy tales reflect wish fulfillment. Even the lowest person may marry a princess. That is why fairy tales will never die —they provide hope."

But is the princess really the sweetest girl in the world, a princess among women? "Nothing could be further from the truth," Liberman said.

"Many fairy tales have a type of heroine I call 'the unwilling bride,' " he said. "They commonly resist the attentions of the hero. In Russian and Norwegian stories the princess can be extremely hostile. Often she is the paramour of a troll. She enjoys living with the troll with six heads and does not wish to marry Ash Lad. She'll frequently invent new trials to avoid marrying him."

A German version of the Cinderella tale differs markedly from the Walt Disney classic. Cinderella runs from the ball and tries to escape the prince by hiding in a tree.

"Who lives happily ever after? The least clever third son, Simpleton, and his kicking bride," Liberman said. "This couple is definitely not made for one another, yet we are assured that they will live happily ever after."

Liberman said only a few tales go beyond to the couple's life after marriage. In all cases their married life is one of unmitigated misery. In one Russian tale, the wife begins to deceive her husband immediately after their marriage and plots to kill him.

This is not a genuine folklore tale, Liberman maintains. "By the time the two are married, it's tacitly assumed that they have passed through all hardships and that now they are the ideal couple. They jumped high, they dived deep, they procured the apples of life, they killed the dragon—they did something. On the last page they get their reward by being allowed to live happily ever after."

Liberman admits that he enjoys stressing the evidence for the opposite conclusion in order to be amusing. "But a professional storyteller would be shocked and never admit that the two are unsuited for each other," he said. "There is no humorous approach to wish fulfillment. It's a matter of life and death. Even if the hero is killed, his body will be sprinkled with the water of life and the pieces will be put back together. This is serious stuff.

"I may have a jocular attitude toward the plots, but never toward telling the plots. The moment I'm engrossed in telling the story—however funny it may be—I take the telling quite seriously. It's like acting comedy. You may pretend to take a pratfall on stage, but you pretend seriously."

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Students Gain Skills To Help Hungry World

by Maureen Smith

Phil Westra was in the Peace Corps in Niger, he taught Navaho students in Arizona and New Mexico, he had degrees in education and philosophy. He wanted to make a difference in the world.

Charlotte Eberlein, Leslie Everett, and Phil Westra

He decided to go back to school and earn a graduate degree in agronomy.

"Many people are good talkers, good at pointing out problems," Westra said. "The agronomy department has given me the tools to become what I consider a problem solver."

Although Westra grew up on a dairy farm in Wisconsin, it was his Peace Corps experience that sparked his interest in a career in agriculture. "I really didn't go over with that many skills," he said. "My experience in the Peace Corps taught me how critically important it is to have a good academic background, a good base for being a problem solver. The world community is going to demand people who have the skills."

For Westra and other students like him, the most important skills are those that can help in feeding a hungry world. Among the 70 graduate students in the Department of Agronomy and Plant Genetics on the Twin Cities campus, a sizable percentage are planning careers in international agriculture —foreign students who will return to their countries and American students who want to work in developing countries.

The students know that people are going hungry already and that time is running out on efforts to avert the starvation of millions as the world population grows. But they are optimistic and believe that the work they do can make a difference.

If the students' careers go in the direction they are planning, most of them will be conducting research on better varieties of plants and improved methods of farming in the countries in which they work. And all of them are committed to making the results of their research known to small farmers.

Alfred Moshi, a student from Tanzania, said that 85 to 90 percent of the population in his country is engaged in farming and "research becomes important only when the information can be translated into a method used by the farmers."

Westra and his wife, a pediatric nurse-practitioner, recently went to Ecuador for job interviews and will probably be working there as a team. One of Westra's goals is to be a link between the national agriculture research centers and the small farmers. "Traditionally the small farmers have been neglected. It's a complex issue that has to do with educational level, credit availability, productivity level. If a guy is just producing enough to feed his family, a lot of governments haven't been able to help him."

Left to right: Alfred Moshi, Pascal Gbikpi, Mohammed Boukhari, and Ahmed Zahour

Ahmed Zahour, a student from Morocco, quoted a familiar saying: "Give me a fish and I'll eat for a day. Teach me how to fish and I'll eat for the rest of my life."

Why Minnesota?

Most graduate students major in either agronomy or plant breeding, and both programs are known to be good ones. Each year there are more applicants than can be accepted. "We're hurting for space," said Professor Donald Rasmusson. "Right now 70 students are all we can accommodate. We turn at least three students away for every one we accept.

"We look first at the quality of the student, but we're very much attuned to the needs internationally and the importance of food production. Where we can, we give preference to an American student interested in international agriculture."

The 70 this year includes students from 23 states and 15 foreign students from 8 countries. Those who are seeking careers in international agriculture chose Minnesota for a variety of reasons, and all seem impressed with the program. "I'm receiving the best possible education in my field of interest," said Carlos Loeffler, who is from Argentina.

Like Westra, Leslie Everett came to Minnesota and to international agriculture by way of the Peace Corps. He served in Zaire from 1973 to 1975. But his interest in international agriculture probably began on his family farm in Iowa, where "we had a foreign exchange student almost every year." He chose Minnesota for his Ph.D. program because "it's an excellent department technically."

When Charlotte Eberlein was a graduate student at Oregon State, she decided to come to the Midwest for her Ph.D. work "to broaden my horizons and learn about corn and soybeans. And what am I working on? Wheat—which is what I was working on at Oregon. But it's a good university and a good opportunity to study here."

Some of the foreign students chose Minnesota on the recommendation of their advisers or research directors back home. "I was told that the University of Minnesota was among the good schools, and I was also told that people here are friendly," said Mohammed Boukhari from Saudi Arabia. "That was important to me as a foreign student—a good school and good people."

For students from developing countries, Loeffler said, an important part of the educational experience is seeing how American society works. "Development is very complex, not just scientific. A whole society has to change. I'm not saying we should take all things from here and copy them, but we can identify some aspects of the society that we like and others that we don't."

"I'm learning as much from the people on the streets and in the shops as I am in the department," Zahour said. "Before I came here I thought everybody in America was smoking cigars and shooting people." Loeffler made a similar observation: "More people smoke in Argentina. I was surprised."

Wheat and weeds

Before a student is admitted to the graduate program, an adviser must have an opening and be willing to take the student into a project. "We don't ever take students unless it's clearly specified who will advise them and what their interests will be," said Associate Professor Kent Crookston. Students in plant breeding do research on plant varieties, students in agronomy focus on other aspects of food crop production.

"Except for rice, we're researching all the major food crops of the world—wheat, barley, corn, soybeans—and we're very much concerned with the need for trained people," Rasmusson said.

"Agriculture has profound international implications," Crookston said. "We've been onto this for a long time, and now the general public is becoming aware of it. We hear talk about grain for oil, that sort of thing. Cereal grains are the staff of life in all countries."

Tom Foley

Donald Rasmusson

The students looking toward careers in international agriculture are conducting research in all areas. Moshi is working on corn, or maize, which is "one of the main staple foods at home" in Tanzania. Pascal Gbikpi, a student from France who worked for a time last year in Africa, is working on crop production, primarily soybeans. Loeffler's research is on the protein in wheat.

Zahour is working with Minnesota barley lines that are particularly good for a number of important characteristics—lines that will produce more kernels in each plant, lines with strong straw that resist falling over—and trying to ascertain if these characteristics can contribute to higher yield in Moroccan barleys. The seed will be shipped to Morocco to be tested under conditions there.

Everett is working to improve seed retention in wild rice, a crop that is "fairly crude in terms of species development." Breeding of wild rice began only in 1970. Originally an American Indian food that was harvested from canoes, wild rice was given its name because of its appearance and is "not even related to white rice," Everett said. Because the crop is peculiar to North America, he knows he will be changing crops when he goes abroad, but "the principles of plant breeding are the same."

Tom Foley

Kent Crookston

Breeding better varieties is not the only way to increase food production. Westra's work is in weed control. "Many times we have a level of production that could feed all the people, but 15 to 30 percent of the total production is lost to weeds, disease, and rodents," he said. "A lot of people would say we have to have better hybrids or more fertilizer, but why can't we keep more of that 15 to 30 percent?"

In the real world

The students know that an important part of their work in the developing countries will be to adapt their research findings to local realities. "There are a lot of things to keep in mind," Zahour said. "The farmer might say, 'This is a really good variety—it's the best—but I don't like it. My wife says it sticks to her hands.'"

"What is a weed in the United States may not be a weed somewhere else," Gbikpi said. "In some countries the practice is to use the weeds for feed for animals," Eberlein said. "Weed control is vegetation management. It doesn't have to mean herbicides."

Another consideration in working out a weed control system is that "hoeing the fields is a job for a person, and you don't want somebody to lose a job," Eberlein said.

Gbikpi said his experience in Africa last year "solidified my conviction that before you solve a problem it is necessary to understand the problem." He remembers seeing two types of houses—mud houses used by the local people, cement houses built for visiting engineers. "In the cement houses, the temperature inside the house followed the temperature outside the house. The mud houses were insulated and held their temperature. These houses are the result of centuries of knowledge, centuries of experience."

Westra said he has taken more courses than were required because he knows that "oftentimes overseas you have to be the specialist in a lot of areas, you have to be the one who knows. In the United States it's pretty easy to telephone up an expert and say, 'Hey, I've got this bug problem.'"

Moshi said, too, that in Tanzania "we are still developing our manpower and there isn't as much specialization as there is here. Suppose I become very proficient in plant breeding. It's not enough. One has to know all the aspects that go into corn production so the farmers can make use of it. Because of the shortage of skilled manpower it's best to know more than just one field."

The shortage of trained people in the developing countries presents another dilemma, Rasmusson said. "Some of our students move very quickly into administrative posts, which in a way is unfortunate. We would like them to be part of a research-education team. If we knew they were going into administration, they might be better served in some other graduate program."

Whatever their work, the students who go to the developing world can expect to make a significant contribution. One who went before them was Norman Borlaug, who minored in plant breeding at Minnesota and later won the Nobel Peace Prize for his work in the "green revolution."

"I've been influenced by Dr. Borlaug," Eberlein said. "If we don't do something about the food supply, we can't have a peaceful world. In a little way, we might help the future."

U Reaches Settlement in Sex Discrimination Suit

A sex discrimination suit brought seven years ago by a University chemist was settled in April with the plaintiff's being awarded $100,000. The settlement is thought to have important implications for hiring and promotion practices in higher education.

Under terms of a consent decree, the University awarded $100,000 to Shyamala Rajender, who filed a charge of discrimination after she was not given a regular tenure-track position on the chemistry department faculty.

Rajender, a native of India, holds a Ph.D. from the University of Wyoming. She was hired as a temporary assistant professor in 1969, and was the only woman on the chemistry faculty.

She earlier filed a sex discrimination grievance with an internal ad hoc committee on discrimination. That committee found "probable cause" that the chemistry department had discriminated against her because of her sex, and possibly because of her national origin.

Malcolm Moos, then president of the University, did not accept the determination of the ad hoc committee, saying he could not "fairly conclude" that Rajender had been discriminated against. His action was upheld by the Faculty Senate Judicial Committee.

Rajender filed an individual suit in U.S. District Court in 1973, and, after hiring new counsel in 1975, amended her complaint to a class action suit. As a result, the proposed settlement would affect all female nonstudent employees in academic positions at the University, as well as any female applicants for those jobs.

"After extensive review and deliberation, the members of the Board of Regents have unanimously agreed that the consent decree resolution in this case was in the best interests of the University," said Wenda Moore, chairman of the Board of Regents. "The commitment of the board to affirmative action has never wavered, and the board will continue to support equal opportunity in education and employment as the public has a right to expect."

Besides the monetary award to Rajender, now a patent attorney in San Francisco, the settlement calls for the establishment of an internal University committee of seven to consult with the administration on equal opportunity issues.

The University also agreed, under the terms, to set up more comprehensive internal grievance systems so that any female faculty member who feels that she is or has been discriminated against can have her case heard before taking it to court, according to R. Joel Tierney, University attorney.

The decree provides for the appointment of a "special master," an attorney agreed upon by both sides and the court, to serve on a panel designated to hear claims of discrimination. In the event of a claim, a second panelist would be designated by the academic unit involved, and a third panelist would be designated by the claimant.

The settlement also outlines detailed affirmative action goals and search procedures that the University is to follow. Much of it is a "continuation of what we are already doing," said Tierney, who emphasized that the University "does not admit that it discriminated" against Rajender.

"I am pleased that this case has been resolved in a constructive and mutually acceptable fashion," said President C. Peter Magrath. "Beyond the specifics of the consent decree, this resolution enables the regents and the University to continue and further a strong commitment to affirmative action."

According to a recent article in *Science* magazine, courts traditionally have been reluctant to interfere with faculty hiring and promotion. A trend has recently developed, however, "whereby some lower courts, appellate courts, and court-approved settlements have called for concrete action in cases of proved sex discrimination at colleges and universities, the Minnesota case being the most recent and the most sweeping."

Some academic administrators fear a conflict between the goals of equal opportunity for women and academic excellence, but U.S. District Court Judge Miles Lord called such a perceived conflict "so much hogwash."

Life Was a Cabaret, Arts Had a Heyday in Weimar Republic

by William Hoffman

Oh the shark has pretty teeth dear
And he shows them pearly white.
Just a jackknife has Macheath dear
And he keeps it out of sight.

from the ballad of Mack the Knife in *The Threepenny Opera*

The Weimar Republic was an experiment that failed. Germany's first experience with parliamentary democracy lasted just 14 years. Its demise paved the way for barbarism and catastrophe.

Born in the ashes of the First World War, within the strictures of a harsh treaty and the turmoil of political revolt, the Republic never captured the loyalties of enough people to carry it beyond infancy. Even the government's auspicious location in Weimar, the city of Goethe, helped little in the face of political extremism and economic chaos.

Yet something of a legend has grown up around the Weimar period. Perhaps it is due in part to the successful Broadway run of Bertolt Brecht's *The Threepenny Opera* and to films like *The Blue Angel* starring Marlene Dietrich and, more recently, *Cabaret*. Such was city life in Germany during the Roaring Twenties.

The legend is due to more than just the lively entertainment scene, however. Weimar was a failure in self-government, but it was a grand success in the arts—in painting, drama, dance, music, literature, and architecture. The period was marked by a flowering of the experimental in the arts and the use of art to criticize society.

Most of the major arts organizations and several educational institutions in Minneapolis and St. Paul will participate in a festival celebrating the arts and society of the Weimar period. Entitled "Germany in the Twenties: The Artist as Social Critic," the festival will include art exhibitions, films, opera and orchestra performances, lectures and symposia, and dance programs.

The festival begins September 17 with the opening of a major exhibition at the Minneapolis Institute of Arts, and will last nine months.

Originally the idea of Thomas Plummer, chairman of the Twin Cities campus German department, the program is funded primarily by a $200,000 grant from the National Endowment for the Humanities (NEH).

"This is more than just a University program," Plummer said. "It is a two-community program. We want both St. Paul and Minneapolis to be involved."

In a publication prepared by Plummer and Russell Christensen, program administrator, the Weimar period is described as "perhaps the most exciting experimentation the arts have ever known, a period of arts in the service of society."

The arts played an active role in city life, political and social concerns, city planning and architectural innovation, and German self-determination, Plummer and Christensen said.

Plummer is quick to emphasize that the festival is more than an arts program. It is also an experiment in public education and cultural exploration using the resources of Minneapolis and St. Paul. "The University is a participant, but the program itself is a community affair," Plummer said. "We are working with arts organizations throughout the Twin Cities."

Among other things, Plummer and Christensen expect the festival to give its audiences a better understanding of "the depth and breadth of social problems that have led to the rise of totalitarianism."

Artists of the period, scholars from Germany, and representatives of the German governments are expected to visit the Twin Cities during the festival. And on the scholarship side, two books, several catalogs, and a magazine will be published.

One of the biggest events will be the Metropolitan Opera Company's production of *The Rise and Fall of the City of Mahagonny*, set for May 15, 1981, in Northrop Auditorium. Brecht's "epic opera" with music by Kurt Weill, regarded as the culmination of their joint artistry, is a piercing indictment of a materialistic society.

The exhibition launching the program will feature the "new objectivity," a major art movement in Germany during the twenties. Following on the heels of expressionism, which revealed violent individual emotion and idealism, the new objectivity was realistic, with strong social commentary and criticism.

Two Weimar artists of the later twenties, George Grosz and John Heartfield, will be represented in a University Gallery exhibition during October 1980. Grosz is perhaps the most noted artist of the period, satirizing unmercifully the military, the middle class, and the cafe set in a mixture of collage and watercolor. Heartfield was a master of the photomontage, using it to portray the Nazis as hoodlums and butchers.

Woman With Children. **A lithograph by Käthe Kollwitz, 1924. Perhaps more than any other artist of her time, Kollwitz conveyed an urgent political appeal.**

"This period in German art is exciting," Plummer said. "It breaks in a vigorous, challenging way. These are powerful and abrasive graphics, highly demanding of the viewer. They don't allow for neutrality."

Early in the decade, Käthe Kollwitz, perhaps better than any other artist, conveyed the plight of the downtrodden. In lithographs and woodcuts, she portrayed the suffering of widows, survivors of the war, impoverished workers, and homeless children. An exhibition of Kollwitz's work will be held at the College of St. Catherine in October.

The music of Austrian composer Arnold Schönberg, inventor of the 12-tone system, will be highlighted in the program. The St. Paul Chamber Orchestra, after opening the festival with Schönberg's interpretation of Strauss waltzes at the Minneapolis Institute of Arts September 17, will give a Schönberg concert November 5 at Walker Art Center.

Other musical events scheduled are three operas by Ernst Krenek to be performed at the University, a Minnesota Orchestra concert featuring *Mathis der Maler* by Paul Hindemith, and Richard Strauss's *Ariadne auf Naxos*, to be presented by the Minnesota Opera Company in the spring of 1981.

There will also be symposia on art, literature, and politics. Walker Art Center will show a series of films portraying the working class. And there may be dance programs.

Odön von Horváth's *Tales From the Vienna Woods*, a farce portraying the gradual annihilation of a humane folk tradition by the Nazis, is the program's main theater event, to be performed in the winter of 1981 by the University Theatre.

The Minnesota Museum of Art in St. Paul will host an exhibition on city planning. Weimar Germany was the home of the Bauhaus, where many of the major figures of modern art and architecture taught—Walter Gropius, Marcel Breuer, Oskar Schlemmer, and Mies van der Rohe.

The Bauhaus idea of city planning was not the most significant model of the time, according to Plummer. "The Bauhaus tended to be elitist and utopian, showing greater interest in expensive chairs and couches than in the development of urban design and workers' housing," he said.

