Arthur L. Hughes, Wayman Crow Professor Emeritus and research associate in physics, and John W. Mathews, senior physics student, study particle tracks in an experimental spark chamber. Dr. Hughes, 83 years old, is still actively pursuing a career in physics that began nearly sixty years ago at the Cavendish Laboratory at Cambridge. Since 1923, when he succeeded Arthur Holly Compton as chairman, Professor Hughes has seen the University's Department of Physics grow from a five-man faculty housed in the basement of Eads Hall to the dynamic department which today is teaching and conducting research in dozens of fields in Crow Hall and in the new Compton Laboratory. The Department's newest area of research is the laboratory of space science headed by Robert M. Walker, the first McDonnell Professor in physics. See "Fossil Tracks From Outer Space," beginning on Page 2.
COVER: Tracks left by induced fission of a uranium-238 atom in a speck of dust. New physics group, headed by Robert M. Walker, is investigating natural “fossil” tracks, dating back billions of years, in fragments of meteorites. See “Fossil Tracks From Outer Space,” on Page 2.

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Washington University's new laboratory of space science is directed by Dr. Robert Walker, first McDonnell Professor in physics. Since joining the Physics Department last summer, Dr. Walker has become a key man in several projects at the frontiers of space research. He has received many honors for his role in developing techniques for "fossil track" detection, which have had applications in studies of the early history of the solar system, cosmic rays, biology, and archaeology. He already has opened an important new line of research in this field since joining the University's faculty.

FOSSIL TRACKS FROM OUTER SPACE

"Shooting stars" are romantic events to most of us. We simply "wish on" them, and then forget them. If the shooting star survives its entry into the atmosphere, it technically and romantically becomes a meteorite. Just a homely looking rock. But it has immense practical value to science.

Meteorites have been travelers in space since the birth of our solar system, remaining relatively unchanged, except for occasional collisions, for billions of years. They are the oldest objects in which direct evidence can be found relating to specific events during the formation of the solar system and of its ultimate fate.

The great majority of meteorites burn up completely in the atmosphere, and most of those that get through are lost in the wilderness. Only about 2,000 meteorites are in human possession, most of which are jealously guarded by museum curators.

It was a very rare event indeed one night last July when fragments of a large meteorite ploughed into fields near the little town of Saint Severin in Southern France. Paul Pellas, a mineralogist in Paris, read about the meteorite in the morning paper. He got in touch with the mayor of Saint Severin, who agreed to reserve the meteorite for him. He then headed for the town with several fellow investigators armed with shovels. Hours later, still hardly believing their good fortune, they returned to Paris with the meteorite.

It was the first time scientists had been able to recover a meteorite in such a short time after it had fallen, thus permitting measurements that otherwise would not have been possible. The French scientists immediately dispatched samples of the precious rock to colleagues who could carry out several different types of experiments, and thereby greatly enhance the meteorite's scientific value.

One of the scientists who received a sample of the meteorite was Robert Walker, Washington University's first McDonnell Professor of physics and director of the new laboratory of space science. While a visiting professor at the University of Paris, Dr. Walker inspired several French scientists, including Pellas, to do work on meteorites in the first place.

Science has various ingenious techniques for studying meteorites, and one of the most interesting ever to be developed was conceived by Dr. Walker just five and a half years ago at General Electric Company. Since then, Dr. Walker and his colleagues have written more than fifty...
FOSSIL TRACKS FROM OUTER SPACE

articles on the various uses of the technique, which have had great implications in nuclear physics and geophysics as well as numerous practical applications.

Professor Walker's career, however, began in an area of physics that contrasts sharply with his current investigations. In the early 1950's he was one of the first men to use the huge cosmotron at Brookhaven, L. I., to study the newly discovered family of high-energy particles in the atom's nucleus. When he finished his Ph.D. in this field at Yale, he went to General Electric and switched to solid state physics. For the next several years, he pioneered in fundamental studies of the interaction of radiation with solids. This work led to calculations of cosmic ray effects on the moon's surface.

At this time, Dr. Walker became aware of work done by E. C. H. Silk and R. S. Barnes in Great Britain's Harwell Laboratories. Using a high magnification electron microscope, Silk and Barnes had observed extremely minute tracks which they produced in mica by bombarding it with uranium fission fragments.

Could it be that natural nuclear tracks exist in meteorites and other material, Dr. Walker asked. In 1961, he began the project to find such tracks in mica, the logical starting point because of its simplicity and abundance. He enlisted the aid of P. B. Price, an electron microscope specialist at General Electric.

To give a faint idea of the "needle-in-the-haystack" project they faced, a few events on the atomic scale of things should be outlined. The atoms of a crystal are arranged in orderly rows, called crystal lattices, all very tightly bonded together. In one segment of mica containing millions of atoms, there may have been one uranium-238 atom which fissioned and left a fossil track. When it exploded, the two fragments of its heavy nucleus flew out among the rows of the orderly lattice-work, tearing electrons away from the crystal atoms. The loss of the electrons disturbed the electrically neutral balance of the crystal atoms, leaving several pairs of positively charged atoms. The positive pairs repelled each other along the paths of the explosion and the atoms became permanently displaced. These displacements form the tracks. However, they are only a few atoms in width and, of course, very difficult to find.

Remarkably enough, Dr. Walker and Dr. Price discovered a relatively simple way to enlarge the tracks.

"We found that when you give the mica a bath of acid, the acid rushes up into it like tea in a sugar cube and etches out fine channels along the paths of damage left by fission. These channels can be made as wide as the wavelength of light, so that the fossil tracks can actually be seen in a light microscope," Dr. Walker explained.

They then went on from mica to find the tracks in all types of insulating material. Tracks in glass and plastics were first detected by Dr. Walker's co-worker, R. L. Fleischer at General Electric. Subsequently, the tracks were found in meteorites; this work was carried out in a collaboration with Dr. Walker's French colleagues. (Dr. Walker interested one of the Frenchmen, Michel Maurette, in doing his Ph.D. work in the field of fossil tracks; and Dr. Maurette, who was the first man to see these tracks in meteorites, has now rejoined Dr. Walker at Washington University.)

Fossil tracks in terrestrial materials are caused only by uranium-238 fission because the atmosphere shields them from other forms of radiation. By comparing the fossil tracks in a given sample to its content of uranium, the age of a sample can be calculated.

Tracks in extra-terrestrial materials, such as meteorites or material from the moon's surface, are produced from several sources. They can be used to obtain fundamental information about the history of the solar system when it was young and about the way in which the chemical elements were formed.

The etching technique has had remarkably diverse applications. Dr. Walker and his associates at General Electric bombarded plastics with fission fragments, then treated the material with acid. The ultra-fine channels which resulted in the material duplicated the exquisite filtering capability of membranes in living tissue. This artificial membrane, or "nucle-pore filter," may be used, for example, to filter out various types of cells and is being used in several biology experiments.

Russian scientists using the technique have discovered the latest trans-uranium element, number 104. In one archaeological application, Dr. Fleischer dated finds made by anthropologist Louis Leakey, whose discoveries at Olduvai Gorge in Africa have pushed back the appearance of man on earth to at least two million years ago. The technique has been used to date man-made glass objects but it is difficult for younger specimens. Young glass contains fewer tracks, and the sensitivity of dating is directly proportional to the number of tracks.

But archaeologists as well as space scientists may find new hope in a second frontier of fossil track work that has opened at Washington University.

One of many ideas that Dr. Walker was juggling around when he came to the University was that there should be so-called alpha recoil tracks in the same substances he had been studying. He knew that the tracks should be present in much greater numbers than fossil tracks made by fission; so if they could be found, dating could be greatly improved. "Alpha recoils" are made as follows:

Several types of heavy radioactive atoms in crystals emit alpha particles, which are just high energy nuclei of...
Fossil tracks produced by fission in mica, photographed with a high resolution electron microscope. The tracks are about fifty atoms wide.
helium atoms. When the alpha particle shoots out of the nucleus of the radioactive atom, the atom recoils or bounces back along a short path in the crystal, displacing a number of the previously ordered atoms.

With a special type of microscope, Dr. Walker spotted the first alpha recoil fossil tracks one November night last year in his laboratory on the fourth floor of the new Compton building. "I was very excited, of course, and anxious to prove beyond doubt that what I observed was indeed due to alpha recoils. Fortunately, Wen-Hsing Huang of the University's Earth Sciences Department became interested in the problem and it was due to his work that tracks have been found in a number of substances. And it has been proved that they are recoil tracks. Right now, it is a question of hard work. But it's a very happy state—like the period right after the discovery of the big tracks. If we can develop this technique for glass and meteorites, we're in for an exciting time."

"If we can see the tracks in glass at low magnification, for example, any man-made object could be dated with great precision," Dr. Walker said. One period in which there is a great gap of archaeological information is from 50,000 to 300,000 years ago, a critical era in evolution. In addition, the fact that alpha fossil tracks are more stable and more numerous than fission tracks could permit far more exact analyses of early events in the solar system.

One of the more important results of the analysis of meteorite tracks has been in gathering more information about cosmic radiation. Studies of this radiation, which comes from outer space, may some day help shed light on the evolution of the universe. Analyses of the tracks have shown for the first time how amounts of elements heavier than iron have varied in cosmic radiation over time. This information is being compared with the amount of heavy elements now reaching earth. The latter data are being gathered in experiments with high altitude balloons. Ultimately, measurements of the current influx of elements will be done with recoverable satellites.

Dr. Walker is involved in another major space science project initiated by physics professors Joseph Klarmann and Michael Friedlander. They plan to engage in a new type of astronomy, called gamma ray astronomy, by sending a gamma ray telescope outside the earth's atmosphere. Studying gamma radiation is a potential new way of "seeing" important astronomical events. The problem is that most gamma radiation is absorbed by the atmosphere. As a result, the Washington University group headed by Professor Klarmann is developing a prototype of a gamma ray telescope for eventual use in Apollo spacecraft flights. The University is one of three institutions in the nation selected by the National Aeronautics and Space Administration to prepare for the gamma ray experiments.

In addition to all of these studies, Dr. Walker's group will take part in another Apollo science project. His laboratory will be one of the first to receive samples of moon rock when they are returned to earth by the astronauts. They will examine the specimens for fossil tracks and other radiation effects.

The University has made a commitment to establish a center for space science research, and in this effort the practical support of the McDonnell Company has been of crucial importance, Dr. Walker pointed out. "What we hope to have are people from many disciplines who are interested in such questions as the origin of the elements and the planets, and in the exploration of astrophysical phenomena. I'm confident we'll succeed. This University has a superbly free and cooperative atmosphere. I'm still in a state of euphoria over this, and so far I haven't found any limitations," he said.

"I don't think the public realizes that this is a golden period of physics in space research. We really are discovering entirely new phenomena, observable for the first time because of the ability to make measurements outside the earth's atmosphere. We are getting a different picture of what the universe is like. This is one of the serious scientific reasons for the space program which the public doesn't hear much about. As far as our developing the capability of man to handle himself in space, no one yet knows the implications. When we first flew airplanes, we didn't know what it was going to mean. I feel the same way about the implications of manned space flight."

