On May 28, Chancellor Thomas H. Eliot received Washington University’s William Greenleaf Eliot Society Award for distinguished service to the University.

Morton D. May, president of the Eliot Society, presented the award at the organization’s annual dinner meeting. The Chancellor was selected for the award by an anonymous committee of the Eliot Society, an organization of University alumni and friends which includes many prominent business and professional leaders from throughout the country.

In presenting the award, Mr. May said, “While no university in this country, including ours, is safe from violence, Chancellor Eliot’s restraint, compassion, and insight in dealing with students helped to avoid violence. His insistence on listening to the legitimate protests of students brought about a healthy exchange of opinion. With wisdom and understanding, he made the difficult distinction between peaceful demonstration and attempts at violent disruption.”

“He has brought the University the benefit of his broad experience as a teacher, scholar, department head, dean, legislator, and administrator,” Mr. May continued.

The Eliot Society Award, named after the founder of Washington University, was established last year “to honor alumni and friends who, by their interest and support, have greatly enriched Washington University.” The first recipient of the award was Mrs. Arthur Holly Compton, widow of the Nobel Prize-winning physicist who was University chancellor from 1945 to 1953.

Chancellor Eliot received a hand-wrought silver and black marble replica of a piece of sculpture, Heikki Seppa’s “The Search,” recently installed on campus. Below, Mr. May (left) and Chancellor Eliot admire the award.
COVER: Leslie Newman, a student in Herb Weitman's photography course, made this camera study while on vacation in St. Martin in the French West Indies. For other examples of student work, see "The Student Photographer," page 22.

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A new technique developed by scientists in the University's nuclear medicine division and its Biomedical Computer Laboratory is designed to spot abnormalities in the function of specific lung regions, information which should aid the early diagnosis of such diseases as lung cancer and emphysema. Dr. E. James Potchen, director of the nuclear medicine division, believes the method can be a quick and efficient way to test large numbers of persons for lung disorders.

Dr. E. James Potchen, associate professor of radiology and director of Washington University's division of nuclear medicine.
NEW DETECTION METHOD
FOR LUNG DISEASES

No field of research is an island. This was recently illustrated at the School of Medicine in the development of a technique that combined the work of specialists in nuclear medicine with specialists in the application of computers to scientific studies. The result of this meeting of minds is instrumentation that should prove useful in the early detection of certain lung diseases.

The new method essentially involves detecting the amount of radioactivity that passes through a patient's chest as he breathes, and using a computer to analyze the results in such a way that changes in radioactivity in various regions of the lung during respiration can be recorded. The differences in radioactivity over time reflect changes in the density of the different lung regions as the person breathes.

Knowing how the specific lung regions change in density is an important indication of how they are functioning. The new technique, consequently, can determine if there are any abnormalities in the regional function of the lung. This is valuable information. Regional lung function can be altered markedly even though total lung function appears normal because the lung has a remarkable ability to increase the function of one area to compensate for a deficiency in another, Dr. E. James Potchen, director of the nuclear medicine division, explains.

“Being able to detect regional changes should offer us the opportunity to define disease far earlier,” he says, noting that two diseases that change regional function are emphysema and lung cancer.

The idea that sparked the two-year project came from Dr. Roy Bentley, a British physicist who was a visiting scientist for one year with the University's Biomedical Computer Laboratory, which furnishes engineering and computing services for research studies. Dr. Bentley had visited the University in 1966 when he was working on radiation treatment planning and was invited back.

In correspondence preceding his return in the summer of 1967, he proposed to work on the development of equipment called an interface which would link a scintillation camera to a computer. This idea interested the University's computer experts and Dr. Potchen. Work began that summer.

The scintillation camera is a device used in nuclear medicine which detects regional radioactivity within the body. It was developed by Dr. Hal O. Anger from the University of California at Berkeley. The interface proposed by Bentley makes it possible to convert the regional radioactivity as detected by Anger's camera into numerical values which can be analyzed by a computer.

Between the summers of 1967 and 1968, Dr. Bentley and V. William Gerth, Jr., an assistant director at the computer laboratory, designed the interface equipment. Mr. Gerth also worked with Dr. Jerome R. Cox, director of the Biomedical Computer Laboratory, in designing the computer. They modified a general purpose computer originally used in radiation therapy. Other computer specialists at the University subsequently worked on revising the system in various ways.

Once the camera was linked with the computer, Dr. Potchen and his colleagues in the nuclear medicine division worked to make it a clinically useful tool. The programming was a big problem, he says, adding that he received many helpful suggestions from Dr. George Taplin, a noted lung specialist in nuclear medicine from the University of California at Los Angeles.

The result of nearly two years of work is a diagnostic technique that can be carried out quickly and efficiently. A patient stands between a large disc (about 15 inches in diameter) of radioactive material and the scintillation camera. He inhales, holds his breath for several seconds, and then breathes out for several seconds. More radioactive rays get through the chest during inhalation because the lungs are filled with air and are less dense. When the patient exhales, the lung tissue contracts to expel the air and is more dense. Thus, less radioactivity passes through to be detected by the camera, which re-
The patient at far right stands with her back to the scintillation camera which detects the radioactivity that has passed through her chest. The source of the radioactivity is the disc held by Dr. B. Leonard Holman, a fellow in nuclear medicine. Another nuclear medicine fellow, Dr. Mustafa H. Adatepe, is seated at the computer panel (far left). Dr. Potchen is at his right. The interface, which converts the camera’s electrical information into numerical data, forms the upper portion of the compact computer apparatus.
New Detection Method
for Lung Diseases

cords the positions of the rays as they pass through the chest.

The electrical information from the camera is converted to numerical values by the interface so that they can be analyzed by the computer into measurements of the differences in density in a selected period of time for 64 regions of the lung.

The standard chest x-ray detects regional density—but only as it exists at the time the x-ray is taken. Chest fluoroscopy, another radiologic procedure, does indicate change in density. The disadvantage of both techniques, however, is that neither gives the radiologist any quantitative information. That is, the x-ray can show that one area is denser than another—but not how much more in numerical terms; fluoroscopy can show that an area has a greater density change in a period of time than another area—but not how much greater in exact figures. Consequently, the interpretation of these techniques is frequently difficult to assess. With the camera-computer method, however, the results are quantitative, and not as dependent on subjective interpretation.

"Our technique is similar to fluoroscopy," Dr. Potchen says, "but fluoroscopy requires more radiation, isn’t quantitative, and takes more of the physician’s time."

The equipment doesn’t require much space. There is the camera, interface and small digital computer which collects the data, sends it via telephone wires to a large IBM 360/50 computer on the main campus, and recalls the results, which are displayed on an oscilloscope screen. This display is a computerized “picture”—a mathematical visualization—of changes in density over the entire surface of the lungs.

Patients with normal lungs have given a fairly consistent “picture.” Considerable variations, however, have been found in patients with lung diseases. Emphysema patients, for example, show a grossly abnormal picture although the chest x-rays may look normal.

"The routine chest x-ray is not good for diagnosing emphysema," Dr. Potchen says. "The lung of the emphysema patient transmits the x-rays as does the normal lung. But if you measure the ability of the lung to change in density during respiration, the lung with emphysema doesn’t empty the air as fast. Our study during respiration should be able to pick up emphysema that can’t be diagnosed on the routine chest x-ray."

Dr. Potchen described one emphysema patient who showed no density changes on an x-ray, but on whom the computer technique picked up some lung regions that were nine times the mean density change, whereas normal lung areas have never been greater than four and a half times that value.

"We have never been able to diagnose emphysema early," Dr. Potchen says. "By the time it has been diagnosed, the symptoms already are apparent. It would be helpful to diagnose patients in the presymptomatic stage. Then we could learn more about the disease."

He adds that emphysema of the large single bullous type can be picked up with the camera-computer technique. This type can be treated with surgery.

Dr. Potchen also hopes the technique will be useful in the early detection of lung cancer, which claimed approximately 55,000 lives last year in the United States and ranked as the leading cause of cancer death in men. One of the most difficult aspects of the lung cancer problem is the lack of effective ways to detect it at an early stage—early detection is the only chance of cure.

"There are patients who have some types of lung cancer predominantly located in the large bronchi in the middle portion of the lung," he says. "The chest x-ray cannot detect these cancers early, not until they are
After the information from the scintillation camera is analyzed, a computerized "picture" of the mean change in lung density during breathing and the percentages of deviations from that value is flashed on an oscilloscope screen. The "picture" at left of normal lungs differs considerably from that of an emphysema patient (right), which shows the abnormal areas that are not contributing to density change.
New Detection Method
for Lung Diseases

very large or cause disease beyond their original site.

"Such a cancerous lesion would be expected to distort
the air exchange in surrounding regions, distortion which
our technique should detect."

Dr. Potchen points out that this technique isn’t in-
tended to replace the x-ray, believing that it could be
used best to screen patients for lung disorders. A familiar
screening comparison is the chest x-ray bus which can
check many persons in a relatively short time. Fluoro-
scopy, on the other hand, is a more complicated procedure
which can’t be performed easily as a screening test in
every patient.