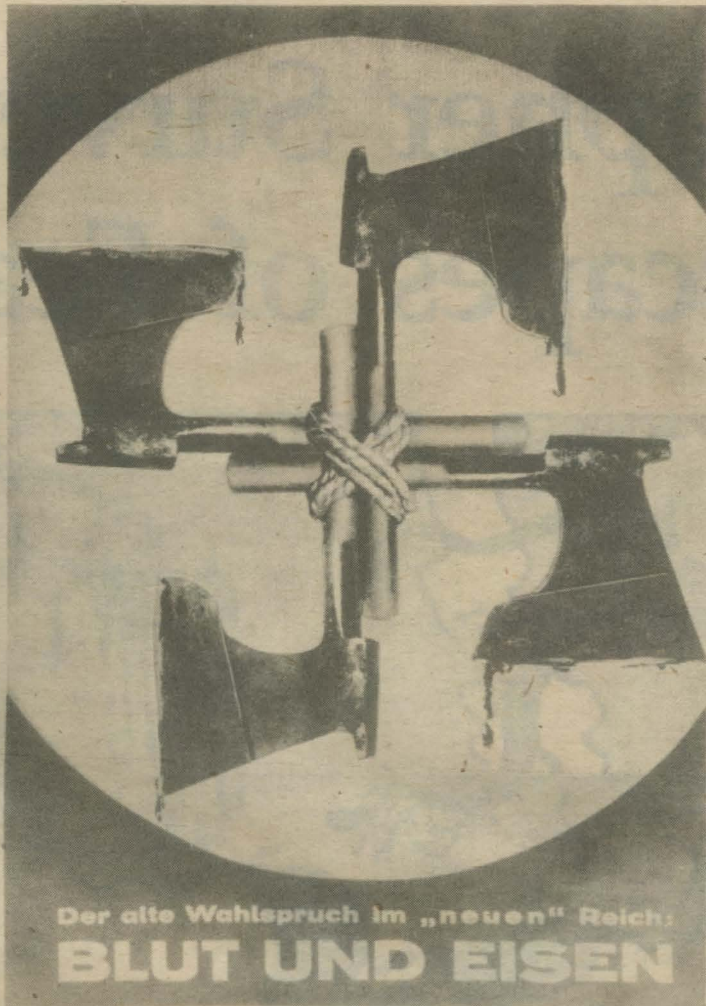
Was the artist an effective social critic in the Weimar Republic? Plummer concedes that there are problems in trying to link artistic expression to social and political change. For example, the Beer Hall Putsch—an attempt by Hitler and the Nazis to overthrow the government in 1923—was of great importance historically, but it is not represented in the arts, he said.

What can be said is that "art tended to influence attitudes rather than events" and that the most important art stemmed from the political left, Plummer said. "A feeling of necrophobia shows itself in the artistic subconscious, a feeling that the lifeblood was being drawn out of the nation. Art was fascinated with the machine, but there was fear of it, too.

"So on the one hand there were more and more expressions of fear and anxiety in art, a sense of despair. But on the other there was also a feeling of vitality, a real chance to live it up for a change. The situation was polarized," he said.

Weimar Germany "was a terribly happy period in many ways," Christensen said. "Berlin was a wonderful place for entertainment and the arts to flourish. The official censor had abdicated with the kaiser in 1918, so the emotion necessary to produce great art was finally unleashed."

Weimar Art



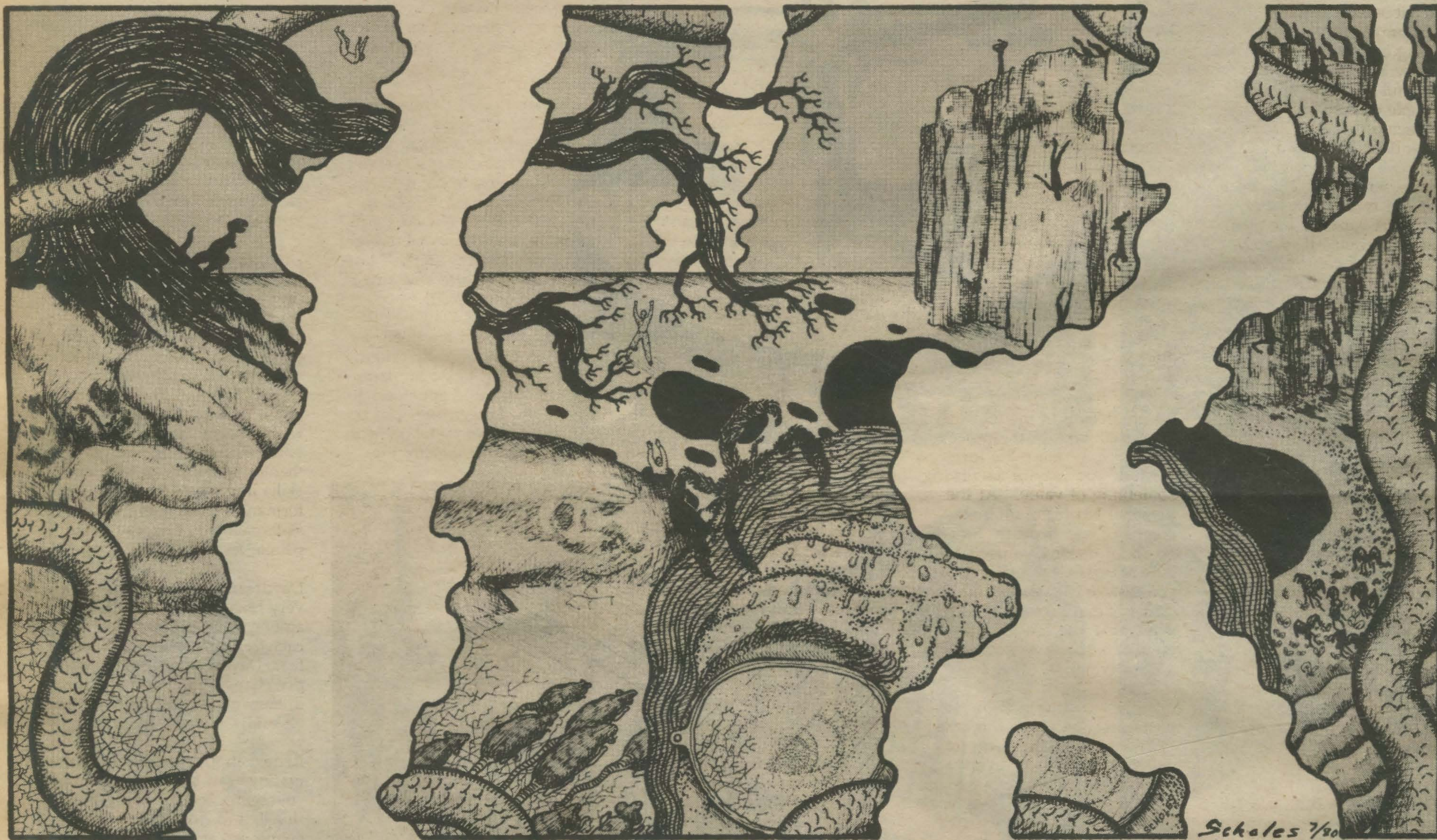
The Pillars of Society (far left). A 1926 George Grosz caricature of Weimar professionals truckling to the military and the Nazis.

Sonja (left). A detail from a portrait by Christian Schad, 1928. The cafe was a symbol of life in the Weimar Republic. Note the Camel cigarettes on the table.

Blood and Iron: the old slogan in the "new" reich (above right). A photomontage by John Heartfield from the cover of the *Workers' Illustrated Newspaper,* 1934.

The Synagogue (lower right). A painting by Max Beckmann, 1919. A leader of the "new objectivity" movement, Beckmann never lost sight of the human element in art.

Geographer Surveys Landscapes of Fear



or, the Myth of the Tranquil Countryside

by Paul Dienhart

Your mind clicks into the slow, golden fade of a movie flashback and you imagine a past when the pace was slow and people lived unafraid in the tranquil countryside.

Forget it.

In his groundbreaking book *Landscapes of Fear*, Twin Cities campus geography professor Yi-Fu Tuan surveys fears throughout the ages. He lets the reader decide, but the implication of the book is that life is less fearful today than in past centuries. "It's a great generalization, but I believe it is true," Tuan said in an interview.

Tuan himself has little desire to have lived in the past. "I can imagine delightful situations," he said, "but I would have to have a special social status. I'd have to be at least a prince. Just being an ordinary person, I think I'd prefer to live now than in any other period."

Fear of disease and early death certainly isn't as great today as it used to be, Tuan points out in his book. As late as 1849, with the United States helpless against a cholera epidemic, President Zachary Taylor called on all citizens to participate in a day of fasting, prayer, and humiliation. It was in the tradition of the cholera-struck London of 1665, when people burned old shoes and fired guns from their windows to drive away the "bad air" settling around their houses.

Tuan wonders how strong family ties could have been with death always ready to interrupt. "In 18th-century France, a peasant couple who wed in their late twenties could reasonably look forward to a conjugal bond of only five to ten years before death would remove one partner. Divorce was hardly necessary when death so often performed the same service," he writes.

Today, the castles that dot the European countryside are romantic structures. In actuality, they were filthy refuges from marauding bandits. The tranquility of the countryside is another myth Tuan dispels.

The cities were hardly more secure in past centuries. Fire, for example, could rage uncontrolled. Even if you escaped with your life, you had no insurance policy to help retrieve your lifework. Terror of fire led to strange superstitions. In 1282 a whale stranded on a beach in China was linked to a nearby fire and a temple was built to appease the angry river god.

Humans cannot bear to live in a permanent state of anxiety. Before scientific explanation and control of nature, people turned to magic and ritual. Human sacrifice was very popular, even in advanced empires like the ancient Chinese and the Aztec. Wars were fought chiefly to obtain victims for sacrifice. To assure fertility, Chinese farmers of 1000 B.C. buried pieces of human corpses in their fields, while the Aztecs had women dance for the goddesses of the earth, a dance that ended when the women's heads were lopped off.

On a less cosmic level, wild animals posed a danger to people and their crops. It was once not uncommon to label an animal a criminal. "Offending wolves and caterpillars were tried in courts, given sentences, and executed," Tuan writes. "One of the earliest recorded animal trials took place in 824, when moles were prosecuted in the valley of Aosta; one of the most recent was in 1906 when a dog drew a sentence of death in Switzerland."

If there's still a fear connected with nature, it's "the paradoxical fear that plants and animals, even rivers and lakes, may die through human

abuse," Tuan writes. "The fragility of nature, not its power, now makes us almost constantly anxious."

The problem of comparing fears of yesteryear with those of today is that our ancestors may have simply gotten used to things we find horrifying, Tuan said. Fear is, after all, a state of mind. In the 15th century, French families picnicked under gibbets where crows feasted on mutilated bodies swinging on iron chains. "That would be a very unpleasant and fearful thing for me, but for people of that time it may have been an accepted part of their world," Tuan said.

If people tend to regard this age as the most fearful and long for the quiet of the past, it may be because they are more aware of the uncertainties in their own lives than those of people who lived long ago, Tuan said.

Another reason may be what Tuan calls chronocentrism—the belief that one's own age must cope with the most unsettling change while in other ages there were long periods of drowsy quietude. Yet a retiring and conservative person living between 1800 and 1860 would have been subjected to revolutionary changes like the railroad, steamships, the telegraph, gas lighting, and factory-made clothing, Tuan points out in his book.

A lack of change is one characteristic of societies with very little fear. The Mbuti Pygmies of the Congo rain forest are an example Tuan provides in his book.

The Pygmies live comfortably under the protecting canopy of the forest. Game and edible vegetation are plentiful. Men and women gather food together and have plenty of free time to chat, play with the children, sing and dance. They have great confidence in their limited forest world. "An idyllic moment in their lives is when they make love in the forest under moonlight, or simply dance alone with gestures that suggest the dancer is courting the forest," Tuan writes.

The Mbutis' "fearless" world has very close boundaries. "One is space," Tuan said. "You don't move away from your carefully defined area, you even discourage curiosity about what is outside. Another boundary is a narrow time dimension. You have little or no interest in the past or future. So one can lead a fairly fearless type of life under these severe constraints."

Tuan said he believes that all boundaries—house, city, religion, social mores—are, to some extent, attempts to impose order on chaos. In that respect, they are a reaction to fear.

The circle, the perfect boundary, is sacred to the Navaho Indians, Tuan notes. "Closed circles are satisfyingly complete; and if they are small and therefore subject to control they are good," he writes. "The healing hoop drawn on the ground is such a circle. But the Navaho is also afraid of the closed circle. Evil may be trapped in it, and once trapped it cannot get out, nor can good enter. For this reason the Navaho favors the open circle."

In a way, the closed circle represents one of Tuan's few personal fears. "I'm afraid of a false sense of security," he said. "The fearless societies I described would be very uncomfortable for me. It would be like building a wall around an ideal place and risking the discovery of, who knows, something horrible."

It's an anxiety of modern man, Tuan said, that in the process of making a secure life for yourself you may be sacrificing something of value. "At the personal level, the ultimate source of fear is death. So you go about making yourself secure against all threats. Then you suddenly wake up and discover that you are somewhat dead, that you are to all intents and purposes not leading a life anymore."

Tuan is watchful of this. That's one reason he wrote the book. "I've always had an interest, one that's shared by every child, about the meaning of life —what's it all about? I never quite outgrew that. I thought one way of going about it was to start with something very down to earth. I can't think of any subject more down to earth than geography. I try to start from the soil, the ground, the climate and rise up to the more elusive questions."

Tuan has also written a book called *Topophilia*—love of place. *Landscapes of Fear* is the companion volume on fear of place. Tuan uses a wide range of sources, from the Old Testament to T. S. Eliot, from Chinese cities of the Han dynasty to the London of Charles Dickens. But Tuan is the first to admit that he couldn't include all fears. "It's very much a sketch and an essay," he said.

The hardcover edition of *Landscapes of Fear* is published by Pantheon Books of New York. The University of Minnesota Press will publish a paperback edition.

What a Day for a Daydream

by Jeanne Hanson

We all do it. We do it to entertain ourselves, to work on our worries, to feel sexually aroused, to cheer ourselves on, to fill a spare minute or two while we're waiting at a stoplight.

In fact, we spend 30 to 40 percent of our waking hours daydreaming, according to Eric Klinger, professor of psychology on the Morris and Twin Cities campuses. Klinger has studied daydreams extensively, mostly by "thought sampling": those whose thoughts are being sampled carry bleepers and write down what they're thinking when the bleeper bleeps.

"We used to be told that daydreaming was neurotic," Klinger said. "That view was damaging and made people anxious about their fantasies. Actually, it would be abnormal and unhealthy not to daydream."

About a fifth of a normal person's daydreams are somewhat weird anyway, especially those that contain dreamlike imagery, Klinger and other researchers have found in their studies.

Daydreams can be important tools for solving problems, Klinger said. In a daydream, problems can be mulled over and possible solutions can be rehearsed. Likewise, problems from the past can be rehashed and better solutions tried out.

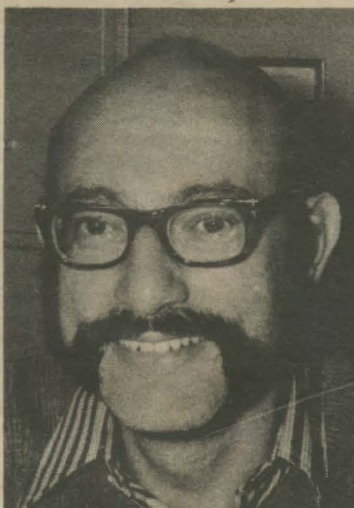
Since daydreaming can lead to creative insights and prevent boredom at the same time, Klinger thinks daydreaming may even be a productive tool to use on the job.

Daydreaming may also be good for the brain physiologically, although evidence is not yet clear, Klinger said. As we periodically switch away from directed thinking, daydreams both relax and stimulate the brain. They are associated with alpha brain waves, a lower heart rate, and little eye movement.

"There's some evidence that daydreaming peaks in 100-minute cycles, the way nighttime dreams do," Klinger said. Rapid eye movement (REM) periods at night last only a few minutes at first, but the longer you sleep, the longer and more vivid they become. Daydreaming may or may not be like REM sleep in this respect, he said.

Of course not all daydreams are like dreams or are full-blown fantasies, Klinger said. Often the mind is just wandering. According to his studies, the average length for a daydream is 5 to 14 seconds, with many shorter scraps of thought and some longer "stories" lasting about a minute and a half sprinkled throughout.

The shorter ones are fleeting thoughts that typically range from "I've got to do my laundry" to "I should get closer to God." The longer ones can be realistic or quite fantastic, with the daydreamer usually the



Eric Klinger

"star." About two thirds of our daydreams have something to do with the immediate environment, Klinger said.

The visual and auditory elements in daydreams vary from person to person, he said. Most daydreams are predominantly visual. Some people daydream without imagined sound, and others imagine the "characters" talking, with or without a "narrator." Daydreams with smells and tastes are less common, he said.

There are surprisingly few differences in daydreams among people of different ages and sexes, he said. Klinger's studies with college students and other researchers' studies with adults up to age 90 show amazingly similar results. The older people daydreamed only slightly more about the past, and less about sex and heroic exploits. Men's and women's daydreams were quite similar except for certain obvious differences—which sex was the subject of sexual fantasies, for example. The samples were small, though, and content was not specifically studied this way, Klinger said.

Studies of daydreams people had while taking exams showed that anxiety seems to be the result, not the cause, of poor performance on tests, Klinger said. The anxious daydreams of poorly prepared students kept returning to their lack of preparation and its effects. "Maybe just allaying test anxiety isn't enough," he said.

Distracted basketball players had similar problems. When the team was in trouble, players tended to reflect on how well they were or weren't doing or to exhort themselves to do better. If they were trained to avoid these distractions, slumps might be shorter, Klinger said. Evidence from other studies indicates that mental practicing of physical skills improves free-throw performance. Rehearsing social skills mentally can also make people less shy, Klinger said.

Daydreaming actually has very few pitfalls, he said, but among them is that rehearsing catastrophes can strengthen fear. Daydreamers might practice changing the end of daydreams about difficult situations, he said.

Rehearsing impossible happy endings can sometimes be discouraging, too, he said, though this is rare. Magical imaginary solutions can prevent practical ones. And daydreams about personal problems solved by transformations of other people can have the same effect.

But most daydreams are good for you, Klinger said. The idle mind is not necessarily the devil's workshop.

'This Is Eric Sevareid in Paris'

Bruce Borich, *Minnesota Daily*

Eric Sevareid

by William Hoffman

One day, while vacationing in Paris in 1939, Mitchell Charnley got a phone call from a friend. They agreed to meet at midnight.

That night, Charnley spent several hours in a small cafe chatting with Eric Sevareid, then city editor for the Paris edition of the *New York Herald-Tribune* and a reporter for United Press.

Charnley learned that Sevareid had just been offered a job at CBS by a fellow named Murrow, CBS's London correspondent. Murrow wanted Sevareid to be the radio network's Paris correspondent.

Sevareid was in need of expert advice, so it was natural for him to turn to his friend Charnley, a journalism professor from Sevareid's alma mater, the University of Minnesota.

According to Charnley, Sevareid was in doubt about his qualifications. His training and experience had been solely in print journalism—at the *Minnesota Daily* and the *Minneapolis Journal* before the *Herald-Tribune*. Moreover, he was convinced he was a poor speaker. What should he do?

Charnley, now retired, recalled that he fired straightaway: "Grab it!" But Sevareid was still unsure.

Several weeks later, while listening to the radio back in the States, Charnley heard a familiar voice: "This is Eric Sevareid in Paris."

Sevareid went on to become one of the outstanding broadcast journalists of his generation and a figure famous to millions.

After serving as a war correspondent, Sevareid was variously chief Washington correspondent, European correspondent, and national correspondent and commentator before retiring in 1977. His stature is such that CBS has yet to replace him on its evening news program, where Sevareid gave a daily commentary for 13 years.

Sevareid returned to his alma mater in April to deliver the Guy Stanton Ford lecture, in memory of the former University president. At the same time, the School of Journalism and Mass Communication dedicated its library to Sevareid, a 1935 University graduate who majored in political science and minored in journalism.

Messengers and monsters

In the Ford lecture, entitled "The Media: Message, Mediator, Monster," Sevareid said the mass media ought to do more to show "good news" instead of focusing on the negative, the failures and the dangers.

Only in dictatorships do daily broadcasts and newspapers stick mainly to good news, Sevareid said. "But I do agree more could be done to publish and show good news, much of which really *is* news.

"We get bad economic news every day, and hardly one American in a thousand knows that in the last 35 years the increase in material goods and services worldwide has been greater than the whole of the increase in all previous recorded economic history," Sevareid said.

And as domestic unemployment figures "get anxious attention" from the media, millions are added annually to the total with jobs, he said.

While working for CBS News, Sevareid said he once urged that an "apocalyptic" series on pollution be balanced with reports of successful clean-up efforts. "People need the carrot as well as the stick," he said.

Sevareid also criticized "teams of news personalities who seem to feel they must act the news. Even if they could act, the approach would be wrong, and most of them are such dreadful actors."