Despite his heavy research commitments, Dr. Walker is active in an organization called Volunteers In Technical Assistance. He was one of the founders of VITA in 1959 and served as its first president. The organization draws on the resources of 2,500 member engineers, scientists, and businessmen to solve problems in the developing nations. For instance, VITA members invented a new and inexpensive solar cooker that is presently being tested by the United Nations in Morocco. Dr. Walker and University officials have begun discussions on the feasibility of a research and training center at Washington University for technicians from underdeveloped nations.

How does Dr. Walker find time for all these projects? Like many researchers he works at night. This has some fringe benefits, though. Going home late every night, you never know when you might see a shooting star.

FOSSIL TRACKS FROM OUTER SPACE
On February 25, John W. Gardner, Secretary of Health, Education and Welfare, made the principal address at Washington University's Founders Day banquet. In this article, based on that address, he emphasizes his view that new social legislation will give the American people a "hunting license" to solve their social problems.
IN RECENT YEARS the Federal Government has mounted some major social programs. They have aroused a good deal of comment, but much of the public dialogue concerning those programs must be confusing to the bystander. It is certainly confusing to me.

What is the ordinary citizen—even the informed citizen—to make of the charges and countercharges, the political claims and rebuttals, the cries of pain and rage?

What is the Johnson Administration trying to accomplish in its domestic programs? Is it just warmed over New Deal? Have the programs succeeded? What ought the nation be trying to accomplish?

First of all, it's a mistake to think about the Administration's aims and programs as something apart from the ideas and social strivings of the rest of the society.

President Johnson has often said that in government as elsewhere good ideas don't come with a political or official label on them—they arise out of the best thinking of the day, wherever it is being done. Every program I describe here is participated in very heavily by non-Federal elements—state and local governmental agencies, universities, hospitals, school districts, professional associations, voluntary agencies, and so on. They often supply the original stimulus to federal action, and they shape the programs in operation.

I have heard it said that the only thing accomplished lately by those concerned with social betterment has been to polish off the agenda of the 1930's. The passage of Medicare, improved Social Security benefits, and a few other measures lends credence to that assertion. And we can be proud that in these matters we are continuing the great initiatives of the New Deal. But to say that that is the whole story of today's social effort is to ignore the distinctive character of the battles that this generation is fighting, and to miss today's distinctive emphasis on civil rights, on poverty, on urban problems, on the reshaping of governmental processes, on preserving the natural environment, and above all on education.

Before we consider some of those items, I want to dispose of what I regard as a juvenile view of the problems that affect the nation. Some people seem to believe that for each problem there is a solution readily available—a solution that can be promptly achieved by passing a law and voting some money.

I think of this as a vending machine concept of social change. Put a coin in the machine and out comes a piece of candy. If there is a social problem, pass a law and out comes a solution. When the nation fails to solve one of its problems promptly, people who hold such a simplified view naturally assume that someone in power was stupid or misguided or both.

I don't want to rule that out as a possibility. But the truth is that we face a number of extremely puzzling problems to which no one has the answers.

No one really knows how to cure the troubles of our cities, though most of us have pet views. No one knows all the answers to eradicating poverty, though we've hit upon some important partial solutions. No one knows how we should design the new federal-state-local partnerships. These problems will be solved only after intensive experimentation.

NO DOUBT THERE ARE minor problems that may be resolved fairly promptly by passing a law. But where the great, central issues of our time are concerned, nothing will spare us the pain and effort of working the problem through.

Social change is a learning process for all concerned. It always requires re-education of large numbers of people to accept new objectives, new values, new procedures. It cannot go forward without the breaking down of long-established ways of doing and thinking. This is true whether the problem is one of civil rights, the reform of local government, educational improvement, or urban renewal. Most human institutions are designed to resist such learning rather than facilitate it.

In short, social change takes time. That is a sentence that no one who is pressing for change likes to utter. I don't like to utter it. It is the business of the proponent of social change to be impatient.

But we're caught in a dilemma. If we pretend that social change doesn't take time, we're back to the vending machine concept of social change. If we recognize that change takes time, we're back to the waiting game. What is the answer?
machine concept. And the consequences are predictable: unrealistic optimism as the change is initiated, disillusionment when it fails to ripen instantly.

I talked recently with a college student who had worked in the slums for three months. He was discouraged because he couldn't see signs of change despite the fact that his dedication had burned with a gem-like flame for one whole summer. I think I persuaded him that another summer or two might be necessary.

The astonishing thing about some of the best of recent legislation is that it implicitly recognizes the requirements of innovation. The Economic Opportunity Act is an example. It does not hand us a neat solution to poverty. It gives us authority and money to go out and look for a solution. It is a hunting license. It is a mandate to proceed with the difficult, exciting process of social change.

I N MY JUDGMENT, the recent efforts to help the disadvantaged—efforts in and out of government—constitute the first honest and penetrating look at the roots of poverty that the American people have ever taken.

I'm old enough to remember the New Deal very well. Its achievements were great. But it never came near the problem of hard-core poverty. It never looked unflinchingly at the roots of poverty.

One consequence of our more penetrating approach is the strategy inherent in the Headstart program. And that program well illustrates some of the problems of citizen attitudes toward social change: wild enthusiasm followed by disappointment. A more sane view recognizes that it may take years to learn how we can best serve pre-school children from disadvantaged backgrounds. But one triumph of the Headstart program was immediate and irreversible. We will never again imagine that we can ignore such children until they are ready for the first grade at age six.

I have been giving some attention to the education of American Indian children, Mexican-American children, Puerto Rican children in New York City, Negro children North and South, and to education in the developing nations. I now believe that there is a profound similarity in the educational problems of all children who have been kept out of the mainstream of modern culture by social or economic circumstances. If we can learn how to cope with such problems, we will have broken a sonic barrier that will echo and reverberate in every underdeveloped nation in the world.

The best of the new legislation (in whatever field) permits experimentation. One of the most useful ways of doing this is to permit the testing in a few places of innovations that may prove more widely useful. This is the purpose of the so-called "demonstration grants."

Robert Wood, Under Secretary of the Department of Housing and Urban Development, and former chairman of the Political Science Department at M.I.T., has expressed the sharp difference between this and the older approach in two phrases: "the politics of distribution" to describe the older process of "spreading it around"; and "the politics of innovation" for the new approach of problem-solving by experimentation, revision of institutional arrangements, and invention of new processes.

No recent legislation illustrates the point more dramatically than the Model Cities Act voted by the Congress last year. It is sufficiently broad in conception and flexible in language so that it gives us a wide-open opportunity to tackle the 25-year job of reshaping our cities. Some of the strategies built into the act, such as incentive grants for area-wide planning, offer an unprecedented chance to make sense out of the chaos of urban services.

Whether we—and by we I mean all of us in and out of government—have the imagination and guts and wisdom to seize that chance remains to be seen.

The problems of the cities and of poverty can hardly be exaggerated. But if historians of the 21st Century identify anything distinctive about the 1960's—and I think they will—they are likely to identify two items I have not listed: the civil rights struggle and the emergence of a new pattern of federal-state-local relations.

In civil rights we have seen two historic pieces of legislation—the Civil Rights Act of 1964 and the Voting Rights Act of 1965.
Thanks partly to those acts and partly to other developments in the civil rights movement, we have witnessed significant gains; yet today the problem of doing justice to Negro Americans remains the nation's number one domestic problem. And the steps ahead may prove more difficult than the steps already taken, because increasingly we shall be seeking the substance of equality rather than merely the forms.

Meanwhile, one thing is becoming clearer every day—from here on the Negro may benefit as much from our general programs of social improvement (education, health, social services, rent supplements, job opportunities, and the like) as he will from formal civil rights measures. And of all these measures, education is surely the most important. In matters of education, the Negro must have opportunity after opportunity until the weight of generations of oppression is lifted.

Now let me turn to the question of federal-state-local relations. The old system of weak state and local government, minimum coordination, and casual communications among federal, state, and local levels is dying. Or to put the matter more bluntly, it's dead. We are busily constructing a new system and what it will look like when we get done no one knows.

Some of us know what we want it to look like. President Johnson expressed it three years ago at the University of Michigan when he said: "The solution to our problems does not rest on a massive program in Washington, nor can it rely solely on the strained resources of local authority. It requires us to create new concepts of cooperation—a creative federalism—between the national capital and the leaders of local communities."

To create those new concepts of cooperation and to make them work is an exacting task. It requires much more fluid and imaginative collaboration among federal agencies than has ever before been attempted; it requires much improved communication among federal, state, and local levels; and it calls for new approaches to bringing order out of chaos at the local level.

If we can devise a pattern of federal-state-local relations that provides a new solution to the old problems of centralism vs. pluralism; if we can find a means of enabling the American people to act as a nation in response to their most pressing problems and at the same time keep the dispersion of power and initiative we value so highly; if we can do these things, we will have contributed importantly to the art of governing a free society.

Now let's look at the field of health. We've done very well in advancing medical science. We haven't done well in making those advances available to all Americans. In part this is a problem of paying for services. In part it is a problem of delivery of services.

We need to train more health manpower and to use that manpower more effectively. We need to develop new arrangements for the delivery of health services so that we can make the best use of expensive facilities and equipment and provide health care to all who need it.

To do this we have sought and obtained legislation that will enable us to experiment. An outstanding example is the act which has made possible the so-called Regional Medical Programs. It is addressed to the problem of giving as many doctors as possible access to the most advanced medical techniques and equipment so that their patients can get the best possible care. Again, it doesn't provide a neat solution. It gives us authority and money to try to construct a solution. It's going to take years to develop a system that will achieve the aims of the legislation.

Another example is the Comprehensive Health Planning Act of last year. It breaks away from the narrow categorical grants-in-aid of earlier years and frees the states to develop health services based on their needs as they see them instead of on preconceived priorities established in Washington.

I haven't time to say more than a word about education, and I think I'll limit that word to a comment on Title III of the Elementary and Secondary Education Act of 1965. That title provides funds for the creation of so-called supplementary centers in any school district.

The title is so broadly conceived and flexibly written that it makes it possible for a school district to strengthen itself in any of a great variety of imaginative ways.
But like all the other pieces of legislation described, it simply throws the creative challenge back to us, that is, not only to the executive branch of the federal government but to the states, the cities, the universities, the school districts. Which is as it should be. Whatever made us imagine that by passing a law we could spare ourselves the creative effort involved in significant change?

And since the challenge is—and always must be—thrown back at least in part to the local level, that level must be equal to the challenge.

That is one of the reasons why the American people can no longer afford to indulge their long-established preference for weak state and local government.

Because of the need for vitality in the non-federal partner, the federal government has recently taken some unprecedented steps to strengthen state and local government.

But it’s going to take a lot more than these federal efforts if they are to be strengthened. The people themselves are going to have to take action at the local level. They are going to have to modernize their governmental machinery, just as we are having to modernize the machinery of the federal government. They are going to have to create the conditions in state and local government and in State legislatures that will attract able people.

I believe that the nation would also benefit greatly by a revival of local leadership outside of government.

I don’t know of any local area without an abundant supply of men and women with the talent, energy, and character necessary for leadership. But rarely are those men and women directly concerned with the root problems of their cities or towns.

Almost all of them are in industry or in the universities, a few in independent professional practice. And of course they are deeply wrapped up in their special fields. Some find time for extracurricular community work, but too often such work does not go to the heart of the problems that are wracking the towns and the cities and the nation.