"Ours is a simplified test that everyone can do on a
wide basis for a large number of the population," he says,
adding that there are companies interested in making
the instrumentation available for commercial use.

Dr. Potchen plans to use the new technique to study
normal lung physiology and the effects of posture, breath-
ing rates and depths on lung function. The results will
be correlated with those of other studies which use the
same basic setup but a different source of radioactivity.
Instead of a radioactive plastic disc, the latter studies
use xenon, a radioactive gas, which either can be injected
into or inhaled by the patient. The scintillation camera
detects the xenon as it reaches and subsequently leaves
the lung during respiration. The computer determines the
rate at which this is done for 64 lung regions. These com-
putations indicate the amount of blood and air reaching
specific lung regions, and should open the door to physio-
logic studies not previously possible.

"If we can study regional ventilation in this way," Dr.
Potchen says, "then we can identify those people who
have air but not blood reaching an area of their lung.
This would be helpful in distinguishing a blood clot from
other conditions that involve abnormal blood flow. For
example, air can reach the lung despite a clot, but can-
not reach an emphysema-stricken area.

"You can’t tell these two conditions apart with a lung
scan (a widely-used diagnostic procedure in nuclear
medicine),” Dr. Potchen says. “We have been able to
make the distinction with the xenon technique."

It’s an important distinction because a pulmonary em-
bolism (blood clot in the lung) is the most common cause
of death among people whose conditions were not diag-
nosed correctly before they died. “This is the most im-
portant undiagnosed disease in medicine,” he says.

The diagnostic improvements that this method should
help bring about are examples of the advances that have
taken place, during the last decade particularly, in the
application of nuclear radiation to medical research and
care. Such development of the potential of the atomic
particle has resulted in the relatively new specialization
of nuclear medicine.

Nuclear medicine at Washington University reflects
the overall growth that the field enjoys. Within the past
three years, it has been given division status within the
department of radiology and expanded substantially in
personnel, equipment, and space.

Dr. Potchen, who came to the University in 1966 from
Harvard University where he was director of the nuclear
medicine division at the Peter Bent Brigham Hospital,
also has worked with federal projects to bring medical
advances to other countries. Last year, for example, he
and another colleague in the radiology department par-
ticipated in the Atomic Energy Commission’s “Atoms in
Action” program, for which he spoke to medical audiences
in Taiwan and South Korea.

“Nuclear medicine,” he says, “is probably the fastest
growing field in relation to patient care and new tech-
niques of diagnosis. It’s a peaceful use of atomic power.”
In the Beginning, God

In the Beginning was Edward Kennedy Ellington, son of a part-time White House butler, one-time art student, erstwhile stride pianist. Edward Kennedy Ellington began to forge his dukedom in the nineteen-twenties at the Cotton Club in Harlem, where his first band began to produce the sounds that slumming parties from downtown called "jungle music."

In the intervening forty years, Duke Ellington has profoundly inspired, influenced, and shaped the path of jazz. And not just jazz: there's more than a deep suspicion that Duke Ellington is, in fact, the most important contribution America has yet made to music—any kind of music.

Duke Ellington first came to Washington University in 1967 to receive an honorary Doctor of Music degree. Yale also gave him one a week later, but both universities were at least twenty years late in getting around to it. Duke returned to the campus this spring to present his sacred music concert, "In the Beginning, God," as the culmination and summation of a year-long series sponsored by the Student Academic Committee and several other student groups. Called "The Mystery of Man," the series was dedicated to a "continuous exploration of contemporary theological and philosophical questions." It brought
to the campus many distinguished theologians and philosophers, not the least of whom was Duke Ellington.

The concert, held in the Quadrangle, blended orchestra, chorus, vocal and instrumental soloists, and dancers in a stirring evening of lyrical prayer, solemn reverence, thundering "fire-and-brimstone serenades," and joyous, swinging hymns of praise.

Playing the piano, conducting the orchestra, beaming on the soloists, explaining bits of his credo, Duke Ellington was his concert. Yet, and this is true of the whole Ellington career, Duke Ellington is also his orchestra and his orchestra is an essential part of Ellington. It is his instrument, his voice, his palette. They were all there: Cootie Williams and his growling trumpet, Harry Carney and his booming baritone sax, Cat Anderson and his piercing horn—each with his own unique musical personality and each an extension of the Ellington genius.

The Washington University Choir was there, too, awed at first by the company they were keeping, but later relaxed and happy and fitting in perfectly. Bill Frank, artist-in-residence in the dance, was there with two of his talented students, leaping and floating across the stage in inspired visual interpretations of the Ellington sound.

The climax to the evening was "Praise God and Dance," based by the Duke on the 150th Psalm. Beginning relatively peacefully, it built and built momentum and excitement until everyone on the stage and in the audience was involved in a swinging, rocking hymn to joy. In its 65 years so far, Brookings Quadrangle has never seen anything like it.

As a most fitting encore, after the concert the student sponsors invited the audience to the Women's Building lounge for a brief birthday party for the Duke, who had incredibly turned 70 the week before. As a party, it could not compare, of course, to the famous White House celebration of Duke's birthday, but there was a duke-size birthday cake and there was the Duke himself kissing everyone he could reach "twice on each cheek." The building was jammed with young people—black and white, long-haired and crew-cut—filling the lounge, standing on chairs and window sills. But in this day and age, it was, of all things, a happy demonstration.

In the end, there was Edward Kennedy Ellington's summation of his own work, "Now I can say openly what I have been saying to myself on my knees."
In the Beginning, God

Cootie Williams, one of the featured soloists in the concert, first joined Duke Ellington in 1929. Critic Leonard Feather has described Williams as "probably the best all-around trumpet player in jazz."

Dancer Bill Frank, artist-in-residence, executes a joyful leap during the stirring finale of the concert, "Praise God and Dance." Frank came to the campus with MECA (Metropolitan Educational Center in the Arts).
Paul Gonsalves, who once broke up a Newport Jazz Festival with a 27-minute unaccompanied solo, adds his rousing tenor saxophone to the finale.

Susan Lynch, a member of Bill Frank’s MECA Dance Workshop, adds her grace and skill to the proceedings. In background, at the piano and apparently enjoying it all, is Dr. Ellington.
In the Beginning, God

Devon Gardner, one of the vocalists with the Ellington group, displayed amazing virtuosity. Her solos ranged from lyrical poems of reverence to swinging hymns that rocked the Quadrangle.

The Washington University Choir had an important role in the concert as a featured vocal group, as accompanists for the soloists, and even as a sort of Greek chorus intoning the word for "freedom" in twenty languages.
The Duke greets well-wishers at a birthday party after the concert. In the foreground is the giant birthday cake, bearing just one candle instead of the seventy Ellington is entitled to.

Duke Ellington and the Ellington Sacred Concert received a standing and wildly enthusiastic ovation at its end. Despite threats of rain all afternoon and a shower right before concert time, about three thousand persons filled the Quadrangle for the concert.
SMALL TOWN DOCTOR

A round Stanhope the central Iowa countryside stretches out almost endlessly: The farmhouse, its cupola barn, the silo, the door-yard stands of poplar or pine, are stepped off and miniaturized countless times across the vast horizon. For the first ten or twelve miles the road between Stanhope and Webster City lies along section lines like a starched ribbon, then it dips and turns into the valley which contains Webster City and the Hamilton County Public Hospital, standing with a florist's complex, and a cemetery at one end of the town of eight thousand population.

Dr. DeWayne Anderson drives the fourteen miles in sixteen minutes. His long day begins on the road to Webster City, where he will spend the morning seeing out-patients, making hospital rounds, perhaps performing minor surgery. About noon, he will head back along Iowa Highway 17 to his office, where patients have been arriving and will continue to arrive until the doors are closed at 5 p.m. There are days when other things interfere with the schedule. A woman calls saying she is in labor and Dr. Anderson heads back to the hospital. An emergency occurs which cannot be treated in his small clinic. An evening meeting of the seven-man medical staff calls him back to Webster City.

On the surface, the life of Dr. Anderson, a 1943 graduate of the Washington University School of Medicine, looks not much different from that of his city counterpart, general practitioner or specialist. But Stanhope has a population of 421 and Dr. Anderson is the only medical doctor within nearly fifteen miles of that community.

Gone are the days when babies were delivered in the bed where father was born or an appendix was removed or bones set on the big table in the farmhouse kitchen. But in this rural Iowa community and in hundreds of rural communities like it, the family doctor is much the same man he was when he drove a horse and buggy instead of a red Chevrolet. He covers more territory and he sees more people, but his personal store of family lines and family histories, his neighborly personal relationship with his patients, aren't diminished.

This is one of the first things the people of Stanhope and Webster City tell you about Dr. Anderson. He knows his patients thoroughly, and he really cares about them. A pig-tailed blonde technician in the laboratory at
For a while, Dr. Anderson used a citizen’s band short wave radio to connect his car, office, home, and drugstores in nearby towns, but he says, "It's gotten so darn busy on the air, you can't get a word in edgewise, anymore."