Television and the press do have considerable influence in shaping attitudes, but they do not have the kind of direct

power to produce desired results that the government possesses, Sevareid said.

Television "mostly just reflects existing tastes and standards," he said. "TV is much too sensitive in its box office nerve to do much innovating."

Nor has television produced a society of "zombies," as some critics predicted it would, Sevareid said. He cited huge increases in the college population, adult education courses, travel abroad, athletics and spectator sports, and outdoor activity in general as evidence to the contrary.

"Television is much too sensitive in its box office nerve to do much innovating."

"If you want to see real mass mindedness or conformity, go to the totalitarian or the more primitive societies," Sevareid said.

American journalism bears a heavy burden of responsibility to report the news fairly and accurately, Sevareid said, but its connecton with the public is not a one-way street.

"We speak continually of the people's right to know," he said. "What they really have is the right to find out."

But people can only find out if civil and constitutional liberties, particularly those provided for in the First Amendment, are preserved, he said. "There really is a firstness to the First Amendment.

"I would go so far as to say that the world itself would very probably lose its life if America lost its liberties because, if both superpowers were secretive, closed societies, then surely world tensions would become unbearably explosive."

Ways with words

According to Sevareid, journalism is neither an art nor exactly a profession or trade. He noted that journalist Walter Lippmann once called news work "the refuge of the vaguely talented."

Nonetheless, Sevareid confessed to liking journalists "as a breed." "The best among them believe—must believe—that they are in the truth business," he said.

Journalism is the only business with a constitutional guarantee of its right to exist, Sevareid said. It is a self-correcting institution and process that should be "a little bit irresponsible rather than too prudent, too timorous."

Objectivity and accuracy in news reporting and fairness in news commentary are still proper goals for the professional journalist, according to Sevareid, who admitted that he has been "a bit appalled" by the number of errors in stories written about himself. Haste often is the culprit, he said.

Haste and urgency in broadcast journalism have led to a decline in the way the English language is used, Sevareid said. "Perhaps there is some connection between this and the fact that too many young men and women emerge from schools of communication with no personal means of communicating because their use of the language is to English about what finger painting is to art."

Besides taking care of the language, journalists need to be better versed in liberal arts. He quoted American poet Edna St. Vincent Millay: "Upon this gifted age, in its dark hour, rains from the sky a meteoric shower of facts . . . they lie unquestioned, uncombined; Wisdom enough to leach us of our ill is daily spun, but there exists no loom to weave it into a fabric."

"It is best for our social health that the press be at least a little bit irresponsible rather than too prudent, too timorous."

Journalism tries to weave the fabric—to provide understanding—but it must do better, Sevareid said. "It will not do better unless the new generation coming into the field is even better educated than the old one, and I mean liberal education in the broadest, deepest sense of the word," he said.

"I've never regretted being in this business," Sevareid told a gathering of students. People seek security, identity, and stimulation in life and "journalism is a marvelous way to spend your life because you've got all three."

Glowing Memories

You do me honor in having me here and under these auspices. I feel gratified, and appropriately old. Remote memory, they tell us, becomes more vivid with age than current memory. More vivid, but not more accurate, yet I think my memories of Guy Stanton Ford are accurate. I visited him in his post-Minnesota period in an apartment in Washington, a city where I have spent too much of my life, and found him unchanged from his days on this campus—his mind still sharp, his nature still pleasant and patient, the scholar as we idealized the scholar. Dr. Ford was a Victorian in a good sense, that is, he was embarrassed in the presence of the base—unlike so many of this generation who appear to be embarrassed in the presence of the noble. He was too sophisticated to think that history was made by heroes, but he recognized the heroic when he saw it and he would not have understood today's anti-hero who is, I suspect, blessedly beginning to vanish.

I don't intend to embarrass or bore you with an aging journalist's reminiscences of student days in the thirties when we feverishly, fervently wrote and edited the Daily *over there in our embattled fortress, Pillsbury Hall. I would be apt to laugh and cry at the same time. It was all wonderful and a little mad; there was a fine, careless rapture to it. That our work was lasting is doubtful; but the intimacies then fashioned have lasted. Cherished friends of those days in that place are still my cherished friends, those who survive, and that is enough to endow my University memories with a glow of gratitude.*

Excerpt from the Guy Stanton Ford Memorial Lecture given by Eric Sevareid in April 1980

Lichens Likened to First Alert

by Mark E. Canney

Anyone who has hiked through Minnesota's north woods or driven along the shore of Lake Superior has seen them spattered on rocks and trees like splashes of green, yellow, and orange paint. Some types—"old man's beard" is one—hang from trees like a miniature version of Spanish moss.

Found primarily in the upper third of the state, lichens are usually thought of as food for deer, caribou, snails, and slugs. Birds sometimes use them as material for their nests. A University researcher has been studying the plants for quite a different purpose.

Clifford Wetmore, associate professor of botany on the Twin Cities campus, has traveled thousands of miles in the state collecting and cataloging the plants. Besides their usefulness as food and lodging for animals, lichens are natural monitors of air pollution.

"Lichens act as a first alert of declining air quality," Wetmore said.

Certain types of lichens will die out in an area that is exposed to even low concentrations of such air pollutants as sulfur dioxide and nitrogen oxides, Wetmore said. Acid rain may also affect the plant.

Lichens are actually two different organisms—algae and fungi—living together in a single structure. The algae and the fungi depend on one another for life, and it is this symbiotic relationship that makes lichens good pollution monitors, Wetmore said.

"Any change in air conditions will upset the delicate balance of the partners and result in the death of the organism," he said.

When Wetmore returns to an area he has already studied and finds that some of the lichens are gone, sophisticated pollution monitors such as gas analyzers are brought in for further testing.

But lichens act as more than a first alert, Wetmore said. They can also provide a graduated view of pollution problems. Some types of lichens are more sensitive to air pollution than others, and if several kinds are found in one area, their relative survival rates illustrate the severity of the pollution.

Since lichens are sensitive only to pollution sources that are airborne, they can be used to determine the sources of other forms of pollution, as Wetmore saw recently near Babbitt, Minnesota.

"The vascular plants near an operating iron mine in the Babbitt area were showing signs of damage," he said. "But because the lichens were lush, we ruled out air pollution and found the source of the problem to be ground pollution."

The key to Wetmore's work is to establish baselines: he must learn the makeup of the lichen population in times of little or no air pollution before he can make judgments about subsequent pollution problems.

At the turn of the century, pioneer lichenologist Bruce Fink did extensive surveys of Minnesota lichen populations, and Wetmore relies on much of this work for his studies. But as logging and other forms of "progress" alter the lichen population, Wetmore must continually monitor the changes in lichen growth in the state.

Recently he did extensive collecting and classifying of the lichens in the Voyageurs National Park. "If there is to be copper-nickel mining nearby, the lichen population will monitor its effect on the air quality," he said.

Wetmore is also concerned about the effect of acid rain in northern Minnesota.

"The organism goes into a dormant state in times of little rainfall," he said. "When it does rain, the plant begins photosynthesis and other metabolic processes, making it more vulnerable to pollution."

Wetmore thinks acidic rain could affect the lichen at that most vulnerable time. To verify his theory, he plans to survey Isle Royale in Lake Superior next summer. He did population studies of lichens on the island in 1957, which will give him good baseline information from which to work.

"Isle Royale gets very little air pollution but is known to receive large amounts of acid rain," he said. "If there is any change in the lichen population since I last studied the area, it could be the result of the acid rain."

Wetmore's findings could be of special significance when the Atikoken power plant now under construction in Ontario is completed. The plant has come under fire from environmentalists who believe it will drastically increase the amount of acid rain in the Boundary Waters Canoe Area and Voyageurs National Park.

Crowded U Hospitals Look to Renewal Project

by Elizabeth Petrangelo

When Robert Goltz entered medical school here in 1941, most of the Mayo complex was already 20 years old. The majority of the patients who came to University Hospitals were considered indigent and were referred through county welfare programs.

Nearly 40 years later, the patient population has changed dramatically and the load has swelled to 580 on an average day. Enormous changes have been made in medical technology, and University Hospitals has earned a national reputation for dealing with the most complicated, difficult cases.

But in one area, things have changed little: the core clinical facilities for treating patients and educating thousands of students in the health sciences remain largely the same as they were the day Goltz, now head of the dermatology department, entered medical school. And the complex of buildings is bursting at the seams.

Patients' rooms are too small to handle modern equipment, storage space is critically short, power supplies are inadequate for modern equipment, privacy is almost nonexistent, and teaching must be done in the hallways. There is inadequate air conditioning and no place for the medical staff to meet, chart, and dictate, and there are few treatment and examination rooms.

"Think of the changes that have occurred in medicine. We are being asked to do a 1980 job in a 1920 facility," Goltz said.

Despite the space problems, morale on the medical and hospital staff remains high, largely because of the work being done at University Hospitals, Goltz said. "It's an exciting place. People know it's on the cutting edge, and they enjoy being a part of it."

And the patients still come, despite discomfort caused by their surroundings. "The patients come here because they know they are getting top-flight medical care, and they're willing to put up with the problems," he said.

But the overcrowding, storage, and traffic flow problems are severe, and those who work there must "fight the facility" to offer quality medical care and instruction, said Robert Dickler, senior associate director of the hospitals.

Hospital services are spread out through several buildings, giving the illusion of spaciousness, Dickler said. In fact, he said, "we have about 50 to 60 percent of the space per bed that is the industry standard for an institution this size."

Dickler is heading up a formidable project to rebuild and remodel much of University Hospitals. The estimated cost of the project is $225 million, a figure that may change as adjustments are made in the building plan and as the inflation rate fluctuates. The construction would be financed through the sale of state general obligation bonds, which would be repaid through hospital revenue. If everything goes as planned, construction will begin in July 1981.

Under the plan, Powell Hall and the aprtment building next to it would be demolished and replaced by a new nine- or ten-story building. The new structure would contain beds for acute adult and pediatric care, operating rooms and recovery areas, labor and delivery rooms, and space for diagnostic and therapeutic radiology.

"This is not an expansion in the number of beds or the number of patients we serve," Dickler said. "It is meant to upgrade the facilities to accommodate the patients we now serve and those we expect to serve into the 21st century."

In the meantime, work goes on under less than ideal circumstances. Some of the biggest problems faced by the medical staff are the result of the fact that University Hospitals cares for many seriously ill patients.

"We have many very ill patients even in our routine medical-surgical areas, people that need close monitoring and observation," said Barbara Tebbitt, director of nursing services. "They may have three IV's instead of one, for instance, and require constant observation.

"The kinds of procedures we are doing are different from the kinds of procedures typically done in community hospitals," she said. "When new people join the nursing staff, many of them look around our medical-surgical areas and say, 'Where I came from, these patients would be in intensive care.' "

A patient who is referred to University Hospitals for a hysterectomy, for instance, would not be the same sort of patient served by a community hospital, Dickler said. "It's still a hysterectomy, but it may be complicated by cancer or sepsis and need a much higher level of capability," he said.

Joan Halgren

The lack of conference rooms and private areas places a strain on the teaching function, Goltz said. "There are some 5,000 students here in the health sciences, and many are dependent on this facility," he said. Without places for discussion, teachers and students must congregate in already noisy hallways. "Most of our teaching is done standing in the halls with food carts running over our toes."

On the pediatric infant ward, there is no space for procedures such as blood-drawing to be done, Tebbitt said. There are six to eight babies in each room and no privacy for parents. The power supply is inadequate for modern equipment: sometimes babies must be shifted around if several pieces of equipment are needed in one room.

There is no storage space for supplies, and linens are stacked outside doorways in the hall. "We try to keep it as clear as we can, but it's almost a logistical impossibility," Dickler said. Further, there is no place for the parents to go to be alone, and no space for parents to spend time with the infants. "When new facilities have been built elsewhere, it's been found necessary to provide space for parents to stay overnight because of the trauma of separation for the baby," Dickler said. "That's almost impossible here."

Throughout the patient care areas, there are no places for doctors or nurses to talk privately with patients' families. "There is very little room for someone to go and grieve or work things through alone," Tebbitt said.

In the 16-bed surgical intensive care unit, the waiting room holds only 10 people and affords no privacy. "There is no place to go and cry," Tebbitt said. "There is nothing worse than being told in the middle of a room that someone has just died and to have to go through all of the things you go through in front of other people. It's dehumanizing."

Many of the space and traffic problems in the patient-care areas are the result of the structure's age, Dickler said. "The technology we are using today had not been developed at the time the facility was built," he said. "Partly it's because it was developed with the view that a public hospital doesn't need those amenities. The thought was that indigent patients did not need waiting room space, dining areas, and private places for relatives."

When patients are discharged, they are asked to comment on their stay. Their comments on the physical surroundings are often negative. Most often, they cite lack of privacy, physical problems like drafty windows and no air conditioning, and a feeling that the building is not as clean as it should be.

"The place gets dirty faster because of the intense use of space," Dickler said. "Dozens of people are coming in and out of every room, using every nook and cranny."

Patient comments on the care they receive, on the other hand, are routinely positive, Tebbitt said. "For the number of people who come into contact with a patient in this teaching hospital, there is still a real sense of caring," she said.

"For the most part, when people come here they are very ill. But because they are so ill, we find a deeper sense of caring on the nursing staff. On one station, for instance, the nurses are assigned to a baby and stay with that baby for six weeks or the length of the stay. They control how many times that baby is disturbed and coordinate its total care."

Patients come from all over the country—and sometimes from other countries—for treatment. "We have a worldwide reputation for being willing to deal with the most complicated and difficult cases. What is most important to remember is the aggregation of expertise here not typically found at other institutions," Dickler said.

"Here we have a full-time staff with full-time researchers, with students and with an esprit de corps that I don't think you'll find anyplace else," he said. "For people who are really sick, I don't think you can get better health care than you can at University Hospitals. We fight the facility to do it, but we do it, and well."

University Hospitals is a place of "superb expertise" in many areas, Goltz said, citing work on transplantation, the cancer control program, hypertension studies, and the clinical research center as just a few examples. Pioneering work in the transplant field, for instance, "provides a yeasty environment for other disciplines like immunology, genetics, and other related areas," he said.

Tebbitt feels that despite environmental problems, quality remains high. "People feel pretty good about themselves and what they're doing here, and I think if you feel that way, you can withstand a lot."

Learning-Disabled Students Have Tougher Row To Hoe

by Maureen Smith

Karen Clague didn't know what was wrong. She was intelligent, she was studying hard, but her grades weren't reflecting her mastery of the material. "I was doing so B-plus when I knew I was A."

Clague, a student in family social science on the Twin Cities campus, knows now that she is learning disabled. Her brain plays tricks on her when she is reading, writing, spelling, taking tests. But because she is bright and articulate, she was getting by. She knew something was wrong, but she didn't know what.

"It was so frustrating. I had a professor who told me, 'You know this material better than any other student in the class, but it isn't showing on your tests.' I thought I had test phobia, which I don't. I saw a counselor and we looked at family problems and everything else. Since I'm planning to be a counselor, it was a wonderful experience, but we weren't finding the problem."

A typing class a year ago gave Clague a clue. "I typed things as I saw them, and I kept getting letters and numbers mixed up." Clague's suspicion that she might have a learning disability was later confirmed by diagnostic testing at the Reading and Study Skills Center in Eddy Hall.

Every learning-disabled student's combination of deficits is unique. The best known of the disabilities is dyslexia, a disturbance of the ability to read, but this, too, is a broad term. Clague described her own disabilities:

"I have problems with figure-ground discrimination. What that means is that I don't discriminate foreground from background. I can't always separate out a machine in the background from the voice I want to hear. When I'm reading, I will draw letters, syllables, or even words from another line into the line I'm reading.

"As far as the dyslexia goes, I may see a blank space where there should be a word or a number. Numbers are the worst. As a rule, I do not see minus signs. As the quarter goes on I get weary and make more and more of these mistakes.

"Sometimes I will get confused as to what's the main point of a paragraph and what are the more minor points. It's not a reflection of my intelligence. It's just that making all those letters into all those words, and making all those words into sentences, and then trying to figure out what the main point is—it's incredibly hard.

"As a child I was a wonderful speller, but now I get letters mixed up. This morning I was trying to spell *demand*, and I spelled it *deamend*. I know how to spell *demand*, but my hand wasn't writing it.

"I had some mild forms of dyslexia but no writing problems as a child. Nobody told me I was dyslexic. They told my parents. I was categorized as a gifted child, so the problems were overlooked."

Another learning-disabled student, Tom Potter, became aware of his problem when he was a freshman in electrical engineering. "I was misreading tests. I was giving stupid answers. The first thing you think if you're a freshman is that you probably can't cut it, especially if you're in something like engineering.

"I went to the Reading and Study Skills Center, and I seemed to be intelligent enough and my study habits were good." Further testing showed that Potter was dyslexic.

"When I read, I'll omit words," Potter said. "Or I'll be stringing sentences together and not be aware of it." Not all of his problems are with reading, he said. "When I'm listening to a lecture I may drift off 20 times a minute and miss what the person is saying. It's not necessarily something you can control."

Clague and Potter know that people who don't have learning disabilities have experienced some of the same phenomena. "It may happen to you, but what you have to ask yourself is how often," Clague said. "Is it happening often enough to impair your functioning?"

The hidden disability

Learning disabilities are covered by federal regulations on access for the handicapped, which require faculty members to make reasonable "academic adjustments" for handicapped students. For example, a student might be given more time to take a test, or the test might be administered orally.

But because a learning disability is invisible—it has been called "the hidden disability" —students sometimes have difficulty convincing faculty members that an adjustment is needed.

"A blind student is often in the same situation in needing academic adjustments, but they are easier for a blind student to obtain," said Roger Drewicke, coordinator of resources for the handicapped. "It's pretty obvious what the blind student needs. The whole process of negotiation is more difficult for students with learning disabilities, and they are very often put on the defensive."

"You have to go to every teacher and say, 'Hi, I'm learning disabled,'" Clague said. "Each of us is willing to do the extra work we have to do in order to get through a class, but we worry about what the teacher is going to think. It's depressing when a teacher doesn't understand.

"I've had teachers say, 'I can see that you can see, I can see that you can hear, I think you're trying to pull the wool over my eyes and get an extra privilege for yourself,'" Clague said. "I would shy away from anything that would give me a break. If I got an A I didn't earn, what satisfaction would there be?

"People say to me, 'It's hard to believe you have a deficit to hear you talk.' I have to talk well if I can't do other things. When you have deficits you have to compensate, and so you become proficient in other areas. You have to get good at reasoning on your feet, giving oral answers."

Potter has encountered another kind of reaction. "One math professor told me I didn't belong in school. Three electrical engineering professors told me that. It can be hard on you after a while. I just want to finish my degrees now and get out."

Potter is working full time as a systems programmer for Administrative Data Processing and completing his credits in electrical engineering and computer science in evening classes. "I am working at a professional job, which is something they told me I probably wouldn't be able to do. That's what irks me the most, that they said I'd never be able to make it on the job. But I'm doing it."

Kathleen Daly, a counselor at the Reading and Study Skills Center who works with learning-disabled students, said it has been her experience that most faculty members are understanding and "some have been just terrific."

Tom Foley

Karen Clague

Tom Foley

Tom Potter

Tom Foley

Kathleen Daly

About a third of the students she works with have been referred by faculty members, Daly said. "I've had instructors call me and say, 'I have a student who's having some real unusual problems and I think it may be a learning disability.' One faculty member said, 'I look at the spelling, and I talk to the person, and there's too big a discrepancy between what I think this student should be doing and what the student is doing.'"

Daly suggests that the student come in for diagnosis, and with the student's permission she can discuss with the faculty member what the student's limitations are.

"It's my own feeling that faculty members who have had successful experiences with learning-disabled students, who have really gone out of their way to make accommodations, can do more to spread the word than any of us sitting around a table saying what they should do. They have seen that their courses are not watered down, that they're not losing anything. They can carry that message best."