The plain fact is that all over this country today trouble is brewing and social evils accumulating while our patterns of social and professional organization keep able and gifted potential leaders on the sidelines. It will be a sad end to a great enterprise if the epitaph for our society turns out to read, “All the best people bemoaned the quality of leadership but none sought to lead.”

My concern extends far beyond the effective carrying out of government programs. Revival of local leadership is the only road to the revival of community. Modern life has had a destructive effect on local communities and on our sense of community—and has thereby eliminated something that most of us need very much.

We need the stability that comes from a coherent community. We need the assurance of identity that comes from knowing and being known. We need a context of acquaintance and loyalty into which we fit. We need a sense of obligation to others. Perhaps more than anything else, we need a sense of participation.

I emphasize this because it has to do with what may be, after all, the most critical problem ahead of us—the relation of the individual to society.

We all know the symptoms that arise from failures in that relationship: feelings of alienation, anonymity, loss of identity, an oppressive sense of the impersonality of the society, a loss of any sense of participation or of any social context in which participation would have meaning.

The sufferers from those symptoms would feel better if they could believe that their society needed them. And the irony is that their society needs them desperately. But the need cannot be adequately expressed in rhetoric from Washington, nor can the invitation to lend a hand with the society’s problems be effective until it is made real at the local level. That’s the only level at which most people will ever be able to participate in any meaningful way.

That’s why our goal must be a society that is vital in all its parts, in every state and city, in every university and school district; a society in which every individual feels that there is a role for him in shaping the local institutions and local community.

In closing I’d like to say a word about what I regard as the central themes of all our efforts.

Nothing is more striking than the emergence of education as the well-nigh universal ingredient of our current efforts to cope with a complex, swiftly changing world.

But when I try to characterize the central thrust of what we are now trying to accomplish in this society—and by “we” I mean we the people of the United States—I reach for something broader than the word “education.”

In so much that we’re struggling with—poverty, equality, opportunity, health, education, programs for the handicapped—the same themes appear and reappear—the release of human potential, the enhancement of individual dignity, the liberation of the human spirit. To my mind, those phrases express what ought to be regarded as the American commitment. Those ought to be the central themes of our national life.

Finally, I can’t close without pointing out that we seem to be in no danger of running out of trouble. In fact we’re generating new troubles at a rapid rate. All of which suggests that we spare a little time from our hectic putting out of fires to ask ourselves how we might make our society into a better problem-solving mechanism. It is a very primitive problem-solver at the moment. It need not be so. But that’s another speech.
On February 9, 1967, Robert L. Payton was inaugurated as United States Ambassador to the Federal Republic of Cameroon. The nation's newest envoy to Africa joined the State Department from Washington University, where he had held the post of Vice Chancellor for Planning, after serving for five years as Vice Chancellor for Development, and before that, as editor of the Washington University Magazine.

Bob Payton brought to the Washington University Magazine new and fresh ideas and an enormous amount of energy and vision. He carried these same qualities into his duties as vice chancellor. It is obvious that he will tackle his new and most important position as ambassador to an emerging nation with the same vigor. In the words of Eugene V. Rostow, Under Secretary of State for Political Affairs, who spoke at Payton's inauguration, "This appointment is a tribute not only to Mr. Payton, but also to the fine university from which he comes."
Chief of Protocol James Symington administers the oath of office to the new ambassador. In background are Daniel Sock, first secretary of the Cameroon Embassy, and Mr. Rostow.

Ambassador Payton signs his first official document. At left is the Payton family: David, Joe, Matthew, and Mrs. Payton. At right, Eugene V. Rostow, Under Secretary of State for Political Affairs, and James Symington, U.S. Chief of Protocol.

Ambassador Payton’s inaugural address was short and informal. The ceremonies were held in the State Department reception rooms before an audience of about one hundred.
Offering congratulations in the reception line were, at right, Merle Kling, dean of Washington University's faculty of arts and sciences, and Lattie Coor, assistant dean of the graduate school of arts and sciences and director of international studies programs.

Interested spectator at the inauguration ceremony was David Payton, age five. In preparation for his new life in French-speaking Cameroon, David learned to say, "Comment allez-vous?"
In this article based on his testimony before the Ribicoff Committee, Professor Rainwater maintains that it will prove impossible to plan urban environments in a rational way until we have solved the poverty problem. Dr. Rainwater was an associate director of a Chicago research firm specializing in consumer research before joining the University faculty. He is an executive director of a public housing research project in St. Louis, and is a senior editor of the magazine Trans-action.

CRISIS OF THE CITY / Poverty and Deprivation

by LEE RAINWATER
Professor of Sociology and Anthropology

The problems of poverty, deprivation, and discrimination are central to understanding the difficulties this nation is having in its efforts to develop a satisfying, safe, smoothly functioning style of urban life.

Efforts to do something about such problems as urban transportation, physical planning, and education continually run up against barriers imposed because a large proportion of the urban population, particularly in the central city, is poor and of exploited racial and ethnic groups. Until we make really significant headway in solving the poverty problem and thereby also the problems of race and ethnicity it will prove impossible to plan urban environments in a rational way.

I would like to outline some of the things social scientists have learned about the situation of persons who live in lower class, slum, ghetto environments, and then to suggest some of the policy implications that can be drawn from this knowledge.

Let me start by describing one particular lower class Negro community which, with a dozen colleagues, I have been studying intensively for the past three years: the Pruitt-Igoe Housing Project in St. Louis. Built in 1954, the project was the first high-rise public housing in the city. At present it houses about 10,000 Negroes in 2,000 households. What started out as a precedent-breaking project to improve the lives of the poor in St. Louis has become an embarrassment to all concerned. In the last few years the project has at all times had a vacancy rate of over 20 per cent. News of crime and accidents in the project makes up regular appearance in the newspapers, and the words "Pruitt-Igoe" have become a household term for the worst in ghetto living, in lower class Negro homes as well as in the larger community.

Pruitt-Igoe is not typical of the lower class world—no other public housing project in the country approaches it in terms of vacancies, tenant concerns and anxieties, and physical deterioration. Rather, Pruitt-Igoe condenses into one 57-acre tract all of the problems and difficulties that arise from race and poverty, and all of the impotence, indifference, and hostility with which our society has so far dealt with these problems.

Pruitt-Igoe houses families for which our society seems to have no other place. Although originally integrated, now Pruitt-Igoe houses only those Negroes who are desperate for housing. Over half of the households are headed by women and over half derive their principal income from public assistance of one kind or another. The project has proved particularly unappealing to the "average" family in which there is a mother, father, and a small number of children.

Life in Pruitt-Igoe, and in the St. Louis ghetto generally, is not quite so flamboyant as in Harlem, but Kenneth Clark's characterization of Harlem's "tangle of pathology" applies with equal validity to St. Louis. As sociologists have discovered each time they have examined a particular lower class community in detail, the lower class lives in "a world of trouble."

The observer who examines the lower class community in any detail perceives an almost bewildering variety of difficulties confronting its inhabitants. If one wishes to move from simple observation to understanding and on to practical action it is necessary to bring some order into this observation of many different kinds of troubles, problems, pains, and failure. One must move from a description of what lower class life is like to an understanding of why it is that way.

Let us start with an inventory of behavior patterns in the lower class community that middle class people think
of as hallmarks of the "tangle of pathology" of slum and ghetto worlds:

- High rates of school dropouts.
- Poor school accomplishment for those who do stay in.
- Difficulties in establishing stable work habits on the part of those who get jobs.
- High rates of dropping out of the labor force.
- Apathy and passive resistance in contacts with people who are "trying to help" (social workers, teachers, etc.).
- Hostility and distrust toward neighbors.
- Poor consumer skills-carelessness or ignorance in the use of money.
- High rates of mental illness.
- Marital disruptions and female-headed homes.
- Illegitimacy.
- Child abuse or indifference to children's welfare.
- Property and personal crimes.
- Dope addiction, alcoholism.
- Destructiveness and carelessness toward property, one's own and other people's.

All of these behavior patterns are highly disturbing to middle class people and most of them are even more disturbing to the lower class people who must live with them. It is not necessary to assume that all lower class families engage in even some of this behavior to regard them as hallmarks of the pathology of the lower class world. Rather, lower class people are forced to live in an environment in which the probability of either becoming involved in such behavior or being the victim of it is much higher than it is in other kinds of neighborhoods. From the point of view of social epidemiology, then, this is a high-risk population.

Yet this behavior is very difficult for most middle-class observers to understand. If, however, behavior is seen in the context of the ways of life lower-class people develop in order to cope with their punishing and depriving milieu, then it becomes much easier to understand.

The ways people live represent their efforts to cope with the predicaments and opportunities that they find in the world as they experience it. The immediately experienced world of lower-class adults presents them with two kinds of problems:

1. They are not able to find enough money to live in what they, and everyone else, would regard as the average American way. Because of inability to find work or very low pay, they learn that the best they can hope for if they are "sensible" is poor housing, a barely adequate diet, a very few pleasures.

2. Because of their economic disadvantage they are constrained to live among other individuals similarly situated, individuals who, the experience of their daily lives teaches them, are dangerous, difficult, out to exploit or hurt them in petty or significant ways. And they learn that in their communities they can expect only poor and inferior service and protection from such institutions as the police, the courts, the schools, the sanitation department, the landlords, and merchants.

From infancy on they begin to adapt to that world in ways that allow them to sustain themselves, but at the same time often interfere with the possibility of adapting to a different world should such a different world become available to them.

We know from sociological studies of unemployment that even stable middle or working class persons are likely to begin to show some of these lower class adaptive techniques under the stress of long term unemployment. In the lower class itself, there is never a question of responding to the new stress of deprivation since a depriving world is often all that the individual ever experiences in his life, and his whole lifetime is taken up in perfecting his adaptation to it, in striving to protect himself in that world, and in squeezing out of it whatever gratification he can.

In every society complex processes of socialization teach their members strategies for living, for gratifying the needs with which they are born and those which the society itself generates. Inextricably linked to these strategies, both cause and effect of them, are the existential propositions which members of a culture entertain about the nature of their world and of effective action within the world as it is defined for them.

In the white and particularly in the Negro slum worlds little in the experience that individuals have as they grow up sustains a belief in a rewarding world. The strategies that seem appropriate are not those of a good, family-based life or of a career, but rather are strategies for survival.

Three broad categories of lower class survival strategies can be observed in any lower class community that is intensively studied. One is the strategy of the expressive life style. In response to the fact that the individual derives little security and reward from his membership in a family which can provide for and protect him, or from his experiences in the institutions in which he is expected to achieve (the school, later the job), individuals develop an exploitative strategy toward others in which they seek to elicit rewards and support from those others by making themselves interesting and attractive so that they are better able to manipulate other people's behavior in ways that will provide them with some gratification.

In its benign forms the expressive style is what attracts so many middle class people to the lower class. The fun, the singing, the dancing, the exotic food, the lively language of the lower class often appeal to middle class people as reflecting somehow greater "naturalness," spontaneity, and gratification of impulses. Materialistic middle class persons, on the other hand, often condemn the same behavior as shiftless and immoral. But underneath the
apparent spontaneity, the expressive style of lower class people is deadly serious business. It is by virtue of their ability to manipulate others by making themselves interesting and dramatic that the individual has an opportunity to get some of the few rewards that are available to him—whether these be a gift of money, a gambling bet won, the affections of a girl, or the right to participate in a community of peers, to drink with them, bum around with them, gain stature in their eyes.