"You know," Dr. Anderson says philosophically, "we feel so inadequate here sometimes. We transfer patients to clinics in Fort Dodge and Ames, and the people there are good, but it's not like being able to take care of your patients yourself."
Even a small town doctor makes few house calls nowadays, Dr. Anderson says. His associates say he makes quite a few.
Many rural communities which once had doctors, don't have them today. The Andersons had a difficult time finding a qualified pharmacist to operate the drugstore they inherited. Mr. Gandrup, a retired pharmacist, now comes over from his home town every day.

The hospital says that to Dr. Anderson it doesn't matter whether the patients are his or whether he was called to treat an emergency, he's concerned about them. "He's here Saturdays, Sundays, holidays, every day. But that's just Dr. Anderson. He couldn't be any different." And a nurse relates that his patients say they may wait hours in his waiting room "but once he sees you, he sits and really talks to you." "Around here," she adds, "he keeps everyone's morale up. He's my psychiatrist. He's everyone's."

That burden does not sit lightly on the thin, sloping shoulders of this slight man. For him life as a small town doctor isn't idyllic, simple, or pure. It is simply a way of life that he wouldn't, he couldn't, give up. He questions its value; he wonders what has become of it and what's to become of it, but these are questionings of himself, his private concerns and fears. "This old business that you can do better work in the office or the hospital than at home is a lot of bunk. But I'll tell you, you just get so you run out of not only time, but steam. I'm not that old, 49, and I don't know—maybe it's psychological—but I can't do the work I used to be able to."

"It's getting so that the small towns won't have any doctors pretty soon, but with transportation the way it is, I don't know that that's so bad. Things are just changing and some of the changes are bound to be for the better and some for the worse. Sometimes I'm not sure that we're really providing good care, because these days one man can hardly keep up."

These are his words, but everything about him, his actions, his relationships to patients, relatives, staff, colleagues, townspeople, belies the pessimism he seems to expound. It is impossible to miss the deep respect and abiding fondness that express themselves in everyone's comments—from the quick "You picked some man to follow," which comes from one of the hospital cooks, to "If you come to any conclusion but that this is the greatest man on earth, you're wrong," said by the hospital administrator.

But Dr. Anderson is a realist. It is the stark realism of a man who has been on intimate terms with human grief and pain and foolishness, human sacrifice and heroism for twenty years. "Sometimes," he says, "I get so frustrated, so mad at people, I can't see straight." But he
SMALL TOWN DOCTOR

also says, "I don't know. There is no explaining the limits of people's patience."

Dr. Anderson grew up in Stanhope, which hasn't changed much in size since he was a boy. His parents owned the town drugstore and, when his father died, his mother took over the business.

He took his undergraduate work at Iowa State College in nearby Ames and, upon recommendation of a professor, applied to the Washington University School of Medicine. He retells his surprise at being accepted. "Even then Washington was one of the top schools and I just was surprised that I was going to go there. But I loved the place. There was always an atmosphere of the earnest academic about and it was so darned challenging."

Dr. Anderson was graduated from medical school in March, 1943. After a nine-month internship at City Hospital he went into the service. He returned to St. Louis two and a half years later to do a second internship at Lutheran Hospital. There he met a pretty blue-eyed nurse, and they were married within the year.

In 1949, the Andersons returned to Stanhope and Dr. Anderson set up practice in offices above the drugstore, with his wife as his nurse. After fifteen years, Stanhope had had enough of that, so the townspeople raised $40,000 by private subscription and built a clinic. Dr. Anderson shares the building with the new town dentist.

Dr. Anderson leaves Stanhope about 7:30 on weekday mornings, but at 10 a.m. his nurse of fourteen years, Mrs. Laura Samuelson, opens the doors to the clinic. He takes no appointments. The door is locked at 5 p.m., earlier if the waiting room is already full, but everyone knows that the back door is open for emergencies. There is not a day without an emergency, so although the capacity of the waiting room is fifteen, the back door seldom closes on the weary physician before 7 p.m.

During Dr. Anderson's eleven-hour working day, the pace is hectic, but seldom hurried. Although the four-story hospital has an elevator, Dr. Anderson seldom waits for it. He scurries up and down the stairs a dozen times during a morning. He scurches down beside the nurse's desk to write orders on a chart or leans over a microscope in the hospital laboratory, never taking time to pull up a nearby chair or stool. Indeed, during the day, he seldom sits down. He hurries from building to car and drives the familiar roads at nothing less than sixty miles an hour. But with a patient, the pace abruptly changes. It slows to the tempo of a chat, as though there were no waiting room with people, no demanding telephone, no house calls or nursing home visits to squeeze into the schedule.

He bends over an 87-year-old woman, hospitalized because of an injured knee, checking her respiration and heart beat, looking in her eyes, taking her blood pressure with equipment he has pushed into the room ahead of him. Throughout the examination, he talks in a quiet voice about how she feels, about her family, about her going home today.

In the hallway, as he looks over the chart of his next patient, he talks about the patient to a sandy-haired nursing supervisor. The conversation continues down the hallway, breaking off abruptly as Dr. Anderson strides into the next room with a hearty "Hi, Ethel." His progress through the hospital is far from linear. Ten, fifteen times during the morning his rounds are interrupted by the call, "Dr. Anderson, Dr. Anderson," over the intercom.

A three-month-old child arrives in the hands of strangers who have been flagged down on the street by a frantic baby-sitter. The infant is in convulsions. Dr. Anderson and the nurse work quickly to give oxygen. He waits and watches. As he leaves the child in the hands of the nurse, he stops at the desk to ask the switchboard operator to get the baby's grandfather, who might be able to locate the absent parents.

The incident illustrates one of the facts of Dr. Anderson's life and practice. As a small town doctor, his store of built-in knowledge about almost everyone in the community is limitless. The couple who drove the baby to the hospital knew only that it was one of the "Jones babies." This fragmentary bit of information triggers in Dr. Anderson's recollection an almost complete family history. The occurrence is so common that he thinks it not exceptional that he could say, a few minutes later, "I don't know. I'm worried about that baby. It's one of triplets born in the Iowa City hospital about three months ago. Its parents are both subject to epileptic seizures. I just talked to the grandfather; he doesn't know how to get ahold of them. They went shopping and left the kids with an aunt. She hasn't got a phone. What
I'm worried about, too, is the family. The grandmother died a few months ago and she was the real mainstay.

Dr. Anderson returns to his hospital rounds, checking again on the baby before going to the hospital's small cafeteria for a quick lunch, but after a few bites he sets his lunch aside and lights a cigarette, one of a chain he smokes during the odd moments of a day. Someone asks if he is ill. "Well, I guess I'm sort of put off by that baby," he replies.

At about 12:30, he leaves the hospital to make a house call in Webster City, but his Chevy pulls into the hospital driveway again at 1:15. He checks once more on the infant before proceeding to his office. The child is somewhat better, but the parents still have not been located. "I don't like the idea; that baby may die," he remarks, "but, I guess, that's the way life is now. Sort of scattered."

By the time Dr. Anderson arrives at his office, a penned sign is taped to the front door: "The doctor has all the patients he can see today. Please come back tomorrow." Patients who come for routine shots, to have blood tests made or stitches removed will use the left hand door to the building, which technically leads into the dentist's office, but, in fact, opens as well into the doctor's office. They see Mrs. Samuelson and, unless she has some concern, are not referred to the doctor.

Meanwhile, before the "first" patient is admitted, little things must be taken care of. On one day these might amount to three emergency patients and a dozen telephone calls. These telephone consultations come in all morning and afternoon. Mrs. Anderson, who returned to work in the office three years ago when her daughters reached high-school age, and Mrs. Samuelson handle routine inquiries, but people feel better if they've talked to the doctor, so nearly everyone does.

The afternoon calls are squeezed in between patients. In that brief minute or two while a patient is undressing for an examination, Dr. Anderson steps into his office to take the phone. He draws his left shoulder up to cradle the receiver as he listens and reaches for a cigarette. He nods to the caller's explanations. "All right, Harold," he says, finally. "Tell you what you do. You take that medicine I gave you down to Mr. Dorris (the druggist in nearby Jewell) and tell him to give you more. If there's

"Seems we have lots of old people," the doctor comments, "but generally they are pretty independent. It's hard to keep them down in the hospital sometimes, and most of them don't like the idea of having to stay with one of their children for a while once they get out."

The doctor delivers about thirty-five babies a year, but says, "We may as well give up surgery and obstetrics for all we do. We can't keep a surgeon or pathologist. They go to the cities. They come over some when they start out, but eventually give us up."
Dr. Anderson, his wife, their two daughters, two dogs, a cat, and a fourteen-year-old school carnival water turtle live three blocks from main street in a ranch-style house which overlooks broad farmlands the town was built to serve.