Strategies for coping

When Daly meets with a student, they work together to identify the problem and then look at strategies for coping with it. If the problem is with reading, devices can be used to reduce the visual field by masking everything except the line that is being read.

Taping services are provided on an individual basis. "We use taping cautiously as a supplement," Drewicke said. "Otherwise the students may rely on tapes as a crutch. In terms of employment in the future, it's important for them to develop whatever reading ability they have."

Textbooks and other books are taped free of charge by Recording for the Blind, a national taping agency, and more than half of the books requested are already available. But Drewicke said students sometimes have difficulty when "professors don't order books on time, or there's a delay at the bookstores. Ideally there should be a lead time of six weeks to two months to get a book taped."

Daly has worked with 32 students since she started in December, and her current case load is about 20. Besides work-

Learning disabilities, p. 16

Daily Fee Made Optional

The Board of Regents voted in May to make the student fee that helps support the *Minnesota Daily*, the Twin Cities campus student-run newspaper, refundable during the first two weeks of each quarter on a one-year trial basis.

The *Daily* has been the center of controversy since it published a humor issue a year ago that some criticized as obscene, antireligious, and racist.

Following publication of that issue, there were two legislative inquiries into the *Daily* fee, and some legislators attempted to pass a bill that would have severed the *Daily*'s financial ties to the University.

The regents' vote for a refundable fee followed the recommendation of President C. Peter Magrath. Faculty and student government groups, however, had overwhelmingly supported the mandatory *Daily* fee.

At a faculty meeting, Magrath said he "proudly" defended the *Daily* from legislators who were arguing for the punishment of *Daily* writers or the complete removal of the newspaper from the campus, but that he had had "every reason to assume that a fee recommendation would emerge that might provide some kind of option for students who were offended by the *Daily*."

Magrath made his recommendation after the Student Services Fees Committee, made up of students and faculty members, had voted to retain the *Daily*'s mandatory fee support this year.

Learning disabilities . . .

ing with the students on an individual basis, she leads a support group that gives students a chance to talk with others who have similar problems.

One of the things the group has talked about is how to reduce the likelihood of error by getting enough sleep, eating well, and avoiding undue stress. Students who work late into the night are often amazed by the errors they find when they get up in the morning to check their work, Daly said. "One of the strategies we talk about is making sure you're taking your internal temperature and alternating your study with breaks."

Problems can be eased, but they cannot be eliminated. Learning disabilities "can't be ameliorated, either, by remediation," Daly said. "Some of the best educational methods known have been used with some of these kids since sixth or seventh grade. That's why the accommodation is needed. Let's get on with it and use some auxiliary aids."

Although she works exclusively with students who have learning disabilities, Daly stressed that she is not offering a service that is not offered to others. "The Reading and Study Skills Center has a history of providing services to all students—graduate students, undergraduates, superior students, poor students. What I'm doing is just working with one population and adapting the services that have traditionally been available to their particular needs."

Some of the students she works with are so bright and verbal that Daly can understand why a faculty member might be skeptical about acknowledging a disability. "You look at these students and you listen to them, and you say, 'Come on, what's going on.' But it's real, and it's a very difficult thing for some people to understand.

"It is tough for these students, there's no getting around it. Everything takes them so much longer because they have to read things over and over and monitor their errors. The only thing that keeps them going is their own belief that they can do it. It's going to take them longer, but they do it."

Letters

Immigration Interest

Your article on "Languages Help Rediscover Heritage of Immigrants" [spring 1980] was particularly interesting.

In 1927 or '28 I took a course from Dr. Blegen of the Minnesota Historical Society in which I was introduced to immigrant handbooks. As a graduate student at the University of Illinois, 1928-30, I continued my immigration interest. One paper (which survived repeated clear-outs), "What Happened to German in the United States During the Years 1914-1919," refers to the Iowa law, nor was it the only state to prohibit the speaking of a foreign language in a public place. In East St. Louis a draft registrant was arrested for speaking German to his father on the street. The case was appealed to the circuit court and he was released.

Hardest hit were the German churches, which overnight were to use English, but the membership hardly spoke English, let alone [were able to] use it as a church language.

Hopefully Minnesota is the forerunner in a national revival of languages.

Annemarie Krause
Berrien Springs, Michigan

Might Have Guessed

In your article on PKU [spring 1980] you mentioned the mass screening test for the disease developed by Dr. Robert Guthrie of Buffalo, New York. You seem not to be aware that Bob is a Minnesotan and a distinguished alumnus of the U of M.

Harold L. Segal
Buffalo, New York

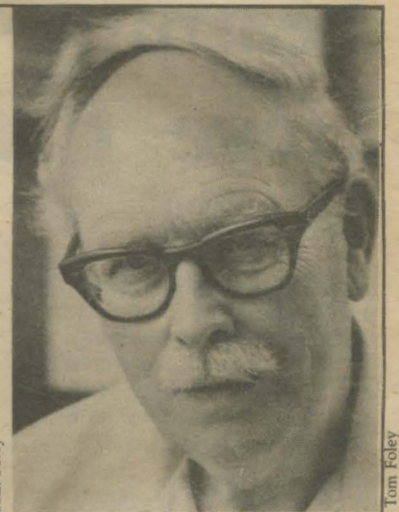
Compliments

I am a '59 graduate of the University and thoroughly enjoy your publication. My major was medical technology, but in recent years I have developed interest in history and the humanities. I therefore appreciate the broad range of your articles as well as the quality of the writing.

In addition to the above, I was delighted to discover your lead article on PKU in the recent issue; my oldest child has this condition.

Suzanne Miller
Tiburon, California

Dominick Argento
Tom Foley


Stanley Dagley
Tom Foley

Lawrence Markus
Tom Foley

Dennis Watson
Tom Foley

Four Named Regents' Professors

Four University faculty members were named to Regents' Professorships by the Board of Regents in May. The honor is the highest the University can give members of its faculty.

The new Regents' Professors are Dominick Argento, music, Stanley Dagley, biochemistry, Lawrence Markus, mathematics, and Dennis Watson, microbiology. They were selected on the basis of their distinguished professional careers and contributions to the academic life of the University.

Kenneth Keller
Tom Foley

Nils Hasselmo
Tom Foley

Hasselmo and Keller New Vice Presidents

Two new University vice presidents have been named this year. Nils Hasselmo, a professor of Scandinavian languages and literature, took office in January as vice president for administration and planning. Hasselmo succeeds Robert Stein, who is now dean of the Law School.

Kenneth Keller took office in June as vice president for academic affairs. Keller, a former head of the chemical engineering department, succeeds Henry Koffler, who left last summer to become chancellor of the University of Massachusetts at Amherst.

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UPDATE

Fall 1980
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A Publication for
Friends of the
University of Minnesota

University photo lab

A scene from the 1947 University Theatre world premiere of *All the King's Men* by Robert Penn Warren, then a University English professor. University Theatre is celebrating its 50-year anniversary under a new director. **See pages 7-9.**

The Silence
The Humphrey Fellows
An Underground Search
Chromosome Banding
Pete Wagner

'So It Was True': A Story of Silence

by Paul Dienhart

The Silence is a term that has come to stand for the failure of organized Christianity to speak out effectively against the Nazis' planned extermination of 6 million Jews.

The generally accepted explanation is that Christians simply did not know what was happening to the Jews. In his recently published book, *So It Was True,* Robert Ross refutes that explanation, raising the more disturbing possibility that church authorities decided not to get involved in stopping what they had to know was one of the great horrors of modern times.

Ross, an associate professor of religious studies on the Twin Cities campus, studied the reporting on the plight of the Jews in 52 American Protestant magazines from 1933 to 1945. "The story was told from beginning to end," Ross said in an interview. "The Silence was not a silence of ignorance or lack of information."

Although the American Protestant press reported accurately on the atrocities suffered by the Jews, the reports were usually couched in skepticism, thus diminishing the impact of the reporting, Ross said.

Even in 1945, when the doubting editors were able to see the death camps with their own eyes, the reaction was more shock and resignation than outrage, Ross said. "In the end, the editors and writers seemed unable to cope with something as unreal, even unimaginable, as the mass slaughter of millions of people. Perhaps the editors did not read their own periodicals," he writes.

As early as February 1933, reports of restrictive laws, tear-gas bombings, and atrocities against the German Jews began to appear in American Protestant magazines. The reports were often small items in news digests. In articles and editorials, the Nazis tended to get the benefit of the doubt, Ross found.

"We know that the Jews control the movies, the newspapers, and the money market. It may not be out of place to find out where Hitler has received his strange ideas," said a story in *The Lutheran Companion*. And an editorial in the *Moody Bible Institute Monthly* asked "Christian people to suspend their judgment about Germany's present dealings with the Jews until both sides have an opportunity to be heard."

The fundamentalist publications began a pattern of reporting that lasted through 1945. They consistently provided some of the most accurate and complete reports of actions against the Jews, but usually in the context of prophecy being fulfilled, "a sophisticated form of anti-Semitism," Ross said.

"God is using the hatred of the Nazis against the Jews as a scourge to drive them into Palestine," said a story in *The Alliance Weekly* in 1933. *The Watchman-Examiner,* which in December 1939 became the first American Protestant publication to make a direct reference to Hitler's "final solution" to his Jewish "problem," also ran such statements as, "While he is out of his own land and unconverted, the Jew is a stumbling block to the Gentiles."

Tom Foley

Robert Ross

In 1934 the Baptist World Alliance met in Berlin. Reports were glowing. "There was paint everywhere in Germany except on her women," wrote the editor of *The Baptist and Reflector*.

Kristallnacht—the night of broken glass—forced the American Protestant press to shed some of its naiveté in November 1938. A young Jew assassinated a German embassy official in Paris, setting the Nazis on a rampage of terror. Synagogues were burned, Jewish homes and businesses were destroyed, and many Jews were arrested or killed. After *Kristallnacht,* persecution of Jews became increasingly direct.

"The recent brutal attacks bear the earmarks of official Nazi planning," reported *The Lutheran Companion*. The persecution of the Jews became the major topic in Protestant press reporting of news from Germany, a trend that continued until 1942, Ross discovered. From 1933 to 1938 and from 1942 to 1945, coverage concentrated on the struggle of the Protestant church in Germany, he found.

Despite the increased coverage, "no one in the American Protestant press fully comprehended *Kristallnacht's* meaning for the future of Jews in Germany," Ross writes. Only one of the 36 magazines Ross surveyed reported in 1939 on Hitler's speech predicting "the destruction of the Jewish race in Europe." In that same year, *The Christian Century* optimistically noted the creation of German "transit camps" —camps with names like Dachau and Buchenwald—as an "alternative to terror."

The coverage in *The Christian Century* is representative of the skepticism that laced much of the reporting, Ross said. In 1942, when there were six death camps operating in Poland, its editor, Charles Clayton Morrison, wrote, "Beyond doubt, horrible things are happening to the Jews in Poland. It is even possible the Nazis are herding all the Jews of Europe into Poland...with the deliberate intention of exterminating them there."

Then Morrison's editorial begins to quibble about the actual number of Jews killed and the rumors—eventually proved true—of corpses being made into fertilizer and soap. "It is unpleasantly reminiscent of the cadaver factory lie which was one of the propaganda triumphs of the First World War," he wrote.

"What's important is that Morrison bore reluctant witness to the mass murders of Jews in Poland," Ross said. "There was a continual fear of propaganda that led the editors almost always to report what they heard with a question mark. There was a huge propaganda effort in World War I, and in 1925 most of the stories were proved false. The editors had been young reporters at that time, and I'm sure they took note of that embarrassment."

As late as the summer of 1944, when a death camp was liberated near Lublin, Poland, the editor of *The Christian Century* was still peevishly writing about inflated estimates of people killed and the World War I corpse factory tale. "Clearly, Charles Clayton Morrison was a hard man to convince, even though his own periodical had been reporting evidence of the existence of such death camps for some time," Ross writes.

In 1945, Morrison saw pictures of a death camp. His editorial, entitled "Gazing Into the Pit," said, "We have found it hard to believe that the reports from the Nazi concentration camps could be true. Almost desperately we have tried to think that they must be wildly exaggerated. But such puny barricades cannot stand up against the terrible facts. It will be a long, long time before our eyes will cease to see those pictures of naked corpses piled like firewood or those mounds of carrion flesh and bones. The thing is well-nigh incredible. But it happened."

A similar editorial in *The Signs of the Times* had an appropriate headline: "So It Was True!"

Ross said that almost no detail of the death camps revealed when many camps were liberated in 1945 had not been reported by 1943. Despite this information, churches mounted no campaign to force the government to help the Jews directly. There were no bombings of rail lines to the camps, no rescue missions, not even any leaflets dropped to tell prisoners that help was on the way, he said.

"I'm not ready to charge American Protestantism with total complicity in the suffering of the Jews," said Ross, who received his undergraduate degree from a conservative church college and once considered entering the Protestant ministry. "I'm more convinced that there was a built-in complacency about the situation. There always seemed to be the feeling that if the situation was so bad the government would do something. The government's line always was, 'The best way to help the Jews is to win the war.' "

> "I'm not ready to charge American Protestantism with total complicity in the suffering of the Jews. I'm more convinced that there was a built-in complacency about the situation."

After the war, many eyewitness

accounts published about the horrors of the camps helped dispel skepticism that remained, Ross writes. A young Baptist minister, for example, wrote to *The Baptist Herald* about visiting Buchenwald and seeing lampshades made of tattoed human skin, an ornamental material much favored by the commandant's wife.

"But the magazines still do not seem to have said what needed to be said," Ross writes. "There was no indignation or word of moral outrage at such evidence of human degradation."

One group of magazines preached forgiveness. "Vengeance belongs to God and not to us," *The Mennonite* wrote of the upcoming war trials. Other magazines kept silent. "Atrocity stories afford some people a chance for emotional debauch. We believe that the less said about such matters the better," wrote the editor of *Advance*. And the same month *The Christian Century* ran Morrison's "Gazing Into the Pit" editorial it ran an article on the death camps that asked, "How many of these chambers represented genuine efforts to kill lice?" It is a question Ross finds "startling, if not incredible."

In contrast was the outraged reaction to the dropping of the atomic bomb. A typical response was *The Lutheran Companion* editorial: "The atomic bomb is a stain upon our national life. We Americans have set a new standard for hell's atrocities."

In fact, Ross found that reporting on the European Jews as Jews almost disappeared by late 1945. "For much of the American Protestant press the Jews in Western Europe more or less lost their identity as Jews and became displaced persons," he writes.

How does one explain the skepticism and lack of moral outrage? "The death of 6 million people—2 million of them children—in organized death factories is nearly beyond human comprehension," Ross said. "I have trouble comprehending it. Once you begin studying the holocaust you're never the same. In my mind I'm constantly mulling over how such a horror could have happened."

Ross believes churches are more sensitive to correcting atrocities today, he said, noting the relief efforts for the "boat people."

'U' Faces Biggest Retrenchment Ever

by Elizabeth Petrangelo

Tuition will rise 10 percent winter and spring quarters as part of a plan to recoup a $14.1 million loss in the University budget caused by the state fiscal emergency.

The action to raise tuition temporarily was approved on an 11-0 vote by the Board of Regents in October. Regent Neil Sherburne was not present.

The tuition "surcharge" will raise $3.5 million and affect 58,705 day students as well as thousands of evening-class students on all five campuses.

The board also authorized the University's administration to borrow up to $5 million to help cover part of the loss. No loans will be taken out until closer to the end of the fiscal year, when exact needs will be known, said C. T. Johnson, acting vice president for finance.

Calling the actions "joyless" and "reluctant," President C. Peter Magrath described to the regents his plan for making the $14.1 million cutback through a combination of tuition increase, bank loans, and internal budget cuts of $5.8 million.

The cut was made necessary by the projected $195 million deficit in the state's budget, which will leave all state-supported institutions with less money than planned for the year. The University receives 36 percent of its support from the state.

Enrollment on the University's five campuses reached an all-time high this fall. Magrath told the board that "while there is an economic recession, there is no recession in the demand for education.

"While we are experiencing record-setting enrollment, we are also experiencing record-setting retrenchment. This means we must serve more students with fewer dollars," he said.

Students in the College of Liberal Arts on the Twin Cities campus, the largest body of students, will have to pay $340 for classes winter and spring quarters, an increase of $31 a quarter. The tuition surcharge comes on top of a 7 percent tuition increase approved last year for classes this year.

Tom Foley

C. Peter Magrath

Although the top priority in making the cuts was to protect all segments of the University directly involved with teaching, about 50 positions for graduate assistants were cut, said Kenneth Keller, vice president for academic affairs.

The loss of those positions will mean larger classes in some cases and fewer people available to grade papers, Keller said. "We had to cut about 50, and a cut of one is serious," he said.

Student plans to protest the budget cuts by boycotting classes and marching on the state capitol are aimed at state government and not at the regents or the University administration, student Joe McLaughlin told the board. McLaughlin is chairman of the student representatives to the Board of Regents.

Many departments have made their own budget cuts by decreasing their spending for supplies, expenses, and equipment. "Much of this will be in travel, which will take a toll in faculty development and outreach," Magrath said in a letter to the board early in October. "Another hard-hit area will be duplication costs, which will reduce our ability to provide students...with printed class material to supplement lectures and discussions."

The tuition surcharge came at a particularly difficult time for Continuing Education and Extension (CEE), which had already advertised costs for many of its winter and spring classes by the time the vote was taken.

The 10 percent surcharge will affect all extension classes taken for credit and more than 25,000 people throughout the state.

"The surcharge carries the possibility of keeping a good many adults out of our classes and programs because their family budgets are already tight," said CEE associate dean Donald Z. Woods. "At the same time, adults have always shown a lot of determination in improving their careers and lives through more education, and we think they'll try very hard to adjust."

UPDATE

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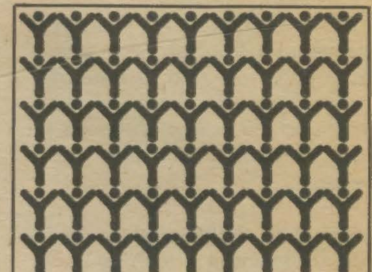


Helping people help themselves helps us all

Yunis Looks Back, Ahead: Sees Patterns of Life, Disease

by William Hoffman

The microscope is like a time tunnel to Jorge Yunis. When he looks through a microscope at the chromosomes of primates, he sees patterns that hark back to the origin of human life.

When Yunis looks at human chromosomes, he sees patterns that help to explain how individual qualities are transmitted through generations, and other patterns that permit improved prenatal diagnosis of genetic defects and the early detection and treatment of cancer.

In an age of miracles in molecular biology, Yunis, a professor of laboratory medicine and pathology on the Twin Cities campus, is one of the world's top authorities on the structure and organization of human chromosomes.

Chromosomes—the word comes from the Greek meaning "colored bodies"—were discovered a century ago when scientists subjected cell nuclei to various dyes. Their central role in cell division, body chemistry, and heredity soon became apparent.

The centennial of the discovery comes at a time of giant strides in genetic research, a time of greater hope for curing disease and understanding the basic mechanisms of life than ever before.

Yunis has contributed to the effort by refining a technique called chromosome banding, a revolutionary advance in chromosome research developed a decade ago. The technique is enabling him, as he puts it, "to bridge the gap between genes and chromosomes and to visualize, at a refined level, how human chromosomes are organized."

Jorge Yunis

Tom Foley

Chromosomes and genes

Chromosomes are threadlike bodies in cell nuclei that split lengthwise as the cells divide. At the beginning of cell division, chromosomes pair off and look like floppy X's.

Each chromosome is made up of two materials; proteins and deoxyribonucleic acid (DNA). The DNA carries the information of heredity in discrete units called genes.

Human body cells each have 46 chromosomes (23 from each parent) thought to contain a total of approximately 30,000 genes.

More than 200 genes having specific functions—say the production of a protein or an enzyme—have been localized on specific chromosomes by a technique called gene mapping. The effort to map genes was given a boost by the development of chromosome banding.