While the expressive style is central to preserving the stability and sanity of many and particularly the younger members of the lower class, the pursuit of expressive and self-dramatizing goals often eventuates in behavior which makes trouble for the individual both from his own community and from representatives of conventional society. Dope addiction, drunkenness, illegitimacy, “spendthrift behavior,” lack of interest in school on the part of adolescents—all can arise in part as a result of commitment to a strategy of “cool.”

When the expressive strategy fails, because the individual cannot develop the required skills or because the audience is unappreciative, there is a great temptation to adopt a violent strategy in which you force others to give you what you need because you can’t win it by working your game. In the violent strategy one takes because one cannot persuade others to give. The violent strategy is not a very popular one among lower class people, both because of the dangers that go with it and because lower class people generally disapprove of attacking and taking from others by force. Therefore, those who adopt the violent strategy require justification, whether at such a minor level as a teenage girl shoplifting in order to have a pretty sweater to wear to school or at the major level of one partner shooting his spouse because of infidelity.

There is little really cold-blooded violence either toward persons or property in the slum world. Most of it is undertaken out of a sense of desperation, a sense of deep insult to the self either from the specific persons who are attacked or from the world in general. Yet this strategy does not seem so distant and impossible to them as it does to the more prosperous. Indeed, violence may seem the only proper or mature response to the direct or impending attack by others.

Finally, there is the depressive strategy in which goals are increasingly constricted to the bare necessities for survival not as a social being, but simply as an organism. This is the strategy of “I don’t bother anybody and I hope nobody’s gonna bother me; I’m simply going through the motions of keeping body (but not soul) together.” Apparently this strategy of retreat and self-isolation is one that is adopted by more and more lower class men and women as they grow older, as the pay-offs from more expressive strategies begin to decline. Along the way many lower class people follow mixed strategies alternating among the excitement of the expressive style, the desperation of the violent style, and the deadness of the depressed style.

Along with these survival strategies lower class people make efforts to move in the direction of the more conventional strategies. One can observe in the lives of individual families, or in whole groups during times of extraordinary demand for lower class labor, a gradual shift away from the more destructive components of these survival strategies as income rises and seems more predictable.

It is from observations such as these as well as from interviews about lower class people’s hopes and aspirations that one learns that lower class styles of life are pursued not because they are viewed as intrinsically desirable, but because the people involved feel constrained to act in those ways given the deprivations and threats to which they find themselves subject. The lower class does not have a separate system of ultimate values. Lower class people do not really “reject middle-class values.” It is simply that their whole experience of life teaches them that it is impossible to achieve a viable sense of self-esteem in terms of those values. Therefore, they turn elsewhere: to expressiveness or violence for a sense of self-esteem, or to depression and self-constriction to ward off the pain of knowing that one cannot be as he wants to be.

But lower class people are intimately alive to how things might be different. They know what they would like if only they had the resources of the average working class man. They would want a quiet, rather “square” life in a quiet neighborhood far from the dangers, seductions, and insults of the world in which they live. There is no preference or intrinsic value attached to matricidal families, or to a high incidence of premarital sexual relations result in unwanted pregnancies, or to living alone as a deserted or divorced wife and having a boyfriend because you’re afraid that if you remarry your ADC will be cut off and your new husband will not prove a stable provider. These are ways of life that develop when there seems to be no other choice. But because there are a few people around in the immediate neighborhood who are more fortunate and live a more stable life and because they know from observation how the other half lives, lower class people are not easily confused between how they must live and how they would like to live.

What they might wish to preserve from the expressive
heritage of lower class ways (particularly when as among Negroes those ways provide a kernel of potentially valued ethnic identity and not just a class identity) they feel they can preserve while living a more stable kind of life. Lower class people would not find it nearly so agonizing as apparently some intellectuals feel they would to try to preserve what is intrinsically valuable in their cultural heritage while they escape what has proven painful and destructive.

I began by suggesting that there are two different kinds of urban problems, although each deeply affects the other, and by suggesting that efforts to solve the general problems of urban management will forever be frustrated, or at least will be much, much more costly, without a solution to the problem of poverty, both urban and rural. Unless the poverty problem is solved, every urban service, whether that of transportation or housing or education or health, will have to be seriously distorted and fragmented in order either to avoid or to take special account of the problems posed by having an “other America.”

The elimination of poverty has a very simple referent. Since poverty is relative to the total resources of the society to provide a life of particular material quality, the elimination of poverty means that the present family income distribution of the nation, in which a small group of the population earns a great deal of money, a large proportion earns a more moderate amount of money, and a small proportion earns very little money, must be changed by moving that bottom portion up into the middle category. The current diamond-shaped family income distribution must be changed into one which has the shape of a pyramid.

The problem of poverty is basically a problem of income equalization, not in the nineteenth-century sense of taking away from the rich to give to the poor, but rather in the sense of a progressive redistribution. This redistribution would channel national income, particularly the yearly increment in national income, to families in the lower 30 to 40 per cent of the population, so that a family income floor is established which is not too far below the median income for American families as a whole.

This is a goal with which most Americans would heartily agree. They simply want to feel assured that those individuals who improve their incomes have done so by earning the money they receive if they are at all able to. Up to now, however, there has been much more disagreement about how one might accomplish this goal, a disagreement that affects both the experts and the ordinary citizen.

There are basically two strategies implicit in the various programs and suggested plans for doing something about poverty. One, by far the most entrenched at present, might be called the services strategy and the other the income strategy.

The services strategy involves the design of special services for the poor. Some of these services have as their goal enabling the poor to earn an income which would make them no longer poor, as in the Job Corps and other job training programs, or over a generation’s time, as in Project Head Start. Other services are designed to provide poor people with things that they need in a direct way: special health programs, community action programs, consumer education programs, etc.

The problem with the services approach is that to a considerable extent it carries the latent assumption either that the poor are permanently poor and therefore must have special services, or that the poor must be changed by learning productive skills, by learning how to use their money more wisely, or by developing better attitudes while they are still poor that once they have changed they will then be able to accomplish in ways that will do away with their poverty.

These assumptions are extremely pernicious ones. Whatever characteristics the poor have which interfere with their accomplishing in ways that will move them out of poverty they have by virtue of the fact that they are poor. To persuade a housewife harassed by the problems of supporting a family of four on $78.00 a month that she would be better off if she learned better consumer skills, or even participated in a job training program for a relatively low paying and insecure job is to bring to bear a very weak intervention against the massive problems to which she has to adapt. It may be better than nothing, but it’s certainly not much better.

A second problem with the services approach is that the priority of needs of the poor is categorically established when the service programs are set up. Even if these service programs are decided with the maximum participation of the poor in the decisions, it is nevertheless true that the individual poor families for whom the services are made available do not have an opportunity to make use of the resources that support programs in ways that fit best with their own individual priorities.

Congress probably should ask of any comprehensive poverty program what average dollar value of resources per poor family served that program represents and then should ask itself whether the package of services that money represents will do more for the poor and the society than would the income itself.

One final problem with the services approach needs to
be considered. All we know so far of our ability to provide services to the poor suggests that developing viable and non-insulting services for low income populations is tremendously difficult. Special programs for the poor are extremely difficult to design so that they do not have the effect of furthering the stigmatized status of the poor. Congress must shoulder a large share of the blame for this since Congress has been most creative in thinking up “means tests,” “man in the house rules,” and other complicated control mechanisms which require the poor to expose their private lives each time they approach an administrator for a needed service.

To design services which do not stigmatize at the same time that they try to serve seems to pose tremendous political, administrative, and human engineering tasks for which past experience gives us little reason to believe we have the skills.

From all of this it seems reasonable to believe that if the poor had the money to purchase these special services, they might not do so; or at least they would purchase them with a different schedule of priorities than is built into the funding of the programs. The principal power that the poor want is the power of money in their pockets to make these choices as they see fit and as the needs of their families dictate.

The second poverty elimination strategy, the income strategy, goes a long way toward avoiding the difficulties that past experience suggests are inherent in the services strategy. Here the task is to develop a set of economic programs that have the direct result of providing poor families and individuals with an adequate income. From the social science information now available to us there are good reasons for believing that income is the most powerful and immediate resource to assist the poor to cope not only with problems of economic disadvantage, but with all of the dependent problems of community pathology, individual “lack of motivation,” and the like. We know that when a man has a job and an adequate income he is more respected in his home, and he is less likely to desert or divorce his wife. We know that under these circumstances parents are more optimistic about their children and more likely to teach the children by example as well as by words that they have much to gain from pursuing their educations through high school or beyond.

If one wishes to reverse those effects of lower class adaptations that are unconstructive, the most direct way of doing it is to strike at the root of the problem: the lack of an income sufficient to live out a stable “good American life” style.

Economists who have pursued this line of thinking have suggested that the income strategy requires three elements:

1. An aggregational approach—which involves general economic planning directed at the maintenance of tight full employment with a real unemployment rate (that is, taking into account labor force drop outs) that is extremely low. Such an employment rate has characterized this country only during the height of World War II.

2. A structural approach—which compensates the tendency for unemployment among low skilled workers to remain at relatively high levels even under conditions of tight, full employment. Such an approach would require that federal programs to bring about full employment be tied to guarantees of labor force entry jobs for unskilled men and guarantees of training on the job to upgrade those skills. In this context, that is tight full employment at all skill levels, a high minimum wage would also be necessary and would not have the negative effect of hastening the replacement of men by machines.

3. An income maintenance program—which fills in the income gap not touched by the tight full employment programs. The income maintenance program would be required for families with disabled or no male head and where the wife should not work because of the ages or number of the children. Such a program could take the form of family allowances, a negative income tax, or an annual guaranteed income, but in any case should involve a major reorganization of the government’s current income maintenance programs (particularly AFDC and other types of public assistance) since these are by far the most stigmatizing poverty programs now in existence.

I do not wish by this emphasis on the central and crucial importance of income to denigrate the importance of increased public expenditures to solve urban problems. Instead, an income strategy for an attack on poverty will have a significant advantage in the designing of meaningful urban services because it will tremendously simplify the problems of the designers of urban housing, education, health, and other services.

In a good deal of the social planning going on today the income gain for the poor is regarded as a side effect of urban services. The priorities should be turned the other way around:

1. We must provide income for the poor.
2. In order to do so we must put poor men to doing productive work, and we must commit personnel and other resources in addition.
3. Because we have the need to put these men to useful work (not “last resort employment”) we would be in a good position to accomplish the many tasks that are necessary if we are to have a decent urban world in which to live.

And because the poor are productively employed we would no longer need to design two kinds of services, but only one kind—services for urban Americans.
Bright, needy students, some of them from ghettos, often find it difficult to bridge the gap between high school and the University because of insufficient academic preparation and financial strain. To ease their burdens, a unique program has been established in University College. It enables them to attend evening classes at Washington University on scholarships while working at daytime jobs.
THERE IS NO SUCH THING as a typical University administrator. At Washington University, the chancellor once sat in Congress, the executive vice chancellor and provost is a noted experimental physicist, the assistant dean of the Graduate School of Arts and Sciences used to be administrative assistant to the governor of Michigan. Precisely because they can't be stereotyped, those in charge of the University's operations and programs are as individualistic as the programs they supervise.