Mrs. Anderson occasionally steps out to chat with patients in the waiting room. Though people may wait several hours, almost no one reads the many magazines available. Instead they visit with friends and neighbors.
any question you have him call me. And Harold, you're staying off the beer these days, aren't you?"

The story goes that when DeWayne Anderson first returned to Stanhope as a doctor, the idea took considerable getting used to for the oldtimers. “Most of them remembered him as a real hellion,” a colleague says. “And I guess he was, too. And most of them swore that they couldn’t ever see him as the doctor. But since pretty nearly everyone in town is a patient now, I guess they got used to it.” “Or died off,” Dr. Anderson adds.

On Stanhope’s five-block main street everyone calls “Hi, Doc” to him across the street or from passing cars. Most people remark the rarity of seeing him during an afternoon in such strange territory as the cafe two blocks from his office. “Must be some occasion to get you out of the office, Doc,” says the cafe owner. “It is, Minnie,” he answers, “but I have to see to it that you folks don’t manage to get along without me for too long.”

Stanhope, Jewell, and Stratford do get along without Doc Anderson every summer for two two-week periods. That is the inviolable tradition in the Anderson family. One period they take their camper-trailer down to Southern Illinois to visit Mrs. Anderson’s folks, and the second they spend at their favorite Minnesota lake. Each year, Dr. Anderson also leaves his patients for a few days to take a refresher course for general practitioners given at the State University of Iowa.

In many ways, Dr. Anderson’s practice operates on unwritten understandings. Everyone knows and goes along with the subterfuge of the locked front door. They know about vacations without being told. And no one has to ask, either, about money. A while ago, the charge for an office call went from $3 to $4. Patients pay as they leave the office or they don’t. No one asks them if they will or not, or reminds them to, though Mrs. Anderson does sometimes remind patients whose unpaid bills are “getting pretty high—$1000 or so.” Statements go out surely once a year, when Mrs. Samuelson catches up while the Andersons are on vacation. And about as many people don’t pay the doctor as do, which is probably because Dr. DeWayne Anderson is Dr. DeWayne Anderson. “My feeling is,” he explains, “that they’ll pay eventually. I understand. Paying medical bills when you’re well is like paying for a dead horse. If you’re living well and can meet your expenses, why worry?”

Dr. Anderson is physician to the high school football team. “They haven’t much choice,” he comments, “I’m the only doctor in town.”
THE STUDENT PHOTOGRAPHER

Presented on these pages is a sampling of student photography. Each of the pictures was taken by a student in Herb Weitman's photography class in the School of Fine Arts. To arrive at just these examples from the hundreds and hundreds of pictures the students took during the two-semester course, there was first a preliminary selection by Herb, aided and abetted by members of the class, to choose some thirty-one photographs to hang in the annual May Student Art Show at Steinberg Hall.

From those thirty-one photographs, a jury of two—consisting of the editor and the designer of this magazine—chose the ten reproduced on these pages. The jury decided that the best of the lot was "The Woman in the Window," by Leslie Newman, which also appears on the cover.

Herb Weitman's photography course is offered for juniors in the School of Fine Arts. Nearly all of the students are design and illustration majors. According to Herb, the great majority of the students in this year's class had never taken a photograph—or at least nothing more than a family snapshot.

The students work exclusively in the 35mm format, and all of their experience is with modestly-priced equipment. The students not only take their own pictures but also develop and print them at the School of Fine Arts.

The pictures displayed at Steinberg and in another larger exhibit at Mary Brooks Holmes Lounge constitute, in a way, the student's final examination. Looking at the results, Herb Weitman remarked, "You know, this is very good work, and the best part is that the students were not just trying to imitate. The work is original and different and seems to express the students themselves."
By Ginny Prince
Dr. Joseph R. Rosenbloom has combined a number of careers. As a rabbi he has served congregations in St. Louis and Lexington, Kentucky. He has taught at the University of Kentucky and is now a lecturer in the Classics Department of Washington University. While in Kentucky he also served as a chaplain at the Federal Narcotics Hospital, the largest institution in the world for the treatment of drug addicts. It is out of this experience with drug addicts and students that he writes this article. Other publications of his on drug addiction have appeared in Psychological Reports, The Reporter Magazine, Jazz Review, the Kentucky Law Journal and Focus/Midwest.

YOUTH AND THE DRUG SCENE

Parents are deeply concerned about youth. And they well might be. Seldom have the generations been more estranged. Youth illustrate in many ways disdain for their parents, the authority of our nation, and the values for which our society seems to stand. They indicate this through their dress, which symbolizes their rejection of society, and their general rebelliousness against all control. It is seen in their anti-Vietnam protests and their anti-draft activities. They demonstrate their will most directly on college campuses in sit-ins, in passive and violent demonstrations against the authority and the general operation of our universities. They are opposing academic procedures and administrative practices.

There are also a number of general social trends in our nation which have led our young people—college students and, increasingly, high school students—to challenge much of what our society stands for. One of the crucial factors may be found in the teaching methods. There is far more openness. Students are encouraged to search for interpretations and answers, without traditional barriers. They are also trained within a framework determined by science. The impact of an approach which has as its basis the search for understanding without allowing any presuppositions to stand in the way is dramatic. They are taught to discover the components of nature and society, what comprises them, how they work, how they interact. This understanding is sought so that they may better understand themselves and their world, but also in order that they may manipulate the world in which they live to make things of better quality and in greater quantity.

To operate successfully in a scientific milieu, our society has discarded many of the traditions and myths of the past, as well as society's dependency upon supernaturalism which great segments of our population turned to in the past and on which whole cultures have been based.

This has led to the hallmark of modern society which has reached its peak in the United States: that everything is open; that what was believed yesterday, or handed down the day before, is likely to be disproved today and replaced again tomorrow. The search for new truths has provided man a frame of reference which views the past as a partial guide, though certainly not authoritative. Change, experimentation, pragmatism, are the major motivating forces. This orientation permeates not only the student's work in his laboratory and other classes, but his entire life.

While these themes and this frame of reference are essential to operate our highly technological and computerized society, they have had dramatic social consequences. Nothing handed down from the past is accepted per se. Nothing is accepted simply because parents believe it or society cherishes it. All values are to be challenged. Our young people are not innovating in their rebelliousness as much as they are reflecting the modern culture that began in western Europe and developed and intensified in the United States.

In addition to this general cultural setting, young people have been faced with the apparent failure of American idealism. In their studies of American history and American society, they once believed, or were taught to believe, the ideals of America as found in the Declaration of Independence and in our Constitution. These ideals which led the “founding fathers” into a revolution against the British were viewed as worthy of sacrifice. The youth of today now find themselves faced with the fact that their nation, promoted as the outstanding democracy of the world, supports dictators and suppresses revolutionary movements. They wonder how they can be part of a government that appears to be so hypocritical. How, they ask, can they join an army which they see as denying
revolutionary aspirations similar to those upon which their own nation was founded?

They also see the failure of American idealism amid the racism of our nation. They see this not only in society but also in the attitudes and behavior of their parents.

Finally, there is the war in Vietnam. They do not understand why this war is being fought. The only conclusion they have been able to reach, through the succession of events over the past several years, is that our nation is fighting to support a corrupt government, and they are being called to join an army to destroy an authentic national movement. This has led many, in growing numbers, to become conscientious objectors. Many more feel forced to manipulate their lives in order to stay out of the army by remaining in school and pursuing courses which really don't interest them, by taking work in deferable occupations, and by other evasive activities. None of this bodes well for the future of this particular generation, since young people are spending some of their most creative years in the defensive manipulation of their lives while developing a very low estimate of their own nation.

A symptom of their rebelliousness and their loss of faith is their increased and increasing use of drugs. These drugs are considered harmful by many authorities. Regular use of them is very upsetting to most parents, whose fear has been conditioned by a society which is extremely hostile to what are considered "dangerous" drugs. Parental anxiety is also partially based on a lack of understanding of drugs, their effect, and why they are used.

The drug which is most widely used is marijuana. It is a weed which grows easily in most parts of our country although the highest quality marijuana comes from Mexico. Because its use is illegal, it is usually imported from Mexico, where it grows freely. It is known by other names as well: "tea," "hemp," "maryjane," "weed," "pot." While it is usually smoked, it may also be brewed in water and drunk as "tea."

There are no accurate or authoritative statistics on the use of marijuana. However, all students with whom I have spoken say it is used on their campuses, both large metropolitan and state universities and small colleges tucked away in the nooks and crannies of the Midwest. Its use appears to be much higher in areas where the
derivatives, such as heroin and morphine, are seen as escape reality, to allay the anxieties of the human situation are addicted to smoking cigarettes and drinking alcohol. Others are addicted to barbiturates and tranquilizers.

The type of drug or agent that anyone of us uses will depend upon availability and individual need. Obviously, in our society more people will turn to alcohol, a depressant drug, rather than to heroin, which is an opiate and also a depressant. Heroin is illegal, very expensive, and very difficult for most people to obtain. Alcohol is legal, socially acceptable, and relatively inexpensive. More than five million Americans are addicted to alcohol and only some 100,000 to opiates. Drinkers of alcohol have rationalized their addiction by making the use of alcohol legal. The one attempt to prohibit alcohol ended disastrously.