When chromosomes are stained before they split, they display a distinct pattern of light and dark horizontal bands thought to be caused partly by DNA characteristics in the chromosomes.

The first banding experiments, performed on condensed chromosomes, produced 320 such bands (per 23 chromosome pairs) that gave far better definition to chromosome form and structure than previous methods.

Yunis refined the original banding technique several years ago by catching chromosomes before they condense and divide—when they are longer and thinner. Where one band appeared before, three to fifteen bands now appear. These bands coalesce in a condensed chromosome to appear as one band.

> Yunis's work has led to the discovery of more than 50 genetic defects and more than 20 cancers with a consistent chromosome defect.

The technique has enabled Yunis to visualize minute bands out of order, missing, or duplicated—genetic defects.

"The beauty of this work is that it is done with just a light microscope," Yunis said. He is now able to identify more than 2,000 bands per 23 chromosome pairs.

Currently, Yunis is working on a 5,000-band technique. At this refined level, with the aid of an electron microscope, he can visualize the contours of genes and the way they are fixed to coiled chromosome filaments: they look "like beads on a string."

Banding before birth

Chromosome banding has proved to be an invaluable tool for diagnosing genetic disease. The high resolution technique developed by Yunis "has resulted in the discovery of more than 50 well-defined new chromosomal defects" and is now the international standard, he said.

According to Yunis, 12 million Americans carry true genetic diseases due wholly or partly to defective genes or chromosomes. Genetic defects are responsible for half of all spontaneous abortions and 40 percent of all infant mortality.

Yunis estimates that genetic defects are present in five out of every hundred infants. Each parent carries between five and eight recessive genes for serious defects and "stands a statistical chance of passing on a serious condition to each child."

Other conditions known or believed to have a genetic factor are heart disease, certain forms of arthritis, diabetes, schizophrenia and depression, and cancer, Yunis said.

In some genetic diseases only one or a few genes are involved. In others, a chromosome or a chromosome band containing several genes may be abnormal: part of a chromosome may have broken off and become lost or duplicated. Chromosome fragments may switch places or become attached to other chromosomes—a phenomenon called translocation. In any case, vital genetic material is sometimes lost or duplicated, causing a defect.

A victim of Down's syndrome, for example, has three of chromosome 21—a trisomy—instead of the normal pair. This defect produces a mongoloid child, but other diseases caused by lesser chromosome defects may be less apparent and the symptoms less severe.

Yunis, who is also a genetic counselor, has been able to use high resolution chromosome banding in prenatal genetic analysis. The use of amniocentesis—a procedure in which amniotic fluid is drawn from the womb and analyzed—together with Yunis's technique means that smaller chromosome defects can be identified because precise breakpoints and minute rearrangements can be seen.

The recommended time for amniocentesis is between the 14th and 16th weeks of pregnancy, according to Yunis. If a defect is found and abortion is elected, it is preferably performed before the 21st week. It takes about ten days to analyze the chromosomes of amniotic cells using the new technique, whereas old methods required two to three weeks, Yunis said.

Chromosomes and cancer

Chromosome banding is contributing to the fight against cancer. Improved resolution "has resulted in the discovery of more than 20 malignancies with a consistent chromosome defect," according to Yunis, who addressed the 1980 International Symposium on Cancer.

In a recent paper, Yunis wrote that the application of high resolution chromosome analysis to tumor cells "has made it possible to visualize, at a refined level, the specific site where some cancer genes appear to be localized."

Yunis's own discovery of minute chromosomal loss in some embryonic cancers and various translocations in leukemias and solid tumors now makes it possible "to determine the general nature and precise location of a large number of cancer genes in man."

Two of the childhood tumors that Yunis has studied extensively are retinoblastoma and Wilms' tumor. Both these cancers can be inherited, and both show tiny chromosome defects. Retinoblastoma victims are born

without or lose a small band of chromosome 13. Some patients with Wilms' tumor are missing a band in chromosome 11.

Yunis and other investigators have found chromosome defects in a number of leukemias and lymphomas. People suffering from chronic myelogenous leukemia, for example, usually have a chromosome translocation: part of chromosome 22 breaks off and attaches itself to chromosome 9, probably affecting a gene at the breakpoint.

"Translocation is the most common chromosome defect in cancer," Yunis said.

Chromosome breakage and translocation are often caused by environmental factors—toxic chemicals, radioactive substances, and viruses. Some families have greater susceptibility to these agents, he said. "What may happen is that an agent from the environment breaks a chromosome and interrupts the DNA sequence that regulates genes, and uninhibited cancer cells proliferate.

"What we are trying to do with the high resolution technique is to be able to see a specific chromosome exchange for most of the 200 known types of cancer and be able to subdivide one type of cancer into several, each with a different response to treatment."

The technique has dispelled the earlier belief that 50 percent of leukemias and other tumors have normal chromosomes, Yunis said. Currently, Yunis and his colleagues are investigating the chromosome structure of solid tumors—those found in breast cancer and cancer of the colon, for instance. But solid tumors present technical problems.

> Yunis reported "a striking resemblance" between human and chimpanzee chromosomes.

"In leukemias and lymphomas you have more readily accessible cancer cells. They are already in suspension. Cancer cells from solid tumors, on the other hand, are difficult to isolate for study. A new technique has to be developed."

By identifying a cancer in its early stages and knowing precisely what kind it is, treatment can be improved, Yunis said.

A striking resemblance

Chromosome banding is helping scientists to understand the pathway of primate evolution. This aspect of Yunis's work involves comparative studies of the chromosomes of humans and great apes.

Much of the evidence for understanding primate evolution comes from gene mapping studies. More than 30 specific genes on 18 different chromosomes have been localized on the corresponding chromosomes of man, gorilla, and chimpanzee.

In an article in *Science* published last spring, Yunis reported "a striking resemblance" between human and chimpanzee chromosomes. High resolution banding "demonstrated that essentially every band observed in man has a direct counterpart in the chimpanzee complement."

There are differences, to be sure. A chimpanzee cell has 48 chromosomes and a human cell has 46. Yunis explained, however, that the same kind of DNA that gives rise to two pairs of chimpanzee chromosomes has fused in the course of evolution to form the human chromosome 2 pair.

Other differences between the two species involve a series of inversions in chimp chromosome segments, which are not thought to make a genetic difference. Also, chimpanzees have greater amounts of a chromosome material called heterochromatin.

Heterochromatin, according to research done by Yunis ten years ago, is rich in repetitive DNA sequences called satellite DNAs. It is believed to have an important evolutionary role in preventing cross breeding between closely related species.

One type of human satellite DNA forms hybrids with a satellite DNA found in chimpanzees, gorillas, and orangutans, but not in gibbons or other mammals. Other human satellite DNAs arose following the evolutionary divergence between man and chimpanzee and helped to prevent the formation of hybrid species, according to Yunis.

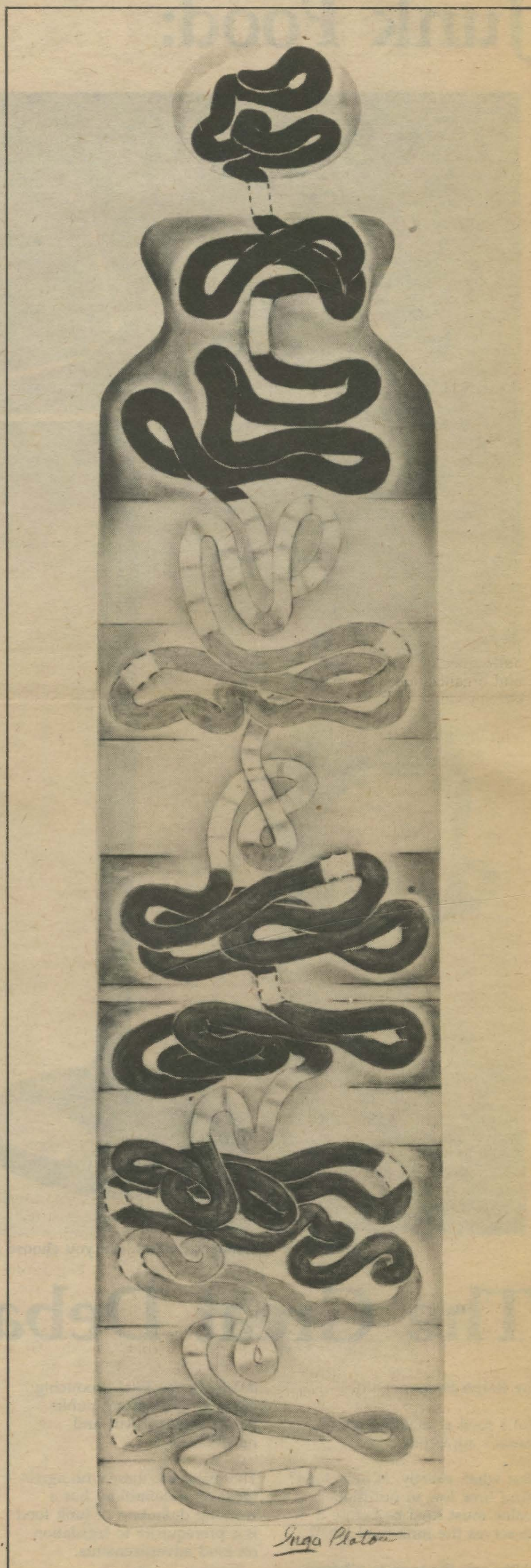
Yunis concluded his *Science* article by noting that "the differences observed at the chromosomal level between man and chimpanzee appear to be of no consequence to their phenotype [an individual's appearance and behavior]."

Indeed, such a remarkable degree of similarity "makes difficult a precise explanation of the large biological differences observed between these closely related species."

Such differences may have to be found at the level of single genes since "small gene changes can produce great differences in phenotype," Yunis said. For example, modern man has twice the brain capacity of early man. This difference may be the result of a base change in just one or a few DNA sequences critical to brain development, he said.

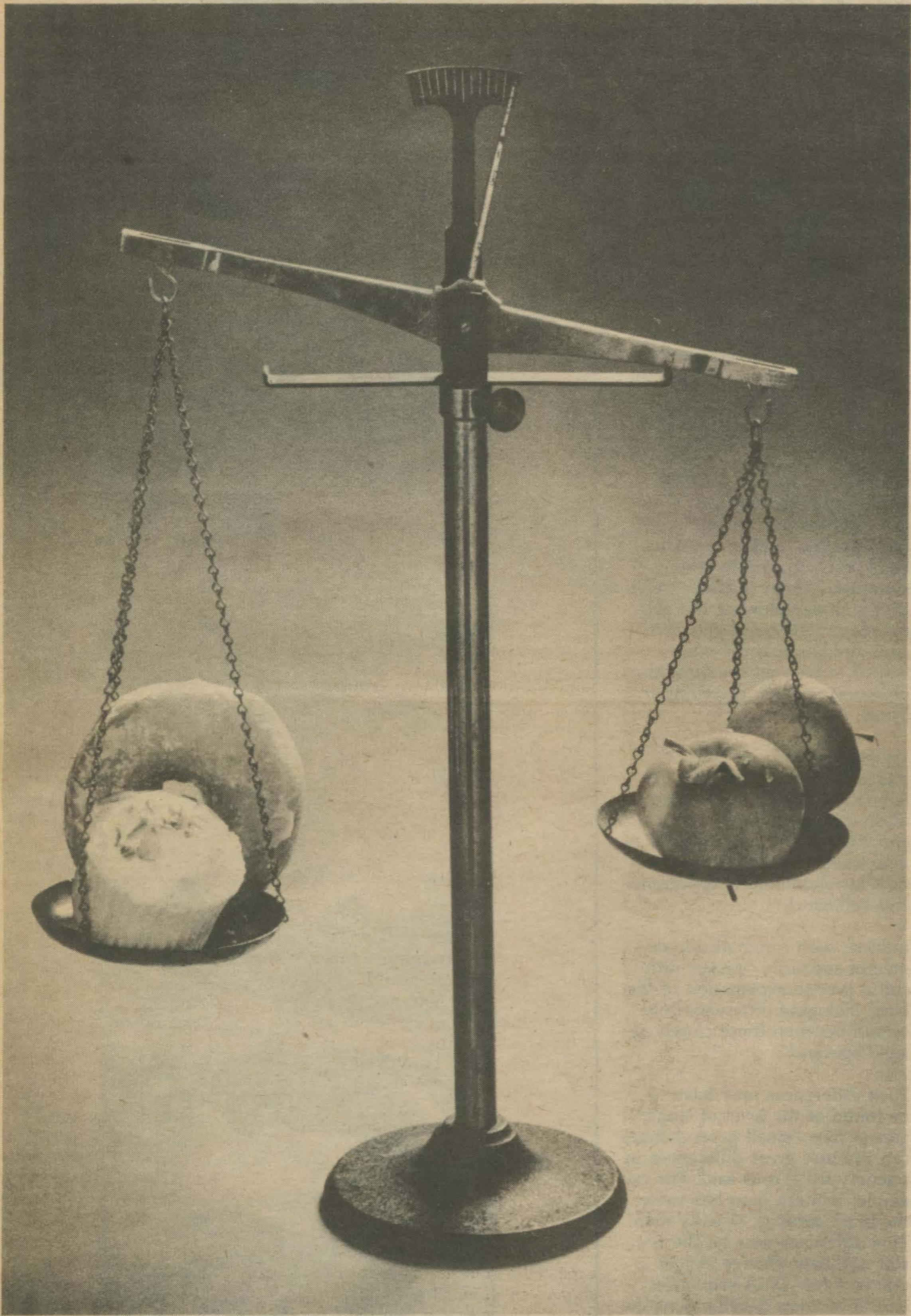
After several years of study, Yunis has concluded that gorillas, chimpanzees, orangutans, and humans had a common ancestor "who must have had 48 chromosomes, of which many were similar to those of modern man." The chromosome organization of this common ancestor will be described by Yunis in a book to be published this year.

A schematic drawing of human chromosome 1 after banding. The left half shows the pattern produced by the original technique. Yunis refined the technique to reveal more band divisions as indicated in the right half, enabling him to see minute defects.



An artist's conception of human chromosome 13 before it divides. Yunis believes genes are located in the light bands along the coiled filament. An illustration by Inga Platou, assistant professor emeritus of biomedical graphics.

Junk Food:



Sarah Knoepfler

A weighty decision: which would you choose for a snack?

The Great Debate

by Ralph Heussner

Junk food is as American as mom's apple pie.

But what, exactly, is junk food? And how low in nutritional value must food be before it deserves the junk food label?

Although the term is a household phrase, the federal government's move to classify junk foods, or foods of minimal nutritional value, has fired a debate in the food-producing industry and among public health professionals and nutritionists.

The dilemma: there's no agreement on a definition, but a working definition of junk food is a prerequisite to legislation on food advertisements.

"The lack of a definition of junk food has seriously delayed the formulation of nutrition policy and legislation that would provide guidelines for the nutritional descriptions of foods advertised and the nutrition messages conveyed in advertisements," says Judy Brown, director of public health nutrition on the Twin Cities campus.

Brown and a colleague, Phyllis Fleming, have collected data that may help the U.S. Department of Agriculture (USDA) define the widely used yet hard-to-describe phrase.

The Minnesota nutrition experts surveyed 300 Minneapolis and St. Paul consumers on their perceptions of junk food. Consumers were asked to define the term and then rate 41 different foods as junk, of high nutritional value, or neither.

"The results of this analysis reveal major differences between what consumers and the USDA standard would identify as junk," Brown said. The study suggests that consumers may be willing to accept standards for junk food classification more stringent than the government's proposed guidelines.

According to the USDA, a 100-calorie portion of food that does not supply 5 percent or more of the required daily allowance for any one of the eight specified nutrients (protein, vitamin A, ascorbic acid, niacin, riboflavin, thiamin, calcium, and iron) would be classified as a food of "minimal nutritional value."

But, Brown contends, "The USDA standard fails to take into account some of the negative components of foods, such as high sugar, saturated fat, or salt content, and does not address the concern that nutrients will be added to fabricated foods to bring them above the minimal nutrient density level." Brown has urged the USDA to adopt stricter standards.

The Minnesota study reported that:

Consumers attributed the following characteristics to junk foods: high in sugar, high in calories, bad for health, high in salt, fatty, and high in additive content.

Selections of high quality foods were, for the most part, based on nutrient content and low fat.

Of the 41 foods considered, potato chips, presweetened cereals, soft drinks, candy, gum, french fries, vitamin-fortified presweetened cereals, diet soda, and cookies were considered junk by more than 50 percent of the consumers.

More than 50 percent of the consumers considered oranges, green beans, baked chicken, eggs, whole wheat bread, white potatoes, whole white milk, honey, unsalted nuts, unsweetened cereals, margarine, hamburgers, and butter high quality foods.

Only four foods—tea, coffee, wine, and sugarless gum—were classified by more than 50 percent of the consumers as neither junk nor high quality foods.

The description "fortified by vitamins" does not automatically make food high in quality in the mind of the consumer.

Interestingly, Brown and Fleming found that four of the top nine foods designated as junk by consumers are not covered by the recent USDA ban on selling foods of minimal nutritional value in schools that participate in federally funded school lunch and breakfast programs. These foods are presweetened cereals, french fries, cookies, and vitamin-fortified presweetened cereals. The USDA regulations, which were effective July 1, forbid the sale of chewing gum, certain candies, and soda during school hours.

Sarah Knoepfler

Judy Brown

Brown noted that junk foods are not necessarily all bad. Their effect depends on a person's health, the quantity of junk food consumed, and the rest of an individual's diet.

For example, a milk shake is good for someone who needs to gain weight but is hardly the thing for an overweight person. An underweight person might also benefit from pizza, which has considerable nutritive value and is high in calories, but for an individual with high blood pressure who is on a low-salt diet, pizza wouldn't be advisable.

Brown said public health nutritionists must provide consumers with understandable information on the effect of junk food on diet and health. "We must show consumers that diet will make a difference. For instance, by cutting out sticky sweets, they can cut their dental bills considerably. Unless consumers see enough benefit, they will not change their diets."

Nutritionists acknowledge that consumers are slow to change their eating habits. "But if certain foods are classified as junk, at least there are some guilt feelings associated with eating them. Maybe in the long run the guilt will get to consumers and they will give it up," Brown said.

Why do Americans continue to consume potato chips and candy even when they know the foods are low in nutritional value?

"People will eat junk food," Brown said, "simply because they like it."

Tap Dancing on a Truck Bed Got Moulton Hooked on Theater

by Paul Dienhart

Fifty years ago Robert Moulton made his performing debut tap dancing on the back of a truck at the Old Settlers' Fourth of July picnic in Fargo, North Dakota. He was eight years old, and he's been hooked on theater ever since.

This year Moulton has been named artistic director of the University of Minnesota Theatre, which is also marking its 50th anniversary. About the same time Moulton was doing the buck and wing on a truck bed, University students were dressed in fanciful oriental costumes as players in a romance called *Turandot*, one of the first University Theatre productions.

Theater productions at the University go back to 1881, but it was 1931 before the University Theatre was officially established. One of Moulton's jobs is to help University Theatre celebrate its 50th anniversary.

"We are trying to create a special atmosphere for the audience this year," Moulton said. When Rarig Center was built in 1973 to house the University Theatre, the idea was that the building should not be more important than the plays. Rarig is rather stark as theaters go.