Conscious of these facts, one should be prepared for the presence of a Charles E. Thomas on campus. Everything about him is different except his appearance. A handsome, energetic man of 39, Thomas, who is director of a project with a curiously awkward name, the Work-Study Career Scholarship Program, looks precisely like a Hollywood casting director's idea of an "Organization Man." But he doesn't talk or act that way. For Thomas is a maverick—a fellow who juggles two jobs worlds apart. Three weeks out of every month he is immersed in the academic community as head of what he sometimes calls "Operation Bootstrap"; the fourth week finds him in Calion, Arkansas (population 500) functioning as vice-president of a family-owned lumber company, complete with sawmill.

Of this strange juxtaposition of careers, Thomas says matter-of-factly, "I've always been out on the Hill part-time. And I like it that way because I'm really an activist, not an academic intellectual. I've spent too much time doing things—that's my orientation." When Thomas proclaims himself an activist, he doesn't exaggerate. The days he's in residence at the University, he operates on a schedule which leaves little time for contemplation.

Yet, the image he conveys and paints of himself as a man-on-the-move and a free-wheeling pragmatist is not the complete Charles E. Thomas. For despite his disclaimers, he is a serious student who, if he ever found time to write his dissertation, could call himself doctor, for he has enough credits in sociology-anthropology to qualify for a Ph.D. degree. He also has earned an M.A. in ancient history and archaeology under Professors George E. Mylonas and Edward G. Weltin.

Perhaps because he is a hybrid—both lumber manufacturer and university executive—Thomas has a special kind of flexibility which enables him to administer a program at Washington University which is unique in this country. Supported with funds from the Human Development Corporation and a $150,000 grant from the Rockefeller Foundation, the Work-Study Career Scholarship Program was organized in University College to enable top-flight students from needy families to attend Washington University at night tuition-free while earning money for their living expenses during the day and the summers.

"The program, among other things," Thomas explains, "is tailored to provide a transitional period of adjustment from high school to college." Except in unusual circumstances, only youngsters whose parents have incomes below $5,000 are accepted, and they are recruited mainly from the inner city schools. Because Negroes constitute a large part of the student body at such schools, they comprise some 85 per cent of those in the program.

BUT WHY THIS CIRCUITOUS route—why this backdoor approach? Thomas is often asked. "Because," he explains, "nearly half of those coming out of the inner city schools who rank even in the top 20 per cent of their classes are at least a year away from being able to go into many of Washington University's college-level courses, such as English composition. Their scores on the tests we give prove that. They are woefully weak in reading, writing—all communication skills in general—and mathematics. The potential is there," he continued, "but they need more preparation. If they are to make it here they must far too often play 'catch up' and take some non-credit remedial courses which just aren't available in day school."

"The other 50 per cent can go into a program composed of all college-level courses, but for the most part they sweat blood at first," Thomas continued. "They pull themselves along through extra hours of work—shaving and traumatizing as they go. But because they find the schedule so rugged at first, they simply are unable to carry a full college load in the day school and also hold down a forty-hour a week job. And they need money, particularly during the freshman year, because most of them are broke when they get out of high school. It's true we
give them a full scholarship, but they still have their books, transportation, clothes, and living expenses, and frequently, an obligation to contribute to the family."

Thomas learned exactly what difficulties those from the ghettos encounter at a school with the high academic standards of Washington University in 1964-65 when he spent a year as assistant dean of the College of Arts and Sciences. "Because of very high entrance qualifications, we took in only a small number of Negro students at the undergraduate level," he recalled, "and of these few, about three-fourths failed to survive their first year."

Thomas brooded about these mortality figures because he felt that a great deal of latent talent was being wasted; that almost without exception the failures stemmed from inadequate preparation, not lack of ability. Couldn't some of these youngsters be salvaged? And didn't the University have a responsibility to the community to make certain that they were? Thomas thought so, and there were others in Brookings who shared his concern. "Maggie (Margaret) Dagen, assistant director of admissions; Ollie (Oliver) Wagner, director of admissions and registrar; and Lynn Eley, dean of University College, all felt strongly about the matter," Thomas continued. "We talked it over with the chancellor and Lattie Coor, his assistant at the time, and came to the conclusion that something must be done."

"We'll get the money for the pilot project," they told me. 'You start it!' And that's how it happened. I put the program together out of whole cloth, borrowing the best that I had learned from my sociology training, drawing on my limited experience interviewing in the Pruitt-Igoe Housing Project, and my familiarity with the sawmill community down in Arkansas."

The program was launched in the fall of 1965 with a pilot group of twenty. Washington University not only granted the students in this project full scholarships for evening study, but arranged to get them good paying jobs in the daytime, most of them tied in with their academic interests. Among the companies cooperating in this program on a major scale are: Anheuser-Busch, General American Life Insurance, Monsanto,Ralston-Purina, Reynolds Metals, Stix, Baer & Fuller, Union Electric, and Wagner Electric.

The whole program is geared to the needs of youngsters who require a bridge to carry them across the gap that separates high school from college. In the Work-Study Career Scholarship project they don't have to take a full, overwhelming academic load. University College, unlike the day school at Washington University, does not insist that they take a certain number of hours each semester. And most of them, by working a nine-to-five schedule the first year and during the summers, earn enough to free them from financial worries which are the number one distracting force.

To ease their burdens still further, Washington University provides tutors for those who need special help. Thomas calls the tutoring phase of the program "a sort of one-to-one reinforcement technique," and credits it with pulling many a student over a particularly difficult hurdle. But perhaps the most powerful force of all in propelling these students forward is the influence of Thomas and his colleague, John A. Whitfield, associate director of the Work-Study Career Scholarship Program.

From their headquarters in the faculty apartments just off Millbrook, the pair spend a good part of their time counseling students whose problems range from a simple need for a sympathetic listener to a complex request for advice about an impossible family situation.

Even though there are now some seventy-five students in the program—sixty-five more entered last September—both men somehow find time to talk things over with their troubled students. Operating in an atmosphere of casual informality—a hand-printed sign on the door reads "Walk In,"—Thomas and Whitfield appear imperturbable despite the fact that they frequently deal with very real crises.

Of their efforts many students speak with genuine affection and appreciation. Perhaps the most moving tribute of all came from Brenda Thomas, whose dream it is to earn a certificate and eventually a degree in accounting. Speaking about Thomas's aid, she said, "He would help us any way he could. He was our guide and really became a sort of father to us. I mean any problem that we had we just felt free to talk over with him. He was real regular, on our level, and down to earth. He always looked out for us." She paused, thought for awhile, and then repeated almost to herself, "He was real regular."

Brenda, a 19-year-old who earns almost $400 a month in the accounting department of Reynolds Metals, is a friendly, out-going girl who gets along well with people. She was the first Negro hired to do office work at Reynolds Metals out in Baden. Impressed by her efforts, the firm has since hired two others from the program.

An ardent booster of the project, Brenda has done her best to encourage others to follow in her footsteps. "Of course it's a big sacrifice—to stay in the program you have to give up quite a bit, including many of your friends," she says candidly, but she makes it clear that the rewards are worth it.

One of those who has taken her advice is petite Cynthia Gray, whose ambition is to become a department store buyer. Cynthia's schedule this semester includes two regular courses, one in fashion and the other in retail advertising, plus a remedial course in English. The last, one of three such courses offered under the program, is taught in a living room converted into a classroom just outside the offices of Thomas and Whitfield.

At least one night a week they make it a point to turn up at these remedial non-credit sessions, which is one of the reasons why both of them manage to keep in especially close touch with those who need extra encouragement.

Cynthia, who works in the men's furnishings department on the first floor at Stix, Baer & Fuller, also finds that the program cuts into her social life. "With this program I'm always on the go," she explained with a smile, "and when the fellows ask when they can phone me I always tell them not until after 9:30 at night because of my classes. But without Washington University I don't know what I'd do. If it hadn't been for this program, I would never have been able to go to college at all."

Ronald Edwards, an apprentice draftsman at Wagner Electric, credits the Work-Study Career Scholarship Pro-
Cynthia Gray, a girl who looks like a model and wants to be a department store buyer, inspects some merchandise at Stix, Baer & Fuller where she is employed. After work, she rushes to classes at Washington University.

Pretty Brenda Thomas, recently married, wants to be an accountant. She is one of the original students in the Career-Study Program.

An effervescent charmer of a girl, Cynthia Gray (left) chats with Charles Thomas and fellow student, Maggie Edwards, before class. Students often make it a point to arrive early to talk with Thomas and his associate director, John A. Whitfield.
Steve Whitney (right) is one of two students in the pilot program of twenty youngsters who did so well in their evening classes that they are now in day school at the University.

A whiz at mathematics, Alan Cassidy is aiming for a Ph.D. An "A" student, Alan admits he has to concentrate on his studies. But he confesses he doesn't mind. "What I get is worth a lot more than what I give up," he said candidly.

One of the aims of the Work-Study Program is to stimulate the students with the greatest drive and ability to go on to day school in their sophomore year. To enter the College of Arts and Sciences with a full schedule, a youngster in the Work-Study Career Scholarship Program must maintain a B average for two semesters. Of the original twenty, two are now in day school at Washington University on full scholarships, Earcie Allen and Steve Whitney.

Steve is a quiet, introspective lad who wants to be a chemist or a chemical engineer. Right now, he's carrying a stiff academic load which includes organic chemistry, physics, and political science. In between classes he squeezes in about twenty hours of work as a laboratory technician at Monsanto. He's finding it a tough grind, but Thomas is confident that he'll make it.

"We caught Steve when he was really down at the bottom," Thomas recalled. "He had flunked out of Rockford and was working as a janitor. But he still had the desire to go to college and was attending the University of Missouri in Normandy. Every bit of the money he made went toward his tuition there, and he had nothing left on which to live. Sure, he still gets discouraged and he's sometimes not quite sure about the whole thing, but he's far enough along now so that when he has doubts he says to himself, 'Look, I just can't turn back now.' In other words he's finally developed the impulsive or compulsive need that most middle-class students show."

This belief that the majority of youngsters from the ghetto lack the particular type of self-sustaining motivation that is built into students from the more affluent sectors of our society is one that runs like a refrain through Thomas's conversation. It explains why, he believes, the Work-Study Career Scholarship Program has such a high attrition rate. One out of every three students in the program fails or drops out of Washington University, but only 5 per cent give up their jobs.

"The really sad thing about this is," Thomas explained, "that many of our drop-outs are really the kids with the greatest ability. But somehow or other the deferment of pleasure idea which is embedded in the middle-class conscience just isn't part of the makeup of these teenagers from the poverty areas. They have what I call a 'Saturday night syndrome.' Their philosophy is 'Play now, pay later.' For many of them college isn't a must, it's the frosting on the cake. They want a university education—it's a beautiful dream—but once they're into the guts of what college really is, they find the daily grind too taxing. That's what we're fighting all the time."
"I think this comes from the more volatile Negro personality produced by the ghetto way of life. One moment they are ebullient, the next moment ready to catch the bus to Nowheresville. It's this up-and-down roller coaster quality—once moment the serious student, and the next throwing down the books to go off with a friend—that so often defeats them." But, Thomas pointed out, "it is this same resiliency that enables the Negro to survive."