Addiction ought to be seen as a continuum. It may be defined as any compulsive activity which provides release for inner anxieties. As anxieties increase, so the addicting agent may be changed to one that is more powerful. The use of any agent or any activity which is engaged in compulsively and releases inner anxiety may be seen as an addiction. Those people who compulsively read or compulsively watch television or compulsively play chess, are addicts. Millions of people in our society are addicted to smoking cigarettes and to drinking alcohol. Others are addicted to barbiturates and tranquilizers.

These addictions are generally accepted by our society. For cultural reasons the persons addicted to opium or its derivatives, such as heroin and morphine, are seen as drug fiends. But the alcoholic, who often does serious harm to himself and to others, is more favorably characterized. Marijuana, because it is illegal and because it is frequently distributed through the same channels that distribute opium, has been placed in the same frightening category as the opiates.

One may ask why it is that so many young people have turned to smoking marijuana rather than to drugs used by their parents—that is, alcohol and cigarettes. First, we must make absolutely clear that far more young people, both high school and college students, drink alcohol and smoke tobacco than use marijuana.

On the other hand, many of them out of rebelliousness seek to do just what their parents are not doing. One way of rebelling against parents and against the so-called adult society is to do something that will upset them. While some parents might become concerned if their children smoke cigarettes or drink alcohol, they often panic when their children smoke marijuana. Marijuana smoking is forbidden and it readily symbolizes in the eyes of young people a rebellious act. Therefore, when they smoke marijuana or use another drug, including LSD, they know they are rebelling. They know that their parents will react violently. They know that they can turn their parents on this way. While far more students drink alcohol and smoke cigarettes, they do so for appearance's sake and because these are readily available. But such smoking and drinking seldom worry parents, who often supply both cigarettes and alcohol. On the other hand, many young people smoke marijuana because their friends smoke it and they enjoy its effects.

What of the effects of marijuana? It must be pointed out initially and forcefully that one of the problems connected with the use of marijuana and one of its possible dangers is that there is a wide variety in the quality of marijuana and in its effects. The quality depends upon where it is grown, its preparation, and the part of the plant that is being used for smoking. Though alcohol also affects people differently, the differences are accentuated with marijuana since there are no standards for its preparation. It is a moderate hallucinogenic, distorting the senses and depth perception. A person tends to become giddy. Most experiences seem to be intensified.

Those who smoke marijuana gauge their intoxication in two stages. When they become "high" they are somewhat silly, a state roughly equivalent to that acquired by drinking two or three martinis. Beyond this, they are "stoned," a trance-like stage where they simply like to sit back and enjoy themselves and their own thoughts. Many smokers of marijuana say that after they've been "stoned" and fall asleep, they wake up feeling depressed. Unlike alcohol, however, there is no hangover as such.

One of the dangers of the relationship between youth who use drugs... and their parents is that youth alone is considered wayward and at fault. Perhaps it is the parents who are wayward."

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to require something stronger, any more than the person who smokes cigarettes will have to have something stronger, or the person who drinks alcohol will be driven to use another drug.

There are dangers in four areas, however, for the person who smokes marijuana. First, because marijuana is available only through illegal channels, the people dealing in marijuana often handle other much more profitable drugs which they can peddle in smaller quantities. Therefore, the person who handles marijuana may also sell other drugs which he will often recommend or promote for greater profits for himself. Second, young people by their very nature experiment. With the availability of other drugs in the same channels as marijuana, they are more likely to try them. Third, the young person who is highly neurotic or highly rebellious or more anxious than the average student is also more likely to go on to other agents which alter his conscious state more dramatically than does marijuana. Finally, the use of marijuana is illegal, and getting caught can have harmful effects on a young person’s future.

The dangers, therefore, are not in the marijuana itself, but in the facts that its use is illegal and that many persons who use it are quite disturbed psychologically.

Another question that is frequently asked is whether marijuana is addicting. The definition of addiction provided by the World Health Organization is, in short, any compulsive activity which is replaced by physical symptoms when it is stopped. Accepting this definition, smoking marijuana is not addicting although it may be habituating. A person may become used to smoking because he enjoys it and so continues to do so regularly. But it is not addicting because the individual who has smoked marijuana for an extended period of time will not suffer any physiological pain should he stop smoking. This is unlike the heroin addict, who suffers considerably both psychologically and physically, when cut off from his supply, or the alcoholic who suffers delirium tremens and hallucinations when alcohol is no longer available to him.

Among the other drugs which young people are experimenting with are LSD and the amphetamines. LSD is an hallucinogenic which produces a mild schizoid-like state. While it is one of the weaker hallucinogenics, there is a danger that under the influence of LSD a person may have an emotional experience or recall memories which he cannot handle and which will be so threatening that he will harm himself. On rare occasions a person who has used LSD will have frightening, spontaneous recurrences of the LSD “trip” even when he is not using the drug. There is also some research indicating possible genetic alteration caused by the use of LSD.

Other drugs in rather common use are the amphetamines and methamphetamine. These drugs tend to speed up one’s activities. They are stimulants and are not related in any way to the opiates or to marijuana. They are simply other agents which young people and others use to alter their conscious state.

There is a movement afoot to legalize marijuana. Many feel that its lawful use will simply come as a matter of course, that its availability and common usage will legalize the practice. In some urban centers, particularly in places like New York, San Francisco, and Los Angeles, one almost has the feeling that this has already come about.

One of the dangers of the relationship between youth who use various drugs and engage in other rebellious acts and their parents is that youth alone is considered wayward and at fault. Too often, parents will not see their children’s activities as symptoms. Perhaps it is the parents and the adult community who are to a great extent responsible. Perhaps it is parents who are wayward. Too many parents believe in giving their children things rather than themselves. Their children want not money or objects, but interest and friendship. There are also many parents who have great difficulty in saying no to their children. They have so much that they feel guilty denying anything. They are afraid to punish their children. They rationalize by saying modern parents simply cannot discipline today’s children.

Many persons, however, believe that young people value justified punishment as a sign that parents are really interested in what their children are doing. If a child is not punished when he feels punishment is due, he may develop a feeling of guilt which is difficult to bear. Young people can get along fine without many of the trinkets parents feel they must have, but the one thing they cannot live without is the interest and the love and the care of their parents. The crux of the situation rests in the standards set by parents and the adult community. The pattern is set very early in life. Repeatedly our more articulate young people tell us how vain it is for parents to try to instruct, when their very action is contrary to what they are saying.

It is not trite to say “Don’t say one thing and do something else.” This is still one of the operating principles for young people. Every child needs an ideal and, whether parents like it or not, they are the models. It is for this reason that parents ought to choose values carefully. The easy, the readily available, the superficially attractive, are usually not so valuable as they seem. Setting an example takes time, effort, and heartache, but it is crucially important.

A relationship between child and parent can be developed only through patience and honesty and love translated into action. Our youth is gifted, perhaps more than youth at any other time in the history of mankind, with a desire to search and strive for a way to live. Only parents can provide this way. If our children, our young people, are wayward, if they seem to be without a firm, definite path, the fault is ours. We must give of ourselves, our time, and our energies to set the path for youth.

Considered within this framework, the use of marijuana and other drugs is symptomatic of profound problems. Passing more laws and increasing punitive activities will solve none of our real problems. Only by facing problems honestly and openly can they be resolved.
At today's university, in-residence programs are often used as a means of bridging the physical gap between the academic and the real worlds. Last fall, however, the Department of English used this common method in an uncommon way. Six American writers—three poets and three novelists—were invited to come to the campus for periods of from three to four weeks throughout the year. Each lived in the home of Daniel Shea, an assistant professor of English who was on leave for the year. The fact that the house was within walking distance from the campus enriched the program manifold, for students and faculty members sometimes walked over for a talk with the visitor, or the visitor came over to campus to keep office hours in addition to the class appearances, readings, formal lectures, and conferences which were a regular part of his schedule.

Jarvis Thurston, chairman of the department and a personal friend of many of the writers, commented that "each visit was long enough so that anyone who wanted to talk to the writer could, and yet we covered a wide range of talents and interests."

"It was a bit grueling for the hosts, maybe," he added, "but continually exciting."

At the end of the year students delivered a petition to the department, thanking members for their part in the program and for the program itself.

From "Pricksongs & Descants"

We, too, seem to be standing at the end of one age and on the threshold of another. We, too, have been brought into a blind alley by the critics and analysts. We, too, suffer from "a literature of exhaustion," though ironically our non-heroes are no longer tireless and tiresome Amadises, but hopelessly defeated and bedridden Quixotes. We seem to have moved from an open-ended, anthropocentric, humanistic, naturalistic—even to the extent that man may be thought of as making his own universe—optimistic starting point to one that is increasingly closed, cosmic, eternal, supernatural, in its soberest sense, and pessimistic. The return to Being has returned us to design, to microcosmic images of the macrocosm, to the creation of beauty within the confines of cosmic, or human necessity, to the use of the fabulous to probe beyond the phenomenological, beyond appearances, beyond randomly perceived events, beyond mere history. But these probes are, above all, like your knight's sallies, challenges to the assumptions of a dying age, exemplary adventures of the Poetic Imagination, high-minded journeys toward the New World, and never mind that the nag's a pile of bones.