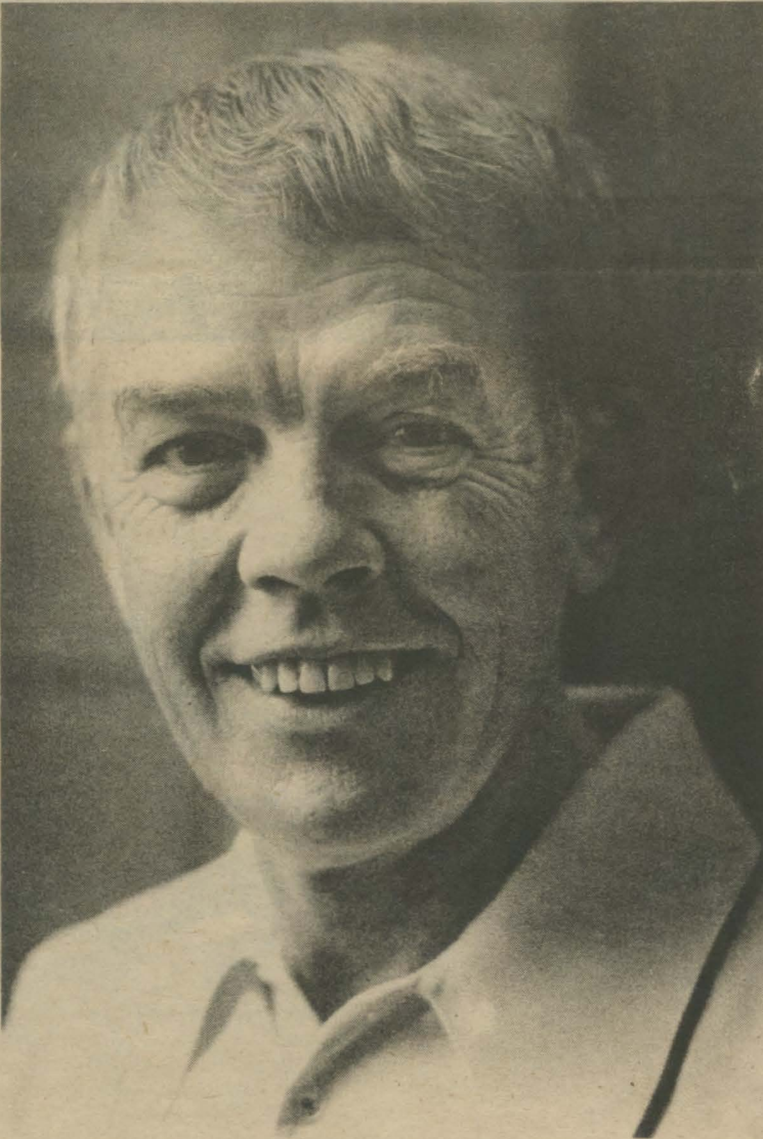
Now the lobby is festooned with fringed banners and a mobile. The ushers have natty new uniforms. "We want to make the theater a place in which people are comfortable and to which they will want to return," Moulton said.

Theater is more involved than watching a play, said Moulton, who—aside from appreciating a play—relishes the very act of going to a theater. "I'm pleased that people from all around a community take the trouble to arrange their schedules, travel to a place, congregate, watch people perform, share in emotions, applaud their appreciation, and go home more happy or more thoughtful than when they arrived," he said. "Theater is a group ritual that puts people in closer touch with one another."

Television, on the other hand, can be an anonymous experience in which the individual withdraws into the world of a cathode-ray tube, he said.

"I love going to see things," Moulton said. "I still remember going to the railroad station in Fargo to get a glimpse of Franklin Delano Roosevelt on the back of a train. There were thousands of people there for the same reason. We all shared in an emotional experience that we could never have gotten by watching candidates debate on TV."

Apparently many other Minnesotans enjoy the act of going to the theater. Last year's University Theatre productions averaged 80 percent capacity, and many performances were sold out. Ticket sales are expected to be even better this year because of a season ticket package offer of six plays for the price of five.



Robert Moulton

Tom Foley

Moulton is overseeing some special events for the 50th season. A special performance of the first play of the season, Thornton Wilder's *The Skin of Our Teeth*, was hosted by President C. Peter Magrath and his wife, Diane. The play is directed by an alumnus of the University and the Guthrie Theater, Jon Cranney, and stars two talented graduates of the theater department, Shirley Dierks and David Chase.

In March some well-known alumni will return to display their talents in a special show, performing scenes from plays and songs from musicals. And when Showboat season starts, Captain Frank Whiting will come out of retirement to direct one of the Showboat's typically crowd-pleasing plays.

Over the years the theater department has produced its share of famous professionals: Peter Graves, Robert Vaughn, Linda Kelsey, John Astin, Tovah Feldshuh, Larry Gates, and Loni Anderson among others. Graduates Ken Frankel and Steven Kanee directed at the Guthrie this season. Frankel directed *Wild Oats* and Kanee was associate director of *The Tavern*.

These graduates presumably agree with the realization that came to Moulton at the age of eight: it's wonderful to find something you love to do and can be paid for doing. For Moulton, the path to a theater career was show dancing.

By the time Moulton was in high school he had a dance line of six girls and a female partner. While he was attending junior college in Duluth, he stopped by the community playhouse and got hooked. "It was a great life," he recalls. "I had classes in the morning, taught tap dancing in the afternoon, and rehearsed plays in the evening."

After returning from service in World War II, Moulton came to the University, where he earned advanced degrees in theater. At the urging of his wife, he joined a modern dance group on campus—the only male among 50 women dancers. There he was discovered by Gertrude Lippincott, a talented local dancer and choreographer. He joined Lippincott's dance company and at her urging he studied dance in New York, working with Martha Graham.

As a theater professor Moulton has staged an average of two University Theatre productions a year since 1946. He also directed and choreographed 28 melodramas and operettas as artistic director of the local Stagecoach Opera Company from 1962 to 1972.

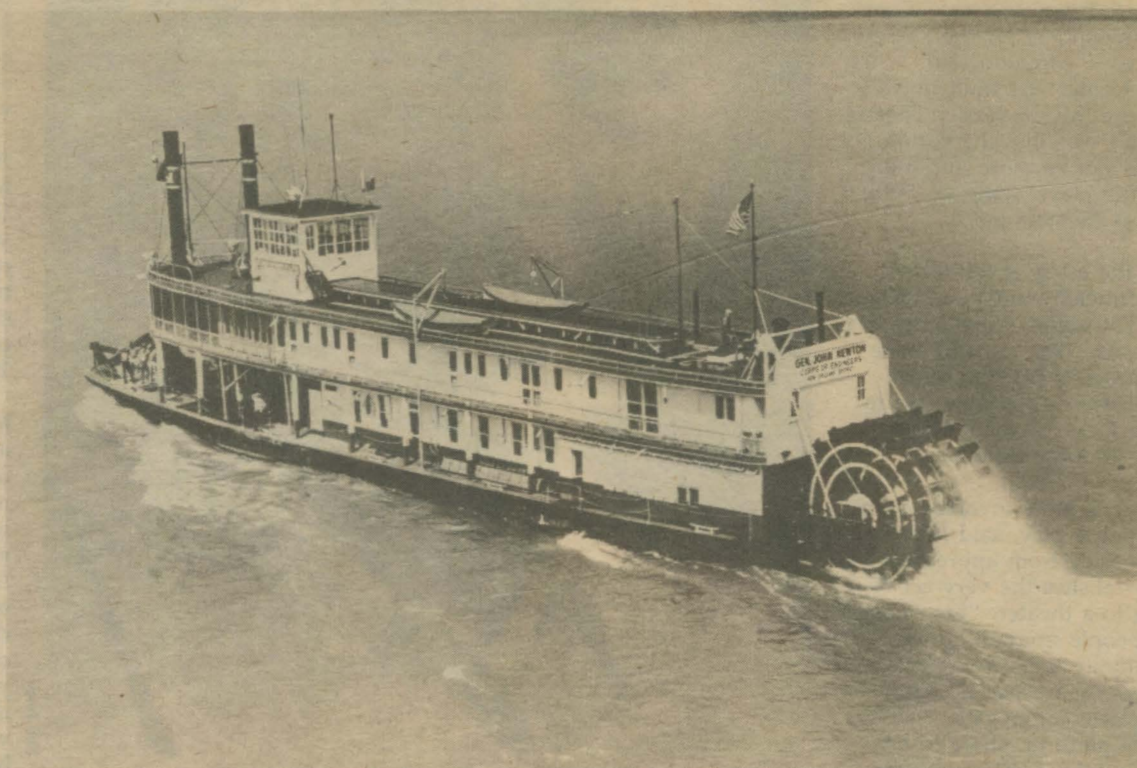
Moulton combined his dance and theater experience to become one of the founders of a new theatrical discipline: stage movement. Actors had had voice coaches for years, but their movement in a role was expected to fall naturally into characterization. "I got angry over the idea that if you felt your role you would naturally move correctly. Movement, like voice, is a teachable skill," Moulton said.

"Plays are, necessarily, a more intense version of life. Acting must be more intense than movement and speech in everyday life. The idea of teaching stage movement is to help actors physically come to grips with their characters, to decide how the characters relate to the actors' own body rhythms."

Moulton tells his stage movement students to go to the circus and watch the lion tamers and tightrope walkers. "Those people put their lives on the line in their performances. It would be wonderful if actors could always have that same kind of energy and sureness of knowing exactly what they're doing. Watch the tightrope walker. See him smile and gesture to the crowd. He makes you a gift of his grace and ease, and you feel that perhaps you could walk that tightrope too."

As artistic director Moulton will be trying to coordinate the theater program so everyone involved can do a better job. "Considering how complicated any production is and that University productions are a learning process for our students, I am amazed the plays are as successful as they are," Moulton said. "Of course we always aim for a smash hit."

A Celebration, Some Memories



University photo lab

Tom Foley

The University Theatre (upper left) is celebrating its 50th anniversary.

Larry Gates as King Lear (upper right) in a 1974 production of Shakespeare's tragedy that marked the official opening of the Rarig Center theater complex. Gates, a veteran of Broadway, television, and motion pictures, appeared in several University Theatre productions during the 1930s.

The Minnesota Centennial Showboat (lower left) opened in 1958 thanks to the efforts of Frank M (Doc) Whiting, who was named captain of the sternwheeler. The 200-seat theater has become a summer tradition in Minnesota.

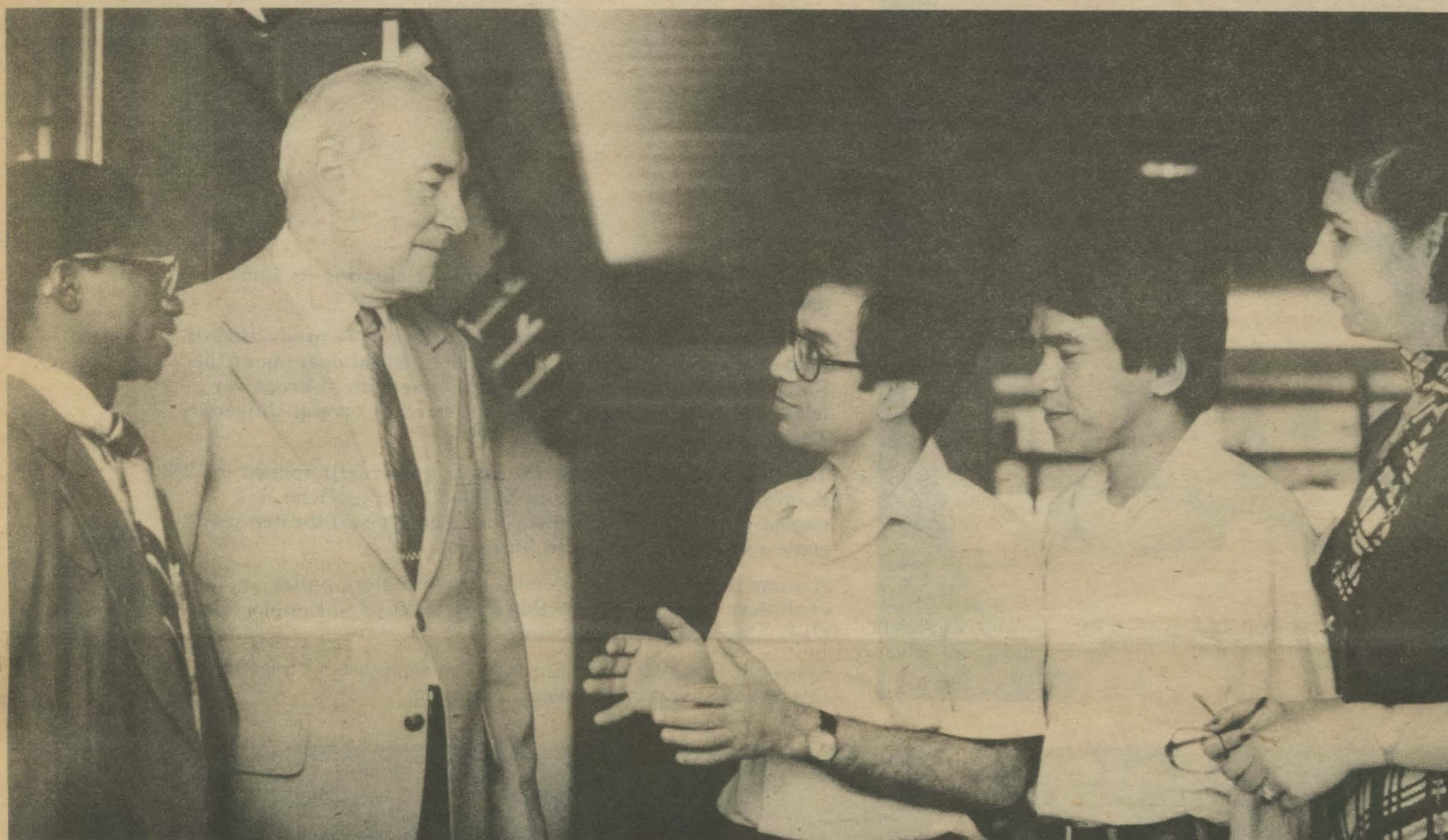
A scene from *Too Many Thumbs* (lower center), a play about evolution. The 1948 production starred WCCO-TV newscaster Dave Moore as the chimpanzee.

Maxwell Anderson's *The Sea Wife* (lower right), a "tragedy of intolerance," was a 1932 world premiere.

University photo lab

University photo lab

Third World Visitors Call for Aid, Trade



Harlan Cleveland (second from left), director of the Humphrey Institute, with (left to right) Lawrence Satuh of Ghana, Ravi Sethi of India, Abu Shah of Malaysia, and Chryssoula Valtirka of Greece.

Maria Saari

by Maureen Smith

When people talk of division in the world, they usually talk of East and West. They talk of power politics, the arms race, national defense. And in the world of 1980, those concerns are real.

But some people are saying there is an even more fundamental division between North and South, between the haves and the have nots. The countries of the North—the United States, Canada, the European countries, the Soviet Union, Japan—are, in varying degrees, the have nations of the world. The countries of the South—of Latin America, Africa, and southern Asia—are, in varying degrees, the have nots.

A group of 27 men and women from the South, after spending a year at 10 different American universities as participants in the Hubert H. Humphrey North-South Fellowship Program, met in June at the Humphrey Institute on the Twin Cities campus for a workshop on North-South relations.

They were professional people in their twenties and thirties—public administrators, urban planners, physicians—and there was a feeling among them and among the workshop speakers that they were future leaders of their countries. "When you become the head of Zaire...," one Humphrey fellow began a comment to another. "As I was saying to the future finance minister of Turkey...," a speaker remarked. When the workshop was over, the Humphrey fellows returned to their countries. This year 82 fellows are studying at 17 American universities.

Discussion at the workshop centered on the recent report of an international commission chaired by former West German chancellor Willy Brandt. The Brandt commission report is titled *North-South: A Program for Survival*. Workshop speakers included two members of the commission, representatives of the United States government, and University faculty members.

A degree of optimism

"If we had chosen a moment for the report to come out, we couldn't have chosen a worse one," said Rodrigo Botero Montoya, former finance minister of Colombia and a member of the Brandt commission. The world economy had deteriorated since the commission began its work in 1977, and international relations had worsened—not so much between North and South, but between East and West. (And money eaten up in the arms race between East and West, the Brandt report emphasizes, is money that cannot be spent to feed and heal the world.)

One recommendation in the Brandt report is that funds for development be raised through a tax on international trade or on the sale of armaments. "It takes a degree of optimism, or a lack of realism, to propose to the world community not only a reduction of armaments but a tax on armaments when events in Afghanistan and Teheran are pushing the world in the opposite direction," Botero said.

But if there are reasons for despair, Botero said, there are also reasons for hope. "Groups of developing countries, in spite of an adverse international climate, have been able to show remarkable rates of growth and diversification of their economies. There are some newcomers to the industrialized world." The number of claimants for aid has fallen and "several of the advanced developing countries have now become donors," he said. Most Latin American countries have "graduated" and are now receiving little or no bilateral assistance.

On a recent visit to Japan, Botero said, he heard the Japanese refer to the newly industrialized countries of southeast Asia as the "gang of four"—Singapore, Hong Kong, Taiwan, and Korea —because of "the rapid strides they're making in penetrating Japanese domestic markets as well as the markets of the world."

Not everybody would count it as good news that more countries are competing successfully in world markets. Imports have taken their toll on some American industries, and workers are unemployed. But Jorge Cornejo Fernandez, a Humphrey fellow from Peru, said it is important for Americans to remember that trade flows two ways. Unless the South exports to the North, it cannot pay for the North's exports to the South. Americans talk today about "a flood of imports," Cornejo said. But they are unaware that one out of twenty jobs in the United States is in production of goods for export to developing countries.

Imports have a moderating effect on inflation, the Brandt report says, and they encourage needed modernization of industries in the North. Throughout the report the theme is mutual gain. There are calls for compassion and social justice, but even more there is a search for solutions through which all nations can benefit.

Advanced industrial nations are in the midst of their worst recession since the end of World War II, the report says. Productive capacity is underused, and 6 percent of the labor force is unemployed. At the same time there are projects in the South that cry out to be undertaken. "The coexistence of great needs in the South and the underused capacity in the North suggests the scope for large-scale transfer of resources based on mutuality of interests," the report says.

The idea is to take measures that "will not only accelerate development in the South, but will also stimulate exports from the North and thus help to restore the health of the world economy."

Putting food first

The needs in the South are great. Several Humphrey fellows and workshop speakers stressed that the first priority should be given to food.

"Most of the developing world has placed agriculture almost at the bottom of its priorities," said Donald Plunkett, chief of the agricultural division of the U.S. International Development Cooperation Agency. "No country can really move ahead until it solves its food problem.

"No country can really move ahead until it solves its food problem."

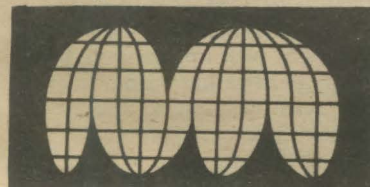
Many countries would like to industrialize without solving the food problem. It doesn't happen."

Farmers must receive fair market prices, Plunkett said. Many

governments have placed higher priority on needs of urban areas and have aimed to keep food prices low for people in the cities, he said.

At least 70 percent of the poor in developing countries live in rural areas, the Brandt report says. "The mass urban poverty of Kinshasa, Mexico City, or Cairo is a relatively modern phenomenon. For all its squalor, it is one step up from rural deprivation. To some extent, that is why these cities have grown."

Gains in food production have been made in Asia, Plunkett said. "India may have turned the corner and may be in good shape for the next 20 years. If that's true, it's very significant. But the continent that's in dire trouble is Africa. Birth rates are rising, food production per capita is falling."



Poverty and hunger go hand in hand. The United Nations now lists 29 "least developed countries" (LDCs) in the world, most of them in two poverty belts, one across the middle of Africa and the other across part of south Asia and into east Asia. (But about two thirds of the world's poor are in four large countries of Asia—Bangladesh, India, Indonesia, and Pakistan—and of these countries only Bangladesh is among the LDCs.)

Agriculture is sometimes inefficient in the South because of the time spent on nonproductive work, said Jose Mannento, a Humphrey fellow from Tanzania. "In parts of Tanzania women may spend eight to ten hours a day fetching water and tending the firewood."

But efficiency does not necessarily mean large-scale farming. "There is a mistaken view that large farmers produce more efficiently than small farmers," said a workshop speaker, Per Pinstrup-Andersen of the International Food Policy Research Institute in Washington. "It's not true that food is most cheaply produced on large holdings.