As he talked, Thomas was careful to make clear that his remarks should not be construed as a criticism of the ghetto-reared Negro. "They have to learn to roll with the punches, to adapt to constantly changing circumstances. But out of this comes a very different attitude toward life from that of the white middle-class.

"Because we are so anxious for these students to make good on the University campus, we are often tempted to feel terribly disheartened when one drops out of the program. But we just can't afford to let such disappointment overwhelm us. We must keep our perspective in order not to short-circuit our efforts for the majority. What we have to remember is that even with individual counseling, remedial groups, and private tutors, what we are doing is only a will-o'-the-wisp alongside the powerful internal forces that are still the average ghetto Negro's conditional responses to what is good and what is bad; what gets priority and what doesn't.

"Jobs are priority. That's why they stick to them. As one youngster told me recently, 'When money troubles come in the door, love flies out the window.' This boy had an old car in which he drove his girl friends all over town. Then the transmission fell out of it, and when that happened he told me his female friends just said, 'Bye, bye, birdie! With his love life on the shelf, he's studying harder and doing better. It happens that he's on a see-saw between staying in and flunking out. The fact that he had trouble with his car may just be the determining intervening factor responsible for this boy making it at Washington University. Often a little thing like that will make all the difference. It shouldn't but it does.

"Not all of the students who wash out of the program, however, give up school completely. Out of the first seven or eight students who flunked, five are going to college someplace else where the scholastic standards are less demanding. So you see there are side benefits. At least, that's management's rationale at the moment anyway. Also, you've got to remember that we are giving these students the opportunity to work in an integrated situation in large American corporations. They learn more from that than they do from college," Thomas added.

Thomas's evident sympathy with the Negro students in the Work-Study Career Scholarship Program does not, however, blind him to the struggles of the white youngsters in the project. They too have problems, but of a different kind. One such student is Alan Cassidy, a tabulator operator at General American Life Insurance Company. Alan flunked out of Cleveland High because, he explained, "I didn't have good study habits and I cut classes. After that experience," he continued, "I straight-

THOMAS, IT WAS APPARENT, could have gone on for several more hours, but just then the shrill ring of the telephone stopped him in mid-sentence. He picked up the receiver, propped his feet on the desk, and listened patiently to still another anxious student. His informality and easy manner suited his surroundings which are unpretentious even by campus standards.

A few archaeological prints on the walls, a spindly stripling of a philodendron struggling up a corner pole, a large, red Coke cooler set squarely in the foyer—all add a bit of warmth to the place, but fail, somehow, to relieve the over-all bleakness. It's not that Thomas is anti-Bigelow or Herman Miller—there's simply no room in his budget for anything except essentials.

Perhaps that's why a handsome clock with a bronze face and oval, walnut frame set squarely on the wall attracts so much attention. In the midst of such Spartan simplicity, it looks richly ornamental. And that's exactly what its donors intended. It is a very special clock presented to the head of the program by the original twenty students enrolled in the project. Charles Thomas, the administrator, is careful not to mention this fact, but Brenda Thomas, the aspiring accountant, is not so reticent. "We gave it to him at a party," she recalled, "because we wanted him to know how very much we thought of him.

It's the kind of a present most people receive only when they quit or retire. But, then, Charles Thomas isn't like most people.
Twenty years ago Washington University Alumnus David Leigh began a career in the infant air transport industry as manager of the Lambert St. Louis Airport. The aviation industry, the airport, and Leigh have grown up together since then and all have prospered.
AIRPORT MANAGER

By DOROTHEA WOLFGRAM
Office of Publications

IN 1947 LAMBERT ST. LOUIS AIRPORT advertised the creation of the position of assistant airport manager. A young Washington University graduate who had lately returned to St. Louis to work in the airport’s control tower was attracted by the offer, took the required civil service examination, and shortly found himself moving into an office in the terminal. Thirty days later the manager quit, and the new assistant manager was promoted.

"Now it seems rather naive of me to think that after thirty days’ experience I could handle the job. I knew then that I had no idea what I was getting into. What I didn’t know was that I never would."

Washington University Alumnus David Leigh is the man ultimately responsible for everything that occurs within the complex which makes up one of the nation’s major air terminals. In two decades he has seen the industry he serves grow from infancy to troubled adolescence, fraught with the turmoil of the jet age. Under his management the St. Louis terminal has moved from a headquarters for amateur pilots, small passenger and cargo carriers, and Sunday sightseeing flights to the nation’s twelfth largest airport in terms of passenger traffic, eighth largest in commercial airline traffic, and sixth largest in private plane traffic. From his office windows David Leigh has watched neighboring McDonnell Company grow from an operation which occupied one rented hangar to one of the nation’s largest aircraft and spacecraft centers.

In 1936 airport headquarters moved from an old yellow brick building on the west side of the field to the spacious glass-walled arches of a new southside terminal. Within a few years, concourses on the east and west began to extend farther from the main terminal to accommodate overflowing traffic. The central portion of the building is now undergoing a seven million dollar expansion which is scheduled for completion next March. By that time plans will be well underway for a new cargo complex and for alterations to handle the non-stop international flights which Leigh is sure will operate out of St. Louis within five years.

David Leigh is one of those fortunate men who loves his work. He calls it “the most exciting job in the city.”

"It would take an offer more enticing than I can now imagine to lure me from St. Louis. I wouldn’t trade my position with anyone, but pin me down. After all the ecstatic enthusiasm, and ask me what I do and I’m dead.”

His office, a spacious corner of the main terminal structure overlooking the concourses and the field, is a crossroads of traffic, personnel, administrative, and public relations problems. Yet engaged in a telephone conversation, conferring with an employee, studying construction plans, jotting a note on an already full daily memo pad, David Leigh seems to have an omnipresent, half-conscious awareness of the activity on the field below. He may, at any moment, grab a pair of binoculars from a desk drawer to train them on the field, explaining, "An auto out there always upsets me," or, "There are some construction barricades on the field that crew should have removed."

From this office David Leigh serves as landlord, engineer, business executive, public relations man, father confessor, civil servant, and in a hundred other roles, as the hour or moment demands. The day can be routine or filled with crisis.

Leigh smiles like a conspirator at the memory of the day last summer when the Beatles arrived. The silver plane, by carefully planned arrangement, taxied up to the terminal observation deck where thousands of teenagers were held back by police, then turned tail and scooted off to a far side of the field. There a waiting auto spirited away the deplaning quartet, and teenagers returned home somewhat disappointed but untrampled.

On Saturday afternoon, December 17, holiday travelers jammed the terminal lobby, but arrivals and departures were going almost without a hitch. About four o’clock a janitor picked up a cardboard shoebox which had been left under a chair in the main lobby. He placed it on a seat and opened it. Inside were a dry-cell battery, wiring, a clock, and several sticks of dynamite. The man closed the box and walked away to tell terminal officials. Police were called; airport employees cleared the lobby; but before a demolition squad arrived, the homemade bomb exploded, damaging property but injuring no one. Hastily the damaged lobby area was roped off, and the terminal returned to its business of departures and arrivals. Four days later police and FBI warrants were issued against a young engineer who lived near the airport, but no clear explanation of why the bomb was planted has ever been established.
A month later, on January 24, about sundown, heavy winds began to sweep the airfield. Anticipating a severe wind and rainstorm, the airport batten down for a lashing. As the wind picked up, accompanied by hail, approaching planes were ordered on "hold patterns" above the storm; employees who could were ordered to leave the glass-enclosed control tower. Electricity went off and blacked out the terminal and field until emergency auxiliary power took over. For a short time all operations were suspended as a tornado blew over the field, having touched down in residential areas south and, later, north of the airport. Although light planes had been damaged by the hail, normal air and ground traffic at the airport was resumed within half an hour.

To day Dawns that airport manager David Leigh knows what his responsibilities will entail, but, says the veteran improviser, no day passes without humor, as well as crisis. Every unusual problem occurring day or night in the teeming terminal eventually finds its way into his hands—the most outlandish suggestions, the biggest cracks in the most humorous situations.

In 1940, when Leigh was a senior in business administration at the University, he joined a pilot training program and received his pilot's license. After graduation he faced the choice between marriage and an air force pilot's career, at the time mutually exclusive alternatives. He chose marriage, but the awakened interest in flying proved irresistible. After a year as manager of the old Washington University bookstore-quads shop combination, he joined American Airlines in Chicago as an operations agent. The next year he moved to a position with the old Civil Aeronautics Administration. His work in air traffic control bounced him and his family around the Midwest during the years of World War II while he worked as a civilian on military airfields. Early in 1947 it landed them again in St. Louis where his career in airport management began.

Like most terminals serving large metropolitan areas in the United States, Lambert St. Louis Airport property and the central air transport complex are owned by the city. Air traffic is regulated by the CAA's successor, the Federal Aviation Agency. Space within the terminal, use of runways, gates, and support facilities are rented to airlines, to the state and federal government, and to other allied air transport industries and services.

"McDonnell Company owns property adjacent to the airport, but like the air carriers it is an airport tenant in use of runways and support facilities," Leigh explains. "The airlines, large and small, are tenants. The Missouri National Guard is a tenant. Parking concessions, insurance companies, auto-leasing firms, cargo carriers, and dozens of other ancillary enterprises lease airport space. This is why much of my time is spent as a landlord—arranging, revising, and enforcing rental agreements."

"Right now there is a piece of property adjacent to our land which has been owned and used by the Atomic Energy Commission as an atomic waste disposal area and is to be declared government surplus. We have a good chance of getting it. We need room for expansion and, besides, it is on our runway path and we don't want any major industrial building there. The only problem is that it is radioactive—mainly a low grade radioactivity which will be safe if we cover it with a layer of dirt, but in one spot, if you go down fifteen feet, the ground is dangerously radioactive and will be for the next 500 years. I'm wondering over seeing that the lease we draw up will communicate that fact for the next 500 years, no matter how many times the property might change hands."

Leigh may spend the afternoon with the city airport commission, the policy-making committee of laymen who regulate airport growth. He calls the "those wonderful men I work for and because of." He may talk to a group which wants to start a new "feeder" airline; spend a half-hour with an airline stewardess who has come in to talk, taking advantage of his open-door policy; check on a nearby resident's complaint that someone was revving jet engines far into the night—a complaint which had roused him at his home adjoining the airport—or devote the morning to inspecting the terminal expansion.

"In addition to the business administration degree, I wish I had degrees in law and civil engineering. Just those three might be all that are absolutely necessary," he laments. "The rest could be played by ear. This way I end up by knowing a little bit about a great many things. Thank goodness I have an accountant, an engineer, and plenty of well-trained people working for me. My job is to see that they can work together with a minimum of interference. The rest is public relations."

Aviation magazine recently called Leigh "one of the diamonds in the sometimes rough aviation industry." He takes the praise with a wry smile.

"The only difficult thing about my work is both discouraging and exciting. Right now, I have the feeling we are right back where we were fifteen years ago, when we saw the jet age approaching. In the next five years our passenger load will double and our cargo load will triple.