Robert Coover in a dedicatory letter to Cervantes which is part of his soon-to-be published book of stories entitled "Pricksongs & Descants."
Encounter in the Cage Country

What I was would not work
For them all, for I had not caught
The lion's eye. I was walking down

The cellblock in green glasses and came
At last to the place where someone was hiding
His spots in his black hide.

Unchangeably they were there,
Driven in as by eyes
Like mine, his darkness ablaze

In the stinking sun of the beast house.
Among the crowd, he found me
Out and dropped his bloody snack

And came to the perilous edge
Of the cage, where the great bars tremble
Like wire. All Sunday ambling stopped,

The curved cells tightened around
Us all as we saw he was watching only
Me. I knew the stage was set, and I began

To perform first saunt'ring then stalking
Back and forth like a sentry faked
As if to run and at one brilliant move

I made as though drawing a gun from my hipbone, the bite-sized children broke
Up changing their concept of laughter,

But none of this changed his eyes, or changed
My green glasses. Alert, attentive,
He waited for what I could give him:

My moves my throat my wildest love,
The eyes behind my eyes. Instead, I left
Him, though he followed me right to the end

Of concrete. I wiped my face, and lifted off
My glasses. Light blasted the world of shade
Back under every park bush the crowd

Quailed from me I was inside and out
Of myself and something was given a life-
mission to say to me hungrily over

And over and over your moves are exactly right
For a few things in this world: we know you
When you come, Green Eyes, Green Eyes.

Herbert Gold has written a number of novels, short stories, and essays. His novels, which include *Fathers*, *Salt*, and *Birth of a Hero*, have won critical acclaim.

From "The Great American Jackpot"

Smokey dust of the ghetto radiated its deep fry smells into the yellow-gray evening sky. There was a hurrying crowd down the middle of the sidewalk. On the edges of the walk, at the curbs and storefronts, these who had no jobs—the strollers, the con experts, the welfare artists, the numbers runners, the gimmickers and relievers—stood, loafed, watched, waited. In front of the shops, white owners warily surveyed the street for customers or trouble. Jarrett shoved Al through, thinking about the work ahead. The hardware shop window displayed the Magic Hour four-piece cocktail set in pink and the home bartender set in eight pieces, and a wastebasket with brass eagle, $4.95. Then there was the small, fine Zion Baptist Establishment Church, a white storefront, "Death is a waited hour of triumph, not of grief." Hiroki Japanese Store and Restaurant. Cosy Cottage Beauty Salon, Mrs. Jose Devin, Prop. Ivory Coffee Shop.


A girl in a flannel skirt down to her ankles was staring into the window of a shoe repair. A shoe repair, watch repair, head repair—shave or shampoo. American Market. "No Jews, they mean," said Jarrett.

There was the girl in a long flannel gown strolling and dawdling. "Not a Moslem," said Jarrett. "A nut. They go out of their heads. Brain damage at birth, no pre-natal care, lousy interns, brain damage all their lives. They are not upward bound."

There were businessmen from the junk shops, the markets, the cleaners locking up the iron gratings or sitting and staring out into the street, or selling the liquor or wine in the gala gift wrap, a paper bag. An awning said "Club Flamingo," but the sign on the door said "Congo Club" and an older painted inscription in the glass said, "Hickory Bar-b-que." A poster showing a grinning rancher in Palm Beach suit. Many teeth. "Follow the man in the white Stetson hat, the Texas Playboy, for fun and frolic."

FROM “WILLIE MASTERS’ LONESOME WIFE”

No one can imagine simply, merely; one must imagine within words or paint or metal, communicating genes or multiplying numbers. Imagination is its medium realized. You are your body—you do not choose the feet you walk in—And the poet is his language. He sees his world, and words form in his eyes just like the streams and trees there. He feels everything verbally. Objects, passions, actions—

I myself believe that the true kiss comprises a secret exchange of words, for the mouth was made by God to give form and sound to syllables; permit us to make, as our souls move, the magical music of names; for to say “Cecilia,” even in secret, is to make love. How could the gentlest tremor of lips cause a weakening of limbs, surrender in Sampson, if they did not compose a communiqué of passion? Consequently, since our thoughts are words in motion, our memories reserves, our reason regulations for their good and strong employment, the lips that lend expression to the mouth, and the mouth that gives them tongue, empower our mind, and send it larger to the world. Henceforth, any intercourse of lips, already a well conceived synecdoche for sex, should be further and more completely understood to be a sweet conclave of heads, and a kind committee in meeting.

I’m only a string of noises, after all—nothing more really—an arrangement, a column of air moving up and down, a queer growth like a gall on a tree, a mimic of movement in silent readers maybe, a brief beating of wings and cooing of a peaceful kind, an empty swing still warm from young bloomers. . . . Imagine the imagination imagining. . .

“Even the Most Beautiful Sunset Is Boring in Three-Quarters of an Hour”

We sat on the deck of a celebrated decorator as the sun declined and fell to its customary ruin.

“A little applause;” you drawled, as it finally disappeared, “might bring it back up, seeing how well-rehearsed the performance was.”

“Recapitulate—I dare you—the progress of French landscape,” our host exalted, “from Boudin to Bonnard faster than that!”

certain that the sun had been trained in the greatest ateliers to gain such maîtrise where all of Europe’s scholars drew—a blank.

“Or else, I should say,” I said, “the sun had seen far too many Japanese movies for its own good as a cameraman.”

You laughed at us both and reported how as a girl in Holland you watched the sun fade from the terrace, over the flat red fields, and then ran upstairs to see it vanish all over again. “Which was, I suppose,” you ended, “what is known as a Dutch treat.”

Our host reminded us about Goethe’s put-down of sunsets... Besides, it was dark. Soon we went indoors and turned on some lights.

Richard Howard from Damages.
Mr. Capon visited Washington University as part of the Sidney S. Cohen Businessman-in-Residence Program of the Business School. In a busy two days here, he met with students and faculty in informal discussions, participated in Business School classes, and lunched with top-level St. Louis area business executives. This article is based on the address he made before the Business School Century Club on United States-Canadian relationships, or the art of "sleeping with an elephant."

ON SLEEPING WITH AN ELEPHANT

By FRANK S. CAPON
Vice-President and Director,
Du Pont of Canada, Limited

As a Canadian, I naturally look at the subject of United States-Canadian relationships from the Canadian rather than the U.S. viewpoint. I can think of no better way of expressing that viewpoint than by repeating a definition of our difficulties offered by our Prime Minister. In New York recently, Mr. Trudeau remarked that living beside the United States is rather like sleeping with an elephant—every groan or grunt is shattering to our shummer, and if it should kick or roll over the results could be disastrous. But whether we like it or not we cannot cut the continent in half physically, so we just have to learn how to sleep with the elephant.

Our greatest economic, social, and therefore political problem in Canada today—and it is one shared to some degree by all lesser powers—is the vast and rapidly increasing ability of the United States to generate and accumulate wealth. I think it will help to understand our problem if we go back a bit in history to recognize how this ability developed and how the paths of the United States and Canada diverged.

When the United States established itself as a republic, land constituted most of the world's productive capital. Having lots of land and few people, the U.S. adopted a policy of making land freely available to its citizens, thus, in theory at least, making every citizen a capitalist. The U.S. was the only nation in the world to take so bold an action, and became the only nation to start out from its foundation as a middle class society with no poverty other than that small percentage unable to work their land. With most citizens owning what they themselves produced, they worked hard for themselves and their families, the nation developed habits of hard work and thrift, productivity increased rapidly, and many U.S. citizens began to accumulate wealth.

Technology was essentially simple, based on hand tools and horse-powered implements. It was essentially man's own labor, with the aid of these simple tools, which generated his wealth. It is from this background that we developed the twin erroneous ethics—that labor as such is essential for prosperity and peace of mind, and that wealth is created essentially by human effort. For even then it was capital—the land itself—which really did the creating, and man was also only a tool.

When the harnessing of power to machines came along, technological developments began to follow rapidly one upon another. The tempo changed and the generation of wealth speeded up. The most enterprising land owners, who had accumulated the most wealth, automatically formed the capitalist elite because they had the money to buy the machines that would make their land still more productive, that would make totally new products to raise living standards, and that would generate new wealth at a faster and faster rate. Starting with its unique base of broad distribution of land ownership and basic living standards, the U.S. had both the financial ability and the widespread incentives and habits of hard work and thrift to take the fullest advantage of the capital revolution. It rapidly developed into the wealthiest and most productive nation in the world.