"There is evidence from a large number of countries that if you introduce labor-saving technology, then you can greatly increase labor productivity but you don't really increase land productivity. There is no evidence that land productivity goes up with farm size."

Small-scale, labor-intensive farming may be best for many of the developing countries. Ravi Sethi, a Humphrey fellow from India, said there is a district in India with one of the highest levels of rice production in the world "and it's all nonmechanized, small-scale farming."

> "There is a mistaken view that large farmers produce more efficiently than small farmers."

One current trend that concerns Andersen is the growing of sugar cane, maize, and other agricultural products for conversion to gasohol. "A bandwagon is being generated, and it's dangerous," he said. "They are taking land out of food production and putting it into energy production."

The trouble with exchanging food security for energy security, Andersen said in what he admitted was an overstatement, is that "poor people depend on food security, and rich people depend on security in liquid fuel."

Besides the example of India, Plunkett paid tribute to the agricultural success story of Korea. As in India, he said, a strong commitment was made to agricultural research, and Korea now has "world-class scientists." In spite of a land endowment that isn't very good, he said, "Korea now leads the world in rice production. It's a remarkable story. This has been done within a 20- or 25-year period. It can happen. It can happen within half a lifetime or even less."

Five different worlds

Botero said his experience on the Brandt commission showed him that there are several categories of countries in the world, that each has a different idea of what is important, and that "all of them are right." He described the world as seen by five types of countries.

At the bottom are the least developed countries, the LDCs of sub-Saharan Africa and south Asia. Because of poor resource endowments and unfavorable climatic conditions, "these countries are the most needy in the world." It was an eye-opening experience, he said, when the Brandt commission held one of its meetings in Mali, one of the poorest countries in the world with a per capita income of $80 a year.

When the LDCs think of North-South relations, they tend to think of the need for aid or international transfers. "These countries are and should be the priority claimants. If any rationing must be done, it must be in their favor," Botero said.

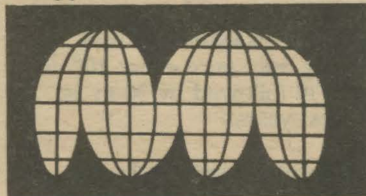
Next are the low-income countries, somewhat better off than the LDCs. They are still recipients of aid, but as exporters of commodities (agricultural and mining products) they are often especially interested in price stabilization, Botero said.

Low-income countries are often highly dependent on single commodities, and the Brandt report gives the example of Zambia to show the effect of price instability. In a recent year 94 percent of Zambia's export earnings came from copper. "There was a boom in copper prices from 1972 with the price peaking in April 1974 at $3,034 per ton; then it suddenly fell to $1,290 before the end of the year. But the prices of imports continued to rise so that the volume of imports Zambia could buy fell by 45 percent between 1974 and 1975."

Middle-income countries, with more widely diversified economies and more advanced industrial plants, have now entered the world markets with manufactured goods, Botero said. For them, aid has disappeared as a priority issue and free trade has become fundamental. What worries them is a growing trend toward protectionism, toward tariffs and quotas, in the countries of the North.

For a middle-income country that is counting on the profits of its exports, Botero said, "it can be a fatal blow to see a world market abruptly closed."

Oil-exporting countries have their own problems and should not be cast as villains, Botero said. "They resent being treated as rich countries. They have a serious preoccupation with world inflation. They say, 'We are selling our capital, losing our asset that is our lifeblood, and we must ensure that we replace it with something that keeps value. This is not a renewable asset. When the oil disappears, what will be left?' "



Political science instructor Martin Sampson III said the oil-exporting countries "have their own very substantial development problems. The nature of oil production is that it employs very few people. The revenue comes back to the government, and the discovery is made that it is very tough to spend that money effectively. They don't have the accountants to keep track of it, or the engineers to put it to use. The expenditure of wealth leads to unavoidable corruption and increases the number of foreigners in the country. You end up with a political dilemma. That's a major part of what happened to the shah of Iran."

Botero said he was surprised by the vulnerability of another group of countries, the western European countries. He said his British colleague on the Brandt commission, former prime minister Edward Heath, told him that "sector after sector of British industry finds that it is no longer competitive. He would visit shipyards in South Korea and see equipment more modern than anything that exists in Britain."

"There is a feeling in western Europe that the period of growth and dynamism is behind, not ahead, that the frontiers of development are increasingly elsewhere," Botero said. "What to me was a surprise was to see that the countries one took for granted were looking at the world as if the balance of power was not only shifting but had already shifted."

With such different views represented, Botero said, it was a major achievement for the commission to issue a unanimous report—"and it was not obvious through our proceedings that it would happen." The unanimous report is a tribute to the wisdom of chairman Brandt, he said, but also reflects the sense of vulnerability among all groups.

"All of these groups had enough of a stake in a functioning world economy that it was necessary to make concessions," Botero said. "No longer is the improvement of conditions in the South just a matter of philanthropic or sentimental interest in the developed countries. There is a clear self-interest in the North for dynamism to be maintained in the developing countries."

(Members of the Brandt commission from the United States were *Washington Post* publisher Katharine Graham and Wall Street banker Peter Peterson. Other members were from Kuwait, Upper Volta, Chile, Tanzania, India, Malaysia, Indonesia, Japan, Canada, Sweden, France, Guyana, and Algeria.)

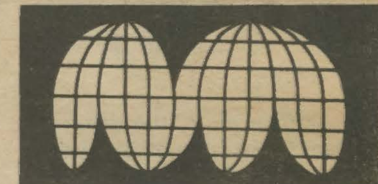
What of America?

Botero did not characterize the stance of the United States, but other workshop speakers told the Humphrey fellows that Americans are going through a time of discouragement and insularity and that prospects are not good for increased foreign aid. And after a year in America, the Humphrey fellows had their own observations.

"The great majority of Americans are not well informed about our countries," said Kenneth Kanda of Ghana. "On many occasions you find Americans using their own yardsticks to judge our countries.

> "The great majority of Americans are not well informed about our countries."

"In a situation in our countries where wealth is amassed in the hands of a few, where people in the villages don't even have good drinking water, where you have a nationalist government coming in and wanting to transform the society, that government is labeled communist and is branded as part of the Soviet bloc.



"There are many of us in the younger generation who have moved out of the villages in order to go to the university, who see our mothers and fathers still in the villages with the rain dripping down on them. The conviction has come to us that we cannot live in comfort while back in the villages they don't have food."

When a nationalist and reform-minded government comes in, Kanda asked, "Is there any way that the United States can go to the aid of these people instead of pushing them away, calling them communists, and driving them to extremism?"

Ravi Sethi of India had another kind of observation. "We have seen the tremendous strength and vitality of the industrial enterprise in America, we have seen the tremendous strength and vitality of the political system, the freedom of discussion that you enjoy. And yet at the same time we hear this endless refrain, 'We ourselves are in trouble. We don't know where we are going.'

"It's this sense of despondency that is striking to an observer from outside. The world will not wait for the United States to wake up or resolve its problems."

Scientists Go Underground In Search of Unified Theory

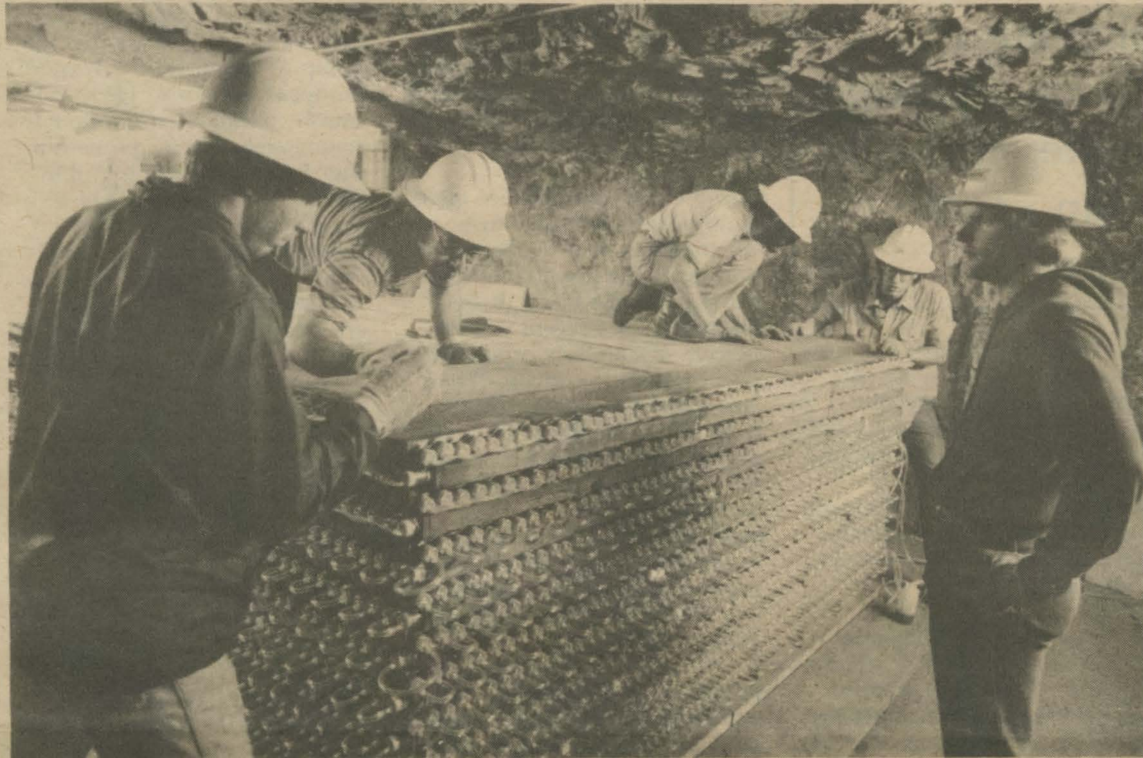
by Mark Canney

A bat dips and sways through the air to the sound of Wagner's "Ride of the Valkyries." Five scientists in hardhats grunt and groan, lifting slabs of gray concrete laced with metal tubes. The setting is a carved-out section of shiny reddish jasper 2,000 feet below the surface of the earth.

What looks and sounds like a 1930-vintage horror movie set is actually preparation for a high-energy physics experiment with far-reaching ramifications.

You might say the Twin Cities campus physics department has "gone under" to answer some rudimentary questions about the nature of matter.

Supported by a grant from the U.S. Department of Energy, University physicists are working in the 23rd level of a retired iron ore mine in Soudan, Minnesota.



Tom Foley

Physics professor Marvin Marshak (second from left) and students work on the Minnesota detector. It is hoped that the instrument will detect the decay of protons.

The Soudan mine, the deepest and oldest in Minnesota, was given to the state in 1963 by the Oliver Iron Mining Division of U.S. Steel Corporation. The Minnesota iron mining industry was literally born in this mine in 1884, but the mine was considered worked out by 1962.

Sections of the 23rd and 25th levels have been leased to the University by the state Department of Natural Resources for the experiment. The mine's maximum depth is 2,500 feet.

Access to the mine is provided by an elevator that rivals a carnival ride as a source of adrenalin surges: it was built in 1924 and its 800-feet-a-minute shaking, quaking ride is powered by a 600-horsepower electric motor.

Physicists from the University have been braving the elevator ride for the past year or so. With the help of Howard Bristol and Walter Heikkinen, two retired miners who worked the Soudan mine before it closed, they have prepared a 20- by 40-foot section for their research work.

The area is complete with fluorescent lights, a space heater—the temperature is a constant 50 degrees Fahrenheit at the 2,000-foot level—a phone to the surface, and a stereo cassette recorder, since no radio waves will penetrate that far into the ground.

The experiment that all this subterranean labor is leading up to will further the knowledge gained by the 1979 Nobel Prize-winning effort in physics. That prize was awarded for research on the unification theory, which states that all the elementary particles of matter and all the forces acting between them can be explained by a single comprehensive theory.

There are four fundamental forces in nature: gravity, electromagnetism, the nuclear or strong force that holds the nuclei of atoms together, and the weak forces that are responsible for some radioactive decays.

The 1979 Nobel winners, Sheldon Glashow and Steven Weinberg of Harvard and Abdus Salam, who works at the Universities of London and Trieste, were responsible for unifying the electromagnetic and weak forces. The Minnesota project will be an attempt to relate the strong force with the weak and electromagnetic forces.

"The experiment is of such importance to the worldwide physics community that there are experiments planned on the unification theory in Utah, Ohio, India, and in a tunnel that passes through the Franco-Italian Alps," said University physicist Marvin Marshak.

Including the strong force in the unification scheme gives rise to the surprising theoretical prediction that over a long period of time matter is intrinsically unstable and spontaneously converts to energy. Observing this breakdown of matter will be the key to the experiment.

The researchers hope to observe the protons contained in the atoms that make up specially made slabs of concrete and taconite dust as they convert from matter to energy. Such transformations are extremely rare, happening only once every 10^{30} to 10^{34} (10 followed by 30 to 34 zeroes) years.

"The experiment can be performed either by observing a very small amount of matter for a very long time or by observing a very large amount of matter for a relatively short time," Marshak said.

The physicists have opted for the latter.

Initially, the researchers planned to pump 5 million gallons of water into the mine from nearby Lake Vermilion, but because of the expense and the amount of space needed they have abandoned that idea. Instead, they have built what they call the "Minnesota detector."

The Minnesota detector is a series of rectangular slabs 10 feet long, 1 foot wide, and about an inch and a half thick. Each of these slabs is laced with conduit that contains argon and carbon dioxide gas. The gas-containing metal tubes will detect protons in the concrete and taconite mixture as they break down.

When the detector is completed there will be 432 slabs stacked in alternate directions to a height of eight feet. The detector will be 10 feet long by 10 feet wide and will weigh 30 metric tons.

Included in the detector will be the necessary 10^{30} protons, giving odds that at least one proton decay should be detected a year. "Actually, we hope to be able to detect about 10 decays a year," Marshak said.

When a proton decays, a very small amount of energy is given off in the form of an electric pulse. These pulses will be detected by the tubes in the concrete-taconite slabs. Because of the extremely small amount of energy given off, the tubes must be hypersensitive, which is why the experiment must be done deep underground. On the earth's surface, cosmic rays would overload the detector tubes.

Even with 2,000 feet of earth above, Marshak says they still expect to pick up readings from a few penetrating cosmic rays. The scientists will be able to differentiate between electric pulses that are the result of cosmic rays and those emanating from the decay of a proton.

The tiny electrical pulse, only a few thousandths of a volt, that is the result of a decaying proton will be passed to a computer via an amplifier at the end of each tube detector. The computer will digest the information and record it for later analysis.

Some forms of cosmic ray, most notably muons and neutrinos, will penetrate the half mile of earth and send information to the computer. This, according to Marshak, will give an added attraction to the experiment—it will have one of the few neutrino detectors ever built.

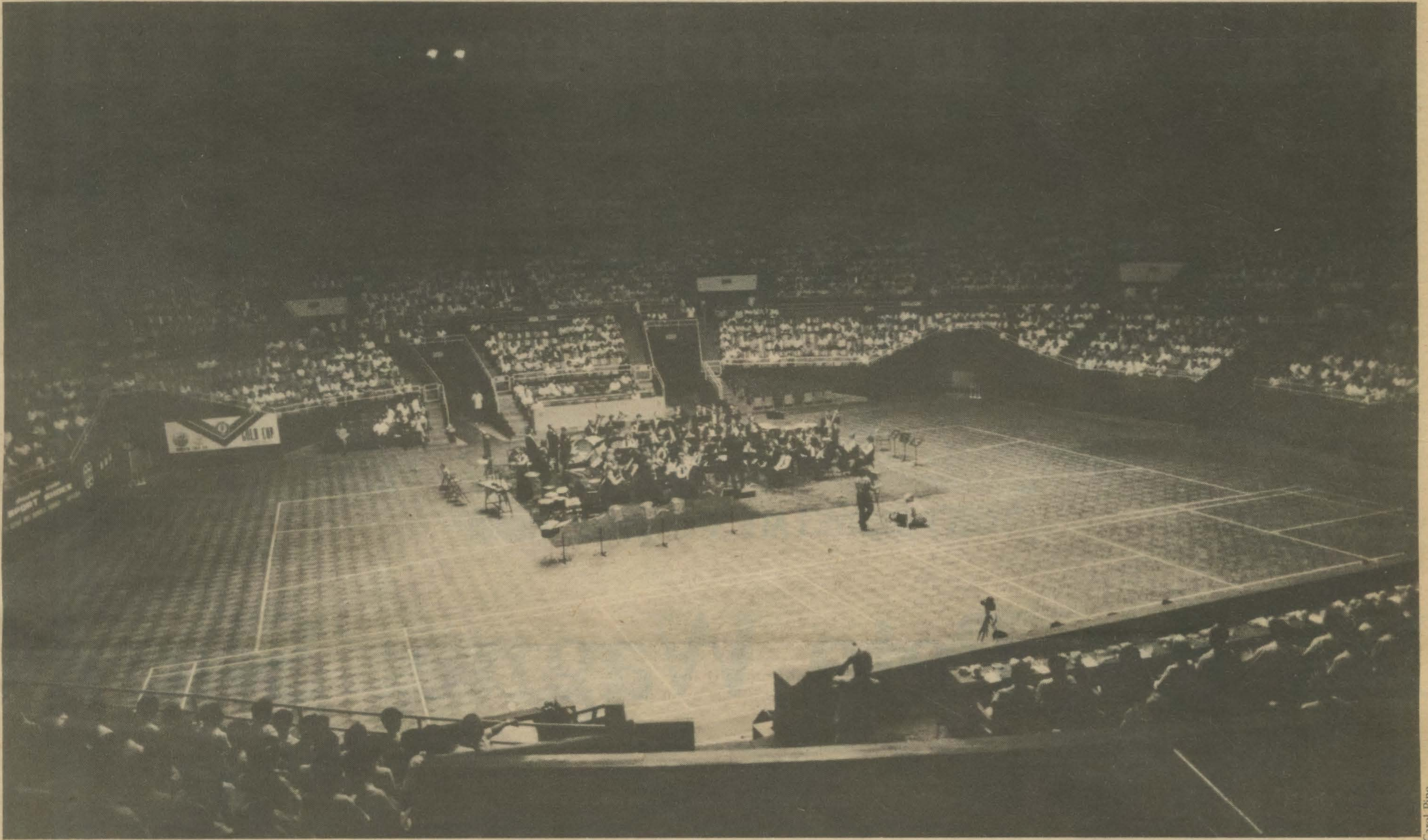
Neutrinos, particularly penetrating forms of radiation, could yield extremely interesting astrophysical information.

Considered as close to nothing as a particle can be, the neutrino has neither mass nor electric charge, but acts as an unhindered messenger from the galaxy. It can convey information about the stars and report the occurrence of supernovae explosions anywhere in the Milky Way.

The neutrinos and muons will also be used to calibrate the detector and generally make sure the system is working properly.

The detector should be operational some time this fall. In the meantime, physicists will be taking the hair raising, noisy elevator ride into the bowels of the earth making sure everything is ready to go.