"We need from $22 to $25 million for expansion. Airports in every major city need at least that amount and for many the estimates run into the hundreds of millions. In five years we will have entirely new battles to fight and we can't even foresee now what they will be because ours is a business that is moving at such a pace that planning for the immediate future is work for a prophet. Whatever else an airport manager might be, he is not a prophet. Thank goodness the future comes at us only one day at a time.

"But then after a few months in this job I decided to take things as they come, to call the unexpected fascinating and to love it." And he does.
It is estimated that there is one suicide committed every twenty minutes in this country. Chances of preventing suicide now are greatly improved because of a pioneering study by Dr. Eli Robins and Dr. George E. Murphy of the Department of Psychiatry of Washington University's School of Medicine.

SUICIDE

"I don't know why I'm calling, really. I don't think you can do anything for me," the woman said.

"I'll be glad to try," replied the man who took the call for Suicide Prevention, Inc.

"You don't know what a mess I've made of things," the woman said.

"Go ahead. Tell me what's happened."

"It's really hopeless. The plain truth is that I'm a drunk. I've made a mess of my life and my husband's life. I just can't stop. I was sober for awhile a couple of weeks back. Now I'm drinking more than ever; I couldn't feel lower."

"Are you alone?"

"My husband left me last week. He said he'd had it, and I can't blame him. I'm a complete failure. The doctors haven't helped me, the AA hasn't. I know I have to do it myself, but I just don't have the strength to fight it. I'll tell you—I've been saving up sleeping pills and the way I feel I'd like to take them right now."

"Where is your husband?"

"He's on a trip back east."

"Do you have any relatives in town?"

"Oh ... my sister. But she's fed up, too."

"Are you sure she couldn't help?"

"She's never been able to help before. Why should it be any different now?"

The conversation went on for about 15 minutes, but the man, a volunteer for Suicide Prevention, didn't get very far. He had to make many calls before the crisis was over: to the woman's sister, other relatives, her doctor. Finally, she agreed to go with her sister to enter the hospital—six hours after the life-and-death dialogue began (the dialogue was altered here to prevent identification).

That the call was a matter of life-and-death was made reasonably certain because of a pioneering study conducted by two Washington University psychiatrists. Before the study there was no scientific basis on which to evaluate which individuals are serious suicidal risks. There was no scientific evidence to refute popular old wives' tales such as "people who talk about suicide never do it."

It turns out that this is a dangerous myth, particularly in reference to alcoholics and people with depressive illness, and the men who thoroughly deflated it were Dr. Eli Robins, head of Washington University's Department of Psychiatry, and Dr. George Murphy, associate professor of psychiatry. They probed in great detail the circumstances which led to all 134 suicides reported by St. Louis and St. Louis County coroners over a year's time. This was the first systematic study of an unselected group of consecutive suicides. Dr. Robins, Dr. Murphy, and three senior medical students conducted several hundred detailed interviews with relatives and close friends of the deceased and also with job associates, clergymen, landladies, bartenders, nurses, attorneys, policemen, and physicians. In addition, they examined hospital, police, and Social Service Exchange records.

The Robins-Murphy study strongly suggests that society can do a much better job of preventing suicide. The gross statistics alone indicate that it is a major problem: suicide is the eleventh leading cause of death in the United States, with the known number of annual suicides being more than 20,000. More important as far as prevention is concerned, the University research showed:

1. 94 per cent of the cases were psychiatrically ill.
2. 75 per cent of the above group had depressive illness or chronic alcoholism.
3. Most people in these two critical groups had indeed talked about committing suicide.
4. Many had seen doctors shortly before their suicides.

The finding that the bulk of the suicides occurred in only two clinical diagnoses reduced the problem of prevention to manageable limits.

In the case of depressive illness, the individual usually is psychiatrically well before the onset of the illness, Dr. Murphy pointed out. Then, in about 90 per cent of the cases the illness clears up within a year, and the patient returns to normal. "Suicide is especially tragic when the prognosis for the underlying illness is so good," he added.

The depression is typically characterized by symptoms such as loss of interest in work and in social and recreational activities, insomnia, loss of appetite, and chronic fatigue. A critical point in making the diagnosis is in the quality of the patient's depression. "This is difficult for him to put into words, but the despondency and hopelessness are usually much deeper than one experiences, for example, after the loss of a close friend," Dr. Murphy said. Only five of the sixty depressives studied were under forty years of age, which implicates the middle-aged and older depressives as the most vulnerable patients by far. (National vital statistics show that the older age groups produce the most suicides; less than 8.5 per cent of all suicides come from the 15 to 24-year age bracket.)

Since many depressive patients had seen doctors about their symptoms, the doctor's office appears to be the first place to look for prevention.
line in preventing suicide in this group. The pivotal position of doctors was emphasized in the following case history described by Dr. Robins: A middle-aged man had led a relatively healthy life, with no history of depression. He was married and had a steady job. Then one year before his death he began to develop his depressive illness. He had an assortment of physical complaints, including headaches, dyspepsia, insomnia, fatigue, and had completely lost his sex drive. Despondency, guilt over his illness, and self-disgust plagued him, and he lost interest in all social activities. He told his wife that he wanted to die and was thinking of committing suicide. He constantly reiterated that she shouldn't spend much money for his burial. He saw physicians about his symptoms six months, and, then three months before his suicide. On the morning of his death, he told his wife not to buy him new clothes because he wouldn't need them. Then he put away his hat and coat, took off his glasses, and went into the basement. His wife thought he intended to clean up some trash. He hanged himself.

Families and friends seldom see any significance in the individual's preoccupation with death or talk about suicide. "Oh, Harry would never do that," is a typical response. They tend to believe that suicide results from a rational process, rather than the irrational processes described in the Washington University study. But perhaps more critical than public education, Dr. Robins and Dr. Murphy stress, is the need for doctors to be keenly aware of the types of patients now known to be suicide risks. Relatively few patients they studied had actually told a doctor of their suicidal thoughts. "But doctors should make a serious effort to find if the intent is there. Dr. Robins did a separate study of consecutive patients admitted to Renard Hospital and found convincing evidence that they would have told their doctors about suicidal thoughts—if they'd been asked," Dr. Murphy said. If intent is established, then hospitalization until the depression subsides is the surest way of preventing suicide, he added.

However, even if doctors more frequently put their finger on the possibility of suicide, some families might balk at hospitalization. Much public misunderstanding of mental illness still exists, and such hospitalization to some people is considered a stigma.

One approach to promote better public understanding is through community programs such as Suicide Prevention, Inc. Doctors Murphy and Robins both serve on the board of directors of this voluntary group, which receives office space and some staff assistance from the St. Louis Mental Health Association. Its volunteers include Washington University graduate students in psychology and sociology, nurses, social workers, ministers, and individuals with special interest because of personal experiences with suicide in their family or among their friends. They take calls on a 24-hour basis, which provides an alternative for distressed individuals who have no place to turn.

Most calls aren't so dramatic as the one described at the beginning of the article. A variety of problems is encountered and the volunteers are carefully trained by Dr. Murphy and others to make intelligent referrals. Groups similar to Suicide Prevention, Inc. exist in some thirty communities, and their effectiveness has been enhanced by the solid evidence being provided by Washington University, and more recently, by a research group at the University of Washington Medical School. The Seattle study substantially verifies the Washington University research.

A needed study that hasn't been done in any of the suicide prevention programs to date is a systematic survey of the people who call. Again, St. Louis has become a pioneer in research in this area. Dr. Murphy, together with members of Washington University's Social Science Institute, is doing a follow-up of callers and detailed interviews already have been made in forty cases (about 400 people have called Suicide Prevention since it began last November). Many of the callers probably fall into a broad psychiatric category known as "attempters." Before the intensive study of St. Louis area suicides was begun, Dr. Robins surveyed a series of attempted suicide cases brought into the St. Louis City Hospital.

There were marked psychiatric and age contrasts between the attempters and the successful suicides. The mean age for the attempters was 39, as compared to 56 for the successful suicides. Patients with neurotic illness were fairly common among the attempters, but almost never were found among the suicides. Although there was some overlapping in the two groups, the contrasts showed that the attempted suicides were essentially a separate clinical problem.

It seems likely that this group of psychiatric patients contribute to the notion that people who talk about suicide never do it; and, some in this clinical category apparently do make suicide attempts in a desperate effort to draw attention to themselves.

In addition to the study of people who call Suicide Prevention, Professors Murphy and Robins are planning a detailed follow-up investigation of alcoholics who commit suicide. While doing their original 1957 suicide survey in St. Louis they found that coroners rarely failed to make an accurate diagnosis of chronic alcoholism, and this fact suggested a readily accessible area for research. One could
concentrate solely on alcoholism in suicide without spending considerable time doing interviews which lead off on various tangents. And there is a special need for studying the alcoholic group: It was strongly implied in the original survey that alcoholics are vulnerable to suicide after the loss of a close personal relationship (as opposed to the depressives whose prime concerns were with their inward symptoms and feelings). More detailed information on the alcoholic group, then, could make suicide prevention more effective.

To illustrate this vulnerability, Dr. Robins wrote the following on one of the alcoholics who had killed himself: "He appeared sad about his wife's leaving him and repeatedly asked her to come back. She refused. Four days before his suicide he was served with divorce papers. He became much quieter than usual but continued to drink large quantities of alcohol. On the morning of the day of his suicide, he phoned his wife to ask for one more chance and was refused. That afternoon, while intoxicated, he called his pastor and asked him to come to his home for a talk. The pastor wasn't able to do so. Later in the day, the man shot himself in the chest with a shot-gun, using a stick to pull the trigger."

The man previously had talked about wanting to die. (Some psychiatrists interpret ambivalence in such conversations.) But when he decided to commit suicide there was no question. And the St. Louis survey showed that this was true of the overwhelming majority of those who committed suicide. The most common method of suicide was using a gun—44 per cent shot themselves. Next was hanging, which accounted for 22 per cent of the suicides. "These people really meant to die," Dr. Murphy said. "This was made clear by the careful way in which they made plans, in the means they used, and, in many cases, choosing isolated places for the act."

People still confuse attempters, however, with the more serious potential suicide cases. This isn't too surprising in view of the fact that the Washington University studies were the first in the history of medical literature to clear up this misunderstanding.

"It still bothers me to recall the days when I was an intern," Dr. Murphy said. "We were told to handle cases of attempted suicide by 'calling the patient's bluff.'"

Today, the anatomy of suicide still is far from being understood fully, he continued.

But we must not ignore the knowledge that we do have. If physicians and others conscientiously applied what we now know about depressives and chronic alcoholics, he concluded, a substantial proportion of the 20,000 annual suicides could be prevented.
After the swollen Arno swept through the city of Florence last year, one of the enormous tasks it left in its wake was the rescue and restoration of thousands of priceless documents damaged by the flood. In this article, graduate student John Grandman gives some first-hand impressions of the rescue operation. The author is spending the academic year in Perugia on a Fulbright fellowship working with the same kind of documents he helped salvage after the great Florence flood subsided.

Flood-borne debris is heaped in piles on the banks of the Arno as cleanup operations proceed after the severe floods that struck Florence last year.
By JOHN GRUNDMAN
Graduate Student in History

POSTSCRIPT FROM PERUGIA

On November 4, 1966, after five days of heavy rain in the Val d’Arno, curiosity seekers stood in the streets of downtown Florence and watched the water rise above the banks of the Arno River. Few dreamed that they were watching the first stage of one of Italy’s worst disasters and the worst flood ever in a town whose chronicles are full of floods. Few in fact dreamed or knew anything, since, despite the fact that the flood was known to be on its way the day before, no announcement had been made to the curious and startled citizenry.