We see now that there are few conceptual limitations on the potentiality of technology to generate wealth. Using technology that already exists we can conceive of a world of prosperity and leisure in which machines do virtually all the producing with only the need for a tiny fraction of available manpower. But the implementation of such change presents frightening problems, calling as it does for replacing so much of our present social, economic, and even ethical structure with a whole new set of policies and ethics.
In spite of poverty pockets which receive great publicity, and which may be increasing because of flaws in the wealth distribution system, the U.S. remains by far the wealthiest, the most productive nation in the world. This has enabled her products to compete in countries that have much lower wage structures, because her automation and capital productivity more than offset the lower wage rates of those countries which have been unable to afford to automate.

The U.S. is playing a vast world game of monopoly—using its generation of wealth to buy up productive property all around the world. Its balance of payments position has appeared awkward at times as it uses its cash to buy property—but the winner at monopoly is the one who ends up with all the property; the cash then flows back to him automatically.

As the U.S. developed into the wealthiest and most productive nation on earth, it came inevitably to the position of total leadership of the non-communist world. But this overshadowing of great power presents major difficulties for all lesser nations, and therefore for the U.S. as well. Because throughout this period the nations have become ever more interdependent, the success or failure of one now directly affects all others; one nation can no longer go its own way without regard to what is happening elsewhere in the world.

Against this background, what is Canada? What are the factors that determine its economic or business relationship with the U.S.?

Canada is a huge country, second only to Russia in size. It has magnificent natural resources—arable land, fresh water, hydro power, wood, metals and other minerals, oil, natural gas. But with a relatively small population, Canada's domestic market is limited. And with an often vicious climate compressing its population, its infrastructure, and its enterprises into a corridor about a hundred miles wide along the four-thousand-mile northern border of the U.S., Canada has a difficult piece of economic geography with which to live.

Because of the overpowering nearness of the U.S., because our magazines, radio, and television come mainly from the U.S., because over half of all Canadians visit the U.S. each year, we have the same aspirations. Our education and literacy are closer to those of the U.S. than are those of any other country. We have the skills for business, we have the material resources, and we have developed our infrastructure at a fantastic rate since the war, to keep up with the U.S. Joneses.

But we were short of financial resources to finance this development, so we borrowed money to pay for the infrastructure and we begged the big U.S. corporations to come in with equity stock to build the primary and secondary industry so that resulting employment could give us high standards of living. Because we are constantly aware of U.S. living standards, we want them, too—and now. Rather than follow the U.S. lead of building up our financial strength with savings, living frugally as we did so, we have elected to live well and let the U.S. buy control of our entire economy.

Historically, Canadian living standards had remained below those of the U.S., and wage rates were traditionally 20 to 30 percent lower. In order to insure industrial growth, Canada adopted a national tariff policy, even though tariff rates on manufactured products have generally been much lower than U.S. rates. Technology was readily available from U.S. parent companies, and in the days when our industry was developing, technology was relatively simple. Small-scale plants, of a size to meet the Canadian market, could be based economically upon our lower wage rates and tariff protection. Recent developments have made obsolete those foundations upon which our industrial structure was built.

In the most productive industries, rapid technological sophistication is causing the advantages of huge-scale plants to grow quickly, placing small plants at a rapidly increasing disadvantage. At the same time, our two advantages of lower wages and reasonable tariff protection are being rapidly eroded—the former by the drive for wage parity by our unions and the latter by the worldwide trend to tariff reduction or elimination set off by the Kennedy Round negotiations in Geneva.

Such a combination of changes would present a formidable economic problem for any country. But if its industry were owned by its nationals, they would tighten their belts, accept a lower rate of return on capital and a lower living standard, and keep their plants going as best they could. However, this is where another Canadian phenomenon—the very high degree of foreign ownership—comes into play to further bedevil us.

Investment decisions are based upon two main factors: the return that can be earned and the desire to keep capital within political jurisdictions in which the owner of capital has faith. The return earned on investment in Canada has fallen suddenly, because of sharp wage and related cost increases, lower tariffs and thus increased competition from foreign products, and finally a growing disadvantage of the smaller scale plants justified by the scope of the Canadian market. U.S. parent companies now often find that it is more profitable to put new investment into the U.S. to ship products to Canada rather than to put the new investment in Canada. There is the added advantage of keeping the investment within the familiar U.S. political control. Since U.S. investment accounts for a very high percentage of Canada's total secondary industry, this has a determining effect on the country's prosperity and living standards.
Canadian government policy has in fact added to this difficulty. Some years ago the Government decided to slow down the U.S. takeover of Canadian business by announcing a policy that Canadians should have the chance to own at least 25 per cent of Canadian subsidiaries of foreign corporations, giving tax incentives to make the policy effective. But the fact that 25 per cent of the benefits of exploiting U.S. technology through a Canadian subsidiary go to minority shareholders adds one more cogent reason favoring new investment by parent companies in the U.S. rather than through controlled Canadian subsidiaries.

This Canadian resistance to growing foreign control is understandable when you realize that it is the employment of a nation's productive capital which determines its living standards, and that foreign owners are likely to employ their capital according to their own interests rather than those of Canada. Probably the outstanding example of this Canadian resistance was the refusal to allow National City Bank to acquire the Mercantile Bank of Canada. Mercantile was owned by the Dutch and Citibank bought the shares from the Dutch, thus not changing the degree of foreign ownership of Canada's banking system. But the banking system, through its control of credit and money, directly determines the nation's economic success. Canada did not fear Dutch control of one bank but it did fear U.S. control, with the implications that other U.S. banks would move competitively to buy out the remaining Canadian banks, bringing the entire Canadian banking, credit, and monetary systems under U.S. control. Canadian veto of this transaction brought harsh words from the U.S., but after the first violent reaction the essential equity of the Canadian position became accepted.

World pressure for change has been overtaking us, the bases upon which Canada's past economic achievements were made no longer stand, and our future success depends upon finding ways to take advantage of a new set of conditions. We have to assume that the world will not reverse the trend toward lower tariffs, so we have to expect further weakening of our protection from foreign goods. While industry in other countries imposes various types of non-tariff barriers to trade, these are not likely between Canada and the U.S., partly because Canadian subsidiaries of U.S. corporations will not press for them, partly because Canada now relies so heavily upon U.S. good will and exemptions from U.S. balance of payments guidelines that it cannot afford the reprisals that such steps might incur.

Traditionally, the most important equalizing factor in such situations was the foreign exchange rate. Whenever a nation's cost structures got out of relationship for any reason, its currency was automatically revalued in free international exchange markets to restore the prices of its products to a competitive position. However, recurrent exchange crises caused by just such situations have brought a feeling of incipient panic in world money markets.

As the International Monetary Fund, backed heavily by the U.S., has stepped in time and again to shore up one currency, the freedom to adjust currency values to meet price changes has become severely restricted. The imperative need to keep equilibrium in world money values until the new SDR's have become established has caused the U.S. to put an umbrella over the present value of the Canadian dollar, thus preventing traditional corrections for the type of imbalances brought on in Canada by excessive wage and cost increase and irresponsible social security policies.

Canadian wage rates will continue to move toward parity with U.S. rates because of domination of Canadian labor by U.S. unions which are, in fact, protecting U.S. jobs by keeping Canadian costs high. This was never clearer than when the U.S. automobile workers went on strike to demand that Canadian workers be paid the same rates, thus raising Canadian car manufacturing costs. Such actions by U.S. unions are backed up by the emotional, if shortsighted, stand of Canadian workers that they are as good as U.S. workers and should be paid the same rates, whether or not these can be justified economically. Our automotive and steel workers have achieved parity, and one of our great industries, farm implements, having given in to wage parity demands, is quietly moving south of the border.

The theory of free trade is to gain the benefits of industry rationalization, the lower costs which result from increased scale and specialization. But North American rationalization, already achieved in the automotive and farm implement industries, presents a crucial difficulty for Canada. Not only does North American rationalization allow the significant savings of a single management group for all North America—in fact, it demands single management since rationalization is impossible if one nation's management policies are seriously different from those of the other. But since North American industry is controlled by U.S. corporations, rationalization would mean the transfer of management functions, and therefore key job opportunities, to the U.S. How can any nation help becoming alarmed at the thought that management decisions for its total industry will be made abroad and that it can no longer offer to its new graduates any challenging opportunities in management?

The same effect applies in scientific research and technical development. Not only is Canada's total economy small in relation to the size needed to support a full-scale, modern technological effort, but there is no great incentive for U.S. parent companies to do such work in both countries if industry has been rationalized. But if such work is not carried out in Canada, we cannot keep our fine young...
scientists challenged and the nation will lose its most productive people.

The degree of U.S. ownership of total Canadian industry is already over 50 per cent and gaining, with this figure close to 100 per cent in such strategic industries as automobiles, electronics, and oil refining. The degree of U.S. control of management policy and, in fact, of the direct management of Canadian industry, is obvious.