Band Wows Chinese


Carol Pine

Carol Pine

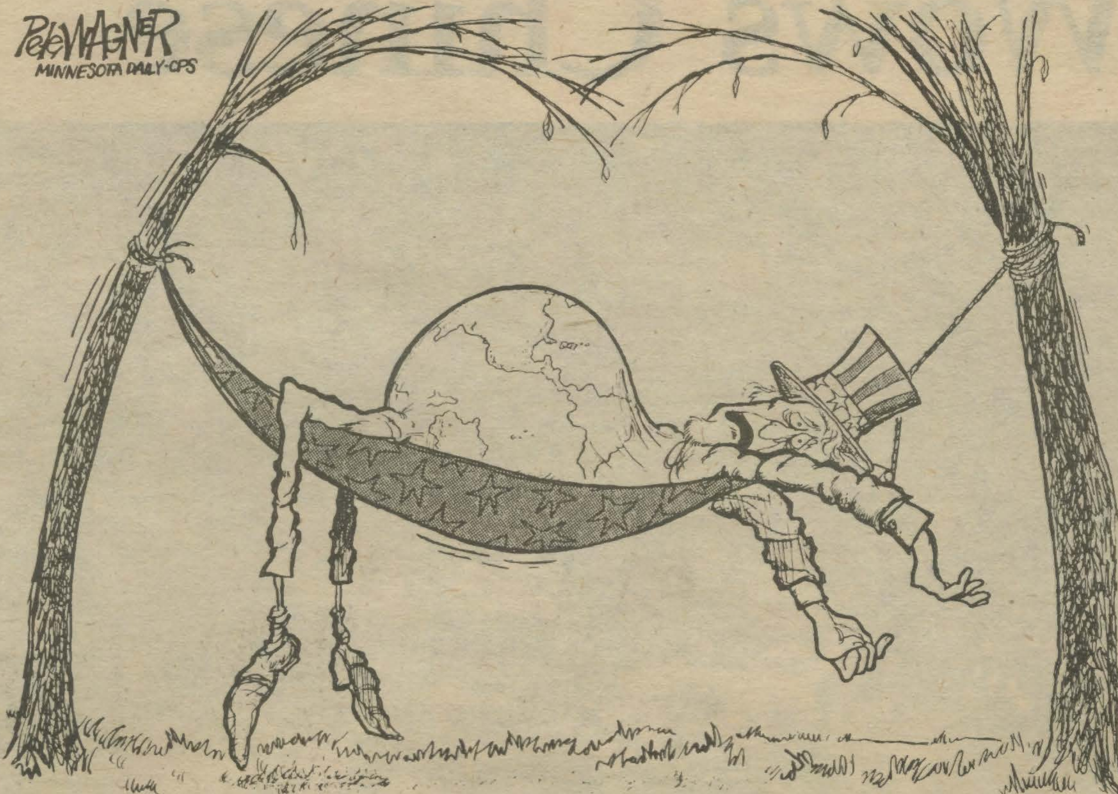
Carol Pine

Russ Tall

Friendship with China continues to grow, and the University of Minnesota is in the thick of it. In early July, while United States and Chinese leaders were meeting in Tokyo, University concert band members were on a goodwill mission of their own. During a 15-day stay in the People's Republic of China, the band played eight concerts in five cities, including four performances in Peking.

The China tour was a resounding success. Audiences responded to the music with loud applause and standing ovations—a display of enthusiasm that was described as "unprecedented" by *Time* correspondent Richard Bernstein.

by Neal St. Anthony



If you remember Pete Wagner as an overzealous University of Minnesota undergraduate of the mid-1970s who printed an "obscene" word on his forehead to defy a sanctimonious Bible Belt preacher, and as a candidate for student body president heading the "Tupperware party" ticket...if that's how you remember him, then Wagner thinks you missed the whole point.

Wagner, 25, a former *Minnesota Daily* political cartoonist, alternately drew lavish praise and anguished screams for his direct and pointed work.

Wagner's energetic and rather pleasant demeanor belies his expressed distaste for big corporations and government and for the silent, material-rich, principle-poor Americans seemingly oblivious to injustices in the United States and abroad. And, of course, students, faculty, and administrators often felt his bite.

Wagner's designed-to-gore-your-ox-whoever-you-are style, he

It's the Pete Wagner Show!

thinks, has earned him the wrath of the powerful and gotten him "blacklisted" by many newspapers.

His cartoons have appeared in dozens of newspapers, including the *Washington Post*, and in *Time* magazine. Now he is touring Midwestern college campuses with a two-hour political satire show, and he has written a book—generously illustrated with his cartoons—about politics and journalism over the past six years.

"Cartooning is a means to an end," Wagner said in an interview. "I don't limit myself to cartoons. That's the reason for the theatrics."

Wagner is particularly remembered for a May 1975 debate with *Catholic Bulletin* editor Bernard Casserly, who criticized two of Wagner's cartoons as "arrogant, prejudiced, and simply in bad taste."

One was a shot at anti-abortion forces in which a speaker exhibiting a pig fetus described it as human to incite his audience. In another cartoon, the convicting jury in the trial of a black Boston physician who had performed an abortion was dressed in Ku Klux Klan robes with crosses around their necks. Said the foreman: "We find the nigger...er, make that the defendant, guilty of manslaughter."

A complaint was brought to the University Press Council, which, however, found the two cartoons "within the reasonable limits of responsible journalism."

That certainly didn't placate Wagner's detractors, who accused him of being anti-Catholic. In a mock attempt at reconciliation, Wagner arrived at the scene of the Casserly debate in the garb of a Catholic monk, complete with a staff and a fleshlike rubber piece on his head to make him look bald.

"Pete was kind of a welcome force on campus because there was so little humor," recalls journalism professor Everette Dennis, who moderated the Wagner-Casserly debate. "He has a kind of wit, a fiendish humor, but it's done in good fun."

Later that spring Wagner confronted a pontificating fundamentalist on the Minneapolis campus mall. The preacher, who was imploring students to be pure and chaste, was challenged by Wagner, who had printed the street term for sexual intercourse on his forehead, à la Abbie Hoffman.

The preacher refused to acknowledge the word. Wagner said he wanted to make the point that sexual intercourse is not something to be shunned. "I asked him, 'Don't you use the words *kill* or *die*?' " Wagner recalled. "Those are worse."

"People would put banana peels under his feet. He'd say 'sex' and everyone would cheer before he'd say it's bad. I didn't interfere with him. He entered a debate with me and I left after five minutes. You can't believe how overblown that was."

But a *Daily* photographer caught the action, and Wagner was suspended for a short time from the newspaper.

"I'm a person of action—I'm theatrical," Wagner said. "It's a perfectly legitimate means of expressing opinions. What I did was effective.

"The people at the *Daily* were upset not because of what I said, but because they said it interfered with his freedom of speech. Their overriding fear was 'How can I write *Minnesota Daily* on my resumé when they associate it with some nut?' "

Former *Daily* editor Jay Novak recalls things a little differently. "I think people gave him a hard time," Novak said in a telephone interview from his office at the *Daily Globe* in Worthington, Minnesota. "But it was honest, unhysterical criticism. Wagner had a tendency to chafe. He's a little bit thin-skinned."

Novak noted that the *Daily* ran a Wagner cartoon depicting an editor's hands, presumably Novak's, grabbing Wagner by the neck and erasing his forehead. That day the *Daily* ran an editorial describing Wagner as a sort of independent columnist with a pencil, not necessarily reflecting the editorial opinion espoused by the *Daily*.

Wagner viewed that as a cop-out.

Said Novak: "I have a small collection of his things. I thought a lot of his cartoons were very good. He tended to bludgeon his subjects now and then. But I can think of several that are memorable," including numerous lampoons of Nixon, Humphrey, Ford, and others.

"He was allowed to do about whatever he wanted," Novak concluded. "We made it clear that his

Tom Foley

Pete Wagner

views were his own"—a stand Wagner found cowardly.

Although he continued as a cartoonist at the *Daily*, Wagner said his production and his enthusiasm ebbed because he was battling his editors and colleagues constantly.

Likewise, he said he tried to land jobs at the two major Minneapolis newspapers, but that editors found his cartoons too controversial—exactly the reaction a good satirist should get, Wagner contends.

"The editors of the Minneapolis and St. Paul papers hate my guts" because he doesn't concede principle to please superiors, Wagner said. "Which is the story of my life. It's impossible for me to get published in the Twin Cities."

"An editorial cartoonist usually reflects the view of his paper," Dennis said. "It's obvious that a conservative newspaper wouldn't hire him. But in some cases a cartoonist is a sort of independent columnist."

Dennis doesn't think that Wagner wants for imaginative, biting satire: "He's better than most major cartoonists from the sheer standpoint of ideas, even though his draftsmanship isn't all that strong."

But, as Dennis observed, competition is tough. There are a lot of good cartoonists. "I would hope that he would develop," Dennis said. "But he would have to join an editorial organization. There are markets for radical cartoonists."

Cartooning, Wagner repeats, is only a vehicle for his ideology, his criticisms. It's only one way to express himself.

And it was as much his quasi-political posturing as his cartooning that preceded his departure from the University. In the spring of 1976 he ran for student body president on the Tupperware party ticket. He promised students that he'd leave campus if he was elected. He wasn't, but he left anyway.

"It was the ultimate reaction, the grand finale," said Wagner, who admits that he enjoys notoriety. "I knew the *Daily* would have to cover the election. They came back with a suspension, which was fine with me.

"It was a constant exercise to show students that the *Daily* was a bunch of mice learning to be rats."

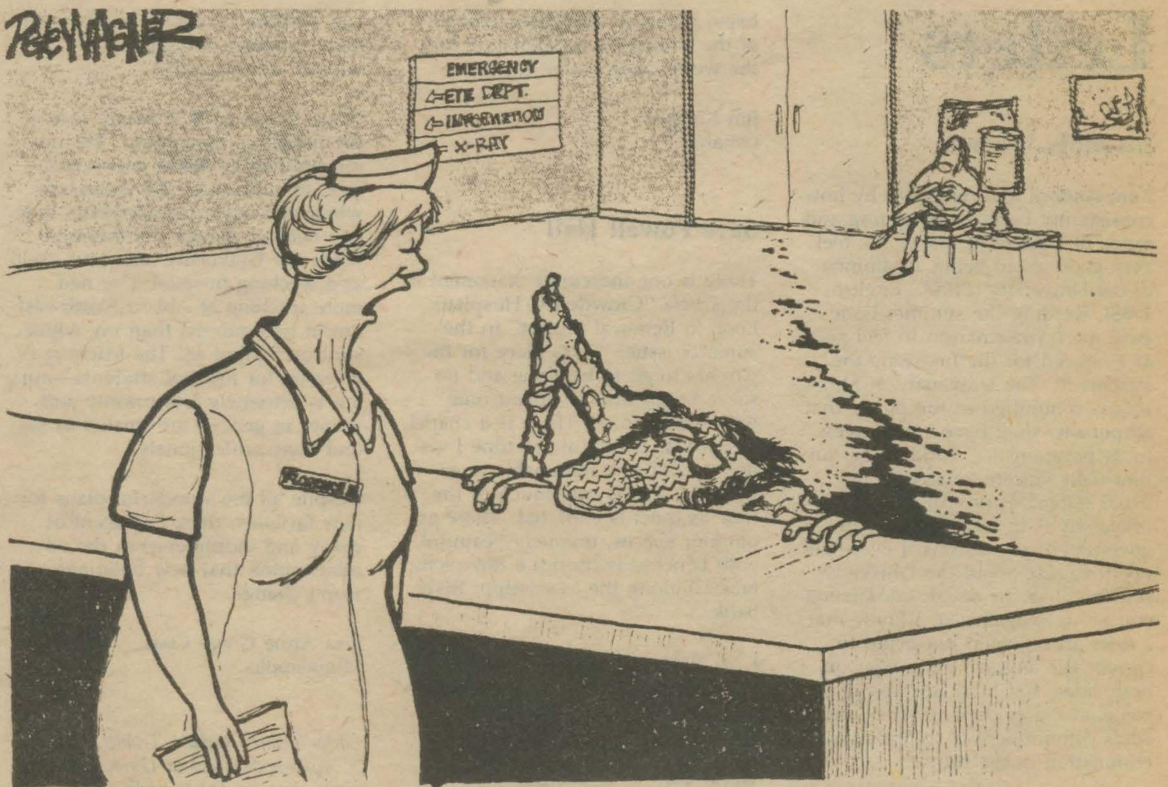
Wagner returned to his hometown of Milwaukee to complete degrees in journalism and political science at the University of Wisconsin. Then he joined the *Madison Press Connection*, a grass-roots effort of journalists who were striking against the city's major newspapers. Many of his cartoons were controversial, including one that showed Israeli Prime Minister Menachem Begin giving a world geography lesson that showed most locations, except for New Jersey, as a subset of Israel.

"I only got $55 a week, but it was like heaven," Wagner recalled of his 10 months at the *Press Connection*. But even there, his editors tried to temper his work—unfairly, he claims.

Wagner regards the media with considerable suspicion, charging that most newspapers breed the banal middle-of-the-road stuff that won't offend. His politics are rooted in his distrust: "The media are giving the wrong information. That's why people vote for Ronald Reagan, and why they hate the ayatollah instead of the shah."

His political satire program focuses heavily on what he regards as his suppression by weakling editors. "All I'm trying to do is get people to realize, by using myself as an example, that they should be suspicious of the media."

One Wagner critic, although generally impressed by his work, finds Wagner's credibility tarnished by his theatrical antics. Novak was somewhat bewildered by what he described as Wagner's "unfocused radicalism."



'DO YOU HAVE A FEE STATEMENT?'

To Wagner, the theatrics and rhetoric aided his credibility, or at least drew attention to his work, his ideas.

"You won't get ideas across if you're a nonentity," Wagner said. "You have to be kind of a celebrity. My purpose was to get the message across. It was a means."

Wagner's last job as a cartoonist was for *Hustler* magazine, a periodical known more for exposing female genitalia than for enlightened writing. However, Wagner never really joined the staff. He submitted cartoons by mail for several months.

"Nine months after I came to *Hustler* its publisher, Larry Flynt, was born again," Wagner quips during his satire show.

Wagner urges students during his review to be optimistic about the prospects for political activism. He believes that the overt acts of protest of the 1960s have given way to subtler, more sophisticated challenges of the system, not to student apathy as some contend.

He points out that he was still mastering a bicycle during the activist heyday in the 1960s. His rhetoric and style, though, imply that had he been there, it would have been the time of his life.

Letters

Invisible Women

I am amazed and delighted by how consistently I enjoy the writing and range of **Update.** It makes me feel very good about being an alumna of the University (Ph.D., English, 1968). Reading the summer issue gave me further reason to feel good as I noticed for the first time the statement "The University of Minnesota is committed to the policy that all persons shall have equal access to its programs...." I found this an unusually sincere version of the usual statement proclaiming that a university is in compliance with government regulations. I even felt good reading about the University's settlement in the sex discrimination suit brought against it. I knew that a brief article could not begin to convey the anguish and anger on both sides, but there seemed to be some strong evidence of the University's commitment to fighting discrimination in the future.

It was therefore with considerable dismay that I got to the last page (because I *was* reading it cover to cover) and found in the announcement of awards and appointments those six male faces smiling up at me. For here once again it seemed to be the same old story—the invisibility of women when it comes to the really important positions, the highly valued honors. I felt angered that not one woman in the entire University seemed to deserve "the honor [which] is the highest the University can give members of its faculty." I hope you will be able to answer me with a reminder that last year's awards all went to women; I would happily stand corrected. But I could not leave unexpressed the strong wave of disappointment which those pleasant faces evoked. Obviously **Update** is not responsible for the University's policy of making awards, but I still thought your fine newsletter a not inappropriate place to voice this alumna's uneasiness.

Judith Stitzel
Professor of English
Coordinator, Women's Studies Program
West Virginia University
Morgantown

Fearing the Fearful

I am down in the reactor cavity of a 500 MWE nuclear reactor. I have *no* fear. I know what I am doing, and why I am doing it.

I am at an "anti-nuclear" rally, wearing a pro-nuclear T-shirt. I have a great deal of fear, and what I fear is the fear-full people around me. They are so bound up with their fear that they will hurt and destroy in reaction to their uncontrolled fear.

Maybe some people of my generation wish to live as the Mbuti Pygmies mentioned in Yi-Fu Tuan's "Landscapes of Fear," but I for one prefer not to live in such a style.

I too live with an encompassing fear, and that is of the current intellectuloid's antitechnology groupthink. If it continues to prevail in public policy I fear the worst. Perhaps, however, the crisis mentality of the United States demands that the worst come before the best.

Jim Kingsly
Omaha

Save Powell Hall

There is one inaccurate statement in the article "Crowded U Hospitals Look to Renewal Project" in the summer issue: "...no place for the parents to go to be alone and no space for parents to spend time with the infants." There is a chapel, which was empty at the time I visited it, and it is reasonable to expect that this is true much of the time as quiet is expected. There are outdoor spaces, uniquely beautiful, with benches (why not a few picnic tables?) along the Mississippi River bank.

I am alarmed to think that this beautiful chapel may be demolished along with Powell Hall, which is probably more important to Minnesota, the United States, and the world than a Nightingale Hall in England. Louisa M. Powell was the first director of the first collegiate school of nursing in the world. Not only is Powell Hall a shrine in this sense, but it is architecturally important, handsome, and sound, certainly holding its own as an important facet of the health sciences complex, of which University Hospitals is a part.

Further, Powell Hall is one of very few places for outstate patients to stay during diagnostic tests and treatments not requiring inpatient or acute care 24 hours a day. Their costs would be much higher if they had to occupy one of the 580 hospital beds or live in a downtown hotel. Powell Hall does indeed need extensive restoration, but I believe it deserves it, even more than Pioneer Hall, which was renovated recently. Perhaps the apartment building between Powell and Pioneer could be replaced by a high-rise without damaging the spectacularly beautiful landscape.

Many University Hospitals buildings certainly are inadequate, but Powell Hall and the chapel should be retained.

Bea Mooney
Lakeland, Minnesota

Nurses' Perspectives

Your article on the University Hospitals renewal project had me shaking my head in disgust. After spending two and a half years as an RN on a cardiovascular station, I've left for Abbott-Northwestern Hospital to return to safe, rewarding nursing. The chronic, dangerous understaffing and the constant political maneuvering always undercut quality patient care, frustrating nurses beyond endurance.

For example, the lack of a septic ICU caused patients who needed it to be "farmed out" to regular nursing floors. The nurses there are totally unfamiliar with respirators and invasive monitoring lines, but that never stopped administration. Many were the days when we nurses were told to "draw straws" to care for these patients or face disciplinary action. Most of us, being new and gullible, accepted the responsibility, praying nothing would "go wrong" on our shift.

Now, I'm in an ICU where care of the patient is paramount. The administration is visible and responsive, in contrast to the University, where red tape entanglements snag any needed change. Furthermore, while the University may tout itself as a teaching hospital, I've had more teaching at Abbott-Northwestern in two months than my whole stint on Station 48. The teaching is reserved for medical students—nursing is extremely low priority and nurses in general are treated as second class professionals.

Despite all the wonderful plans for new facilities, there is a scent of decay and indifference in the administration that new buildings won't change.

Lisa Anne Grage Citak
Minneapolis

Editor's note: Barbara Tebbitt, director of Nursing Services at University Hospitals, was invited to reply to Ms. Citak's letter.

Ms. Citak's letter regarding nursing quality at University Hospitals confuses several issues. Her discussion has little to do with the obvious and legitimate need for updated hospital facilities. Replacement of parts of University Hospitals is a necessary priority in order to continue to attract knowledgeable and capable staff and nationally competitive faculty, as well as to provide quality health care as the state's referral center.

As a teaching hospital, the educational process continues in conjunction with University of Minnesota health science schools and colleges, which provide education for about 5,600 students. University Hospitals are high acuity facilities and specialize in the care and treatment of seriously ill patients who have been referred by physicians throughout the state and nation. The hospitals continue to expect and receive diligent and competent service from each employee under often stressful and emergency conditions.

Barbara Volk Tebbitt
Senior Associate Director of Hospitals and Clinics
Director, Nursing Services

Islam and the Middle East: A Day of Learning

Pulitzer Prize-winning journalist Harrison Salisbury will return to the University to head a group of journalists, business people, and College of Liberal Arts professors for this year's Spectrum '80 program: "Islam and the Middle East: A Day of Learning." Salisbury, who graduated from the University in 1930 and once was Moscow correspondent for the *New York Times*, will deliver the luncheon address on "Russian Foreign Policy in the Middle East" at a community program scheduled for Saturday, November 22, from 8:30 a.m. to 4 p.m. in Coffman Memorial Union. Participants will be able to view displays and select lectures on the arts, music, literature, archeology, politics, and economics of the Muslim world. Information is available from the Minnesota Alumni Association, telephone (612) 373-2466.

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