When the U.S. developed chronic balance of payments problems, it announced a set of guidelines governing the foreign operations of its international corporations. These included a drive to supply more U.S. manufactured products rather than expanding foreign capacity, bringing back a larger proportion of foreign earnings, and decreasing new investment abroad. It is easy to see why Canada reacted strongly, announcing its own guidelines covering Canadian subsidiaries of foreign companies which were diametrically opposed to the U.S. guidelines. The U.S. quickly recognized the equity of Canada's position as it came to understand for the first time that Canada had not contributed to the U.S. balance of payments difficulties and yet the literal application of U.S. guidelines could quickly bankrupt Canada. In fact, of course, the U.S. balance of payments with Canada, including capital transfers, has been heavily in favor of the U.S. for years.

Our mutual problems are increasing, and we cannot look to the future with any complacency. There are deep and ominous currents developing around the world, and particularly in the U.S. These are due to fundamental changes in the factors which determine our ways of life, our living standards, our institutions, our social structures. Such changes are difficult to discern and are easily misunderstood, particularly by the young or by groups lacking the breadth of knowledge and wisdom concerning the way in which all the pieces of the puzzle fit together. And unfortunately for Canada, the overpowering nearness and size of the U.S. causes us to feel your problems and difficulties immediately without our having any ability to do anything about them.

From the beginning of time man has been concerned with his personal security—with assurance that he will have food, clothing, shelter, and protection against his enemies. This is still his primary concern, and virtually all the unrest, revolt, or wars of the past and present can be traced to these basic concerns. Men are always either defending their security or, if they have hope of succeeding, trying to grab someone else's security.

WHEN THE REPUBLIC of the U.S.A. was formed, the people were given economic security by giving them land. If all else failed, they could hope to provide food, clothing, and shelter by applying their own manpower to their own land. U.S. institutions and social structures are based upon this security and on the independence of the individual which stems automatically from it.

But it is easy to overlook two important factors. First, the U.S. is the only nation which ever gave such widespread economic security to its people, and therefore the institutions and structures which are tailored to meet its needs are often inappropriate for other nations. Second, the changes that have already taken place in the U.S. and elsewhere have destroyed the original concept of personal security based on ownership of land, and no effective substitute has yet been provided. Herein lies the reason for the conflict, revolt, and violence which is so prevalent today and which will gather momentum like an avalanche unless we find a new system of security.

The Industrial Revolution started slowly and developed gradually, bringing with it a growing range of industrial jobs. Because the expanding use of capital by the industrial complex made it vastly more productive than the old man-powered or horse-powered agricultural system, these industrial jobs could afford to pay wages above the level that could be earned by most small landowners working marginal farms. So the urbanization of the world gathered momentum. The great significance to mankind of this movement was the giving up of the security of food, clothing, and shelter based on personal land ownership in exchange for the higher standards of food, clothing, and shelter to come as the worker's share of the productivity of the industrial complex. But the human animal continues to place security first. Because his income now comes from a job rather than from his own land, that job has to be as secure as the ownership of his land. This was the first fundamental departure from the old U.S. republican system, a departure which destroyed much of the independence of the individual, for now his security depends upon others rather than on his own efforts applied to his own capital.

The second fundamental departure is more shattering, and we have scarcely begun to grope for an answer. While the Industrial Revolution developed gradually, permitting the essential adjustments to institutions and structures to be made peacefully, the technological revolution has hit us with the suddenness and ferocity of a tornado. All life systems develop on exponential curves, and the technological revolution is simply the advance of the Industrial Revolution into the near-vertical growth rate of its exponential curve. The new technology developed since 1945 far exceeds in economic significance all the technology previously developed. To name just a few breakthroughs we have the jet engine, television, radar, nuclear energy, space hardware, lasers, computers, and fantastic developments in biology and medicine.

The great significance of the technological revolution is that its objective is to produce the wealth we need by using machine-power rather than man-power. Its economic justification increases with every wage increase, and the technical knowledge already exists for us to produce

"Because it was the U.S. that embarked upon the noble experiment of making every citizen a capitalist, it is the U.S. which alone can save the world economy in this time."
In the meantime, the U.S. dilemma poses ghastly problems for Canada. Violence has already spread across the border. In our marginal economy, job security is much weaker, compounded by such unsound economic policies as wage parity, tariff reduction, and expanding social security programs. Lacking ownership control of much of our industrial complex, we tend to fall back on increasing government regulation. The security aspirations of our people are now tied to U.S. living standards and incomes, and it may be that this trend cannot be reversed, that we shall inexorably become part of a total economic, then political, entity of North America.

The U.S. has crammed into one generation technological development that ought to have taken a thousand or even ten thousand years. The U.S. was the only country that could have committed the resources to such a task but others can easily afford to purchase rights to this new knowledge. However, somehow a thousand or ten thousand years of social development must be crammed into the next few years if the U.S. is to prevent the expanding gap between technology and social structure from destroying all of us.

Social development does not need the same kind of financial commitment, and already other smaller nations are doing some magnificent work in this direction. The problems the U.S. created are now Canada’s problems as well, and I hope we will be invited to help solve them.

No longer can any nation, no matter how great, live alone without regard for the effects which its policies, its problems, and its solutions have on others who share this planet.
This fashion plate is an Art School family affair. Clothes were designed by third and fourth year students in the Department of Fashion Design, modeled by fashion design students, and photographed by Fine Arts students Tim Clark, Leslie Baumgartner, Don Adair, and Diane Trossman. By using a sepia technique in printing, Leslie and University photographer John Millaire turned the whole thing into this mod antique fashion plate for display in the Student Art Show.
ON COMMENCEMENT DAY at Washington University this year, two major addresses were given—one at the Eliot Honors program in the morning and the other at the actual Commencement ceremonies in the evening. The two major speakers came from widely different backgrounds and yet both had many of the same things to say—and both said them extremely well.

In the morning, Charles Evers, newly elected mayor of Fayette, Mississippi, and brother of the assassinated civil rights leader Medgar Evers, called it "crazy to be spending billions of dollars in Vietnam and in putting a man on the moon, when the average family income in Mississippi is $1,000."

In the evening, Commencement speaker J. George Harrar, president of the Rockefeller Foundation and a noted agricultural biologist, said that today's youth is "appalled by a world which they believe bears the high cost of waging war with equanimity but only with difficulty finds the funds to save people from hunger, ignorance, disease, and degrading poverty."

Both speakers also proposed essentially the same approach to the solution of society's ills. Harrar expressed the hope that the next twenty-five years would become an era of "increasing opportunity for contributions to the welfare of mankind through the discovery of pathways toward peace and understanding in an improving human climate."

Charles Evers said the same thing in more simple terms: "Change," he said, "must be made through love, devotion, and respect for others."

DEGREES WERE CONFERRED on 1,978 students at this year's commencement—the 108th in the University's history. The 1969 graduating class set several records: One hundred and thirty-seven doctorates were awarded, including 100 in the Graduate School of Arts and Sciences, to make it the first time this division of the University has broken into the three-figure bracket in doctorates awarded. Six hundred and two students received the bachelor of arts degree in the College of Arts and Sciences, the largest number of A.B.'s ever graduated by this division of the University.

Eliot Honors Day, established as a way of recognizing outstanding students in the graduating class, pays tribute each year to the highest ranking graduates of each school of the University and to members of the various honoraries.

This year, Chancellor Eliot introduced a most pleasant innovation in the ceremonies—one which we hope will become a regular part of Eliot Honors Day in the future. The Chancellor gave special recognition to four students who did "superlatively well" in various kinds of extra-curricular activities as well as scholastically. In paying tribute, Chancellor Eliot pointed out that "co-curricular" might be a much better term than "extra-curricular" to describe the kind of important, often career-oriented activities in which the honored students excelled.

The four students honored were:

Elizabeth Holly Outwin, "a young lady with a bright career in music ahead of her who has brought great delight to this campus over the years with her beautiful voice."

Timothy B. Wolf, "the outstanding student in the whole field of drama—a versatile, skilled, devoted actor."

David Shelton, the winner of the 1969 Ethan Shepley Award for leadership, scholarship, and service to the campus community.

David G. Romano, "the leading athlete of the year and the best long-distance runner the University has ever had."

"It's Twins! It's Twins!," the picture story in the spring issue about the birth of the Marcus babies, was very well received. All of the letters from readers were favorable except one. (On second thought, we're not too sure about that one. The writer reported that she was "shocked" by the last issue, but she didn't say what shocked her in particular. Perhaps she was taken aback by Professor Michael Fox's observations on "naked apes," which appeared last issue in this space.)

However, a great many people seemed to like it. The article was reprinted in the St. Louis Post-Dispatch and the Museum of Modern Art in New York requested copies of the photographs.

In a way, it's too bad that the photographs were so powerful because they squeezed out most of the text. If there had been room, we would have gone into more detail about some of the other people involved in the whole operation. There was the Department of Pediatrics, for instance, which checked over the twins as soon as they left the delivery room. Then, there was the staff of Barnes Hospital which provides many essential services, including outstanding patient care for Washington University's St. Louis Maternity Hospital.

Incidentally, the twins are doing fine and the parents report that they can now tell them apart.

—FO'B
Double date