Italy is a narrow country and its rivers flow generally from the center to the sides. Like the others the Arno is normally a rather small stream. You could pour its waters into the Hudson or the Mississippi and hardly notice the difference. The Arno on November 4, however, was quite another matter. The water rose very quickly and some of the more curious found themselves running for their lives as the river found its way into the streets behind them. By afternoon, it was rushing through downtown Florence with incredible violence, and before it began to recede during the night it had reached a height of twenty feet.

Among Italian cities, Florence is a “new” town. Although its original foundation dates back to about 200 B.C., it never became an important city in Etruscan and Roman times, and very little of it can definitely be said to belong to those periods. Little is known about it, in fact, before the high Middle Ages. Florence is a great city today not primarily because of its present economic, political, or administrative importance, but because it is a monument to the culture of Italy and Europe. From the thirteenth to the sixteenth century it was the most important of the great city-states and the center of Renaissance art and culture. The richness and variety of its cultural patrimony are inferior only to that of Rome itself. Among Italians, Florentines are considered a proud—even haughty—people. Little wonder.

The severity of the disaster was largely conditioned by the topographical development of the city. The original town was founded on the right bank of the river and expanded to the other side. It developed in a series of three concentric circles, centered on the Arno, and circumscribed by three successive sets of walls. One of the qualifieds of the city is its compactness. One can tour most of the important monuments on foot, and it is easy to reach the river from almost anywhere within the central, historically and artistically important part of the city.

In other words it was easy for the river to reach those parts of the city where it was likely to do the most damage. As the waters of the Arno receded, after reaching some six feet above the highest previous recorded level, they left a coating of mud, oil, and debris on more than one-third of the City of the Red Lily. More subtly, the waters had reached deep into its cultural recesses. On the walls of art galleries and in the stacks of libraries and archives, they destroyed or threatened to destroy a major part of the precious heritage of the city, patiently collected and preserved over a millennium.

The problems faced by the rescue operation were enormous. The whole city was convulsed by the cleanup operation. In addition to the libraries, museums, and churches, some six thousand stores had been flooded, as well as the streets and squares of the central city. Transportation was in chaos. The city was without drinking water because its aqueduct was lost.

Among the worst casualties were the Biblioteca Nazionale and the Archivio di Stato. The National Library at Florence is the finest in all of Italy. Here an incredible twenty feet of water had damaged some 1,300,000 volumes, and completely destroyed the catalogue. At the State Archive, the water had reached a level of about six feet, damaging 45,000 manuscripts.
POSTSCRIPT FROM PERUGIA

The rescue operation began on November 6. Hundreds of students, scholars, and archivists converged on the Archivio di Stato and began to remove the manuscripts. The operation was extremely difficult. A section of the floor had fallen in, making entry and exit difficult and taking with it manuscripts that had to be recovered from the basement. In addition, transportation had to be organized, and there was no light. A lighting system and some trucks were furnished by the American Army base at Leghorn. However, by far the worst problem faced by the rescue operation at this point was that there was no place to take the recovered material.

On the evening of November 9, an emergency meeting took place at the Lions Club in Perugia to deal with this last problem. Lions Club members decided to assume the responsibility of finding places to dry the manuscripts in Umbria, the region around Perugia. For the major part of the operation, it was decided to use tobacco factories. The books from the Biblioteca Nazionale were concentrated in the large factories at Città di Castello, while the Archivio di Stato operation centered on Perugia and, later, San Justino.

On November 10, ten large trucks left Perugia for Florence. The next evening, nineteen more, including the American Army trucks, arrived at the tobacco factory in Perugia, where they were received by Professor Roberto Abbondanza, director of the Archivio di Stato di Perugia, the planner and coordinator of the rescue operation. The trucks contained more than fifty tons of soggy manuscripts, some 15,000 pieces, or about a third of the flooded material from the Archivio. Among other categories, these included the records from suppressed monasteries in or near Florence, and those of the Captain of the Guelph Party, one of the most important political institutions of medieval Florence. They covered a period of some 600 years, from the fourteenth to the nineteenth century.

Most of these documents were written on paper, but some were on parchment. The difference is an important one, since while paper requires a relatively simple drying process, parchment is much more difficult. About the worst thing you can do to it is to get it wet, because if parchment is wet for any length of time it will rot.

The decision was made, in consultation with local and American experts, to reserve the parchment documents for the Archivio di Stato and begin to remove the manuscripts. For the rest, there existed at the factory four so-called "American cells"—heated and ventilated drying rooms, built on the model of those used in American tobacco factories. Drying in these cells meant the sacrifice of the covers of the documents, since they were almost universally of parchment. In some cases this was a double loss, as a number of these covers were palimpsests, erased but still readable texts sometimes several centuries older than the documents they covered.

As the trucks rolled in, the documents were unloaded by chains of students. The condition of the documents was lamentable. Besides being thoroughly soaked, they were covered with mud and filth. A washing operation was begun, but it ceased on the first evening. On the twelfth, the decision to sacrifice the covers having been made, the job of stowing the material in the drying rooms began. This was a very large job indeed, as the documents had to be stacked in levels to the height of some fifteen feet. The human chains were again used for this work. It was a difficult and nauseating job; the books weighed on the average of from five to fifteen pounds apiece, while there were some enormous volumes that came to over a hundred pounds each, with their content of water, which had to be handled by two or three students. In addition, the wet bindings were giving off ammonia, and as the rooms filled up with books the air became foul, making it difficult if not perilous to work for more than a short time. What was worse, after a major portion of the job had been done, it was found that the manuscripts had been packed too closely. Several hundred man-hours were lost, and the job had to be done again.

The first drying operation lasted about a week. The books were then withdrawn from the drying rooms, still quite wet, opened, and replaced in the rooms for further drying. After several weeks, the collection was withdrawn from the tobacco factory still not quite dry, and room was made for it at the Archivio di Stato di Perugia, where further drying and a sterilizing operation took place. Here it remains, at the time of this writing. The drying operation is finished but the much more laborious and delicate operation of restoration remains to be done.

The cost has been high, but it will be much higher before the job is done. Close to $200,000 has been spent to save the Archivio, nearly a million on the Biblioteca Nazionale. It is estimated that complete restoration will cost about eleven million dollars.

One thing remains to be said about the operation: It was not done—people did it. In Florence thousands participated. In Perugia there were about five hundred volunteers, most of them high school and university students, working at one time or another. Most of the staff of the Archivio di Stato of Perugia participated, as well as local scholars and experts from Rome and Florence. Foreign students were also prominent, including American, English, and Australian.

Among all these volunteers, as inspiring as their efforts have been, one person stands out. Confronted by what was, to all appearances, an impossible task, Professor Abbondanza conceived, planned, and personally supervised every stage of the rescue operation. He worked day and night for weeks, shuttling between Perugia, Florence, and Rome, finding help, coordinating the various efforts involved, obtaining supplies and facilities, and raising the necessary funds. To his efforts, carried out under the most trying of conditions and sustained without regard to health or personal comfort, is largely due the rescue of the documents for the State Archive, and he has also been closely involved with the work at the National Library.

His work, however, merely typifies the energy and dedication that hundreds and thousands of volunteers brought to the task.
Delicate job of removing mud and erasing water damage from priceless documents is tackled by a volunteer worker.

Restored books go into a gas chamber to dry pages and to remove damaging micro-organisms.

Tons of manuscripts from flooded libraries and archives in Florence are stacked in a warehouse. Each volume had to be dried and painstakingly restored, page by page.
Liselotte Dieckmann, professor of German and chairman of the department at Washington University, is both a noted scholar and an inspired and inspiring teacher. She holds a Ph.D. degree from the University of Heidelberg and has studied at the universities of Freiburg, Berlin, Cologne, and Frankfurt. In this brief but cogent essay, she pleads the case for greater emphasis on the humanities at American universities—and especially at Washington University.
HUMANISM AND THE UNIVERSITY

IF WHAT I INTEND TO SAY is not altogether flattering to Washington University, I feel nonetheless that, as a long-standing and rather loyal faculty member, I wish to say something on a controversial subject.

Having been raised on the European continent, I had never thought that humanism could ever or anywhere be a controversial subject. We were brought up with Greek and Latin, the learning of foreign languages, and the reading of their literatures; we went to museums, concerts, opera, and theatre and became, by the mere presence of school, parents, and cultural life, educated human beings. This was, I am sure, at the time of my early youth, an unquestioned upper middle-class ideal, not shared by either the aristocracy or the lower classes.

When, as a young girl, I first went to Paris, I was introduced to the literary successors and heirs of Mallarmé, circles I would also call upper middle class. In that esthetically oriented society with its unlimited love of and understanding for things of beauty, my own education seemed minimal compared to its profound knowledge and insight.

At the university I studied under some great humanists, again in an atmosphere where the value of humanistic education was never questioned. It must be added that all of this took place years after the first World War. We had been bombed and gone hungry, survived revolutions, military occupation, and inflation—but nothing could have convinced us that humanistic education might not be the best protection against the rather cruel vicissitudes of life. In fact, I am rather strongly convinced that it gave us indeed a moral support of incomparable quality.

It must now be said that we were criminally undereducated in political matters and that our rather general contempt for the sciences stemmed from complete ignorance. For these reasons I do not mean to say that this was an ideal education; on the contrary, I find it shocking. We were raised to be an elite, at a period of history which tended toward socialism and communism. Fortunately, most of us had, if not a political, at least a social conscience with strong egalitarian leanings. But if my generation shared the guilt for letting Hitler come to power, it was because of our unwillingness and inability to face political realities. Even after we had to leave the country of our youth we remained esthetes.

Coming to the United States and to an American university with my naive ideal of education was a cultural shock of the first order. Many of my German friends never got over it. I was fortunate in having been given a chance to teach and thereby to adjust rather better than many of them. I was quickly separated from my cultural past by some extremely well educated American soldiers whom we prepared during the war for the military government of Germany. They were a truly educated group of men, full of intellectual problems, with a great deal of knowledge, insight, and wisdom. They loved good music and poetry as much as I did, but they had a lot to teach me about what they jokingly called the facts of life.

Their education, as humanistic as any I have ever known, differed considerably from mine. It was no less than mine a world of the mind rather than of practical concerns, but it had a different orientation. They loved other music, other poems; their view was away from antiquity and toward the modern world. The past of mankind interested them less than the future. They could speak of jazz with the same enthusiasm with which they listened to Bach; and they might have preferred to quote T. S. Eliot to Shakespeare. In other words, their humanistic education had a completely different content. Moreover, their attitude toward their education was much humbler than my own. Nothing was taken for granted, not even the right to such an education. Every value was turned over in their minds and challenged. They came from no tradition, and no environment had been propitious to their intellectual development. What they had learned they owed largely to their own intellectual curiosity and their open minds.

What I learned from them, and have since found confirmed in many American circles, is the fact that humanistic education in its broadest sense is strangely independent of tradition, country, or social class. Love of poetry, music, and the arts, philosophic thought, and a lively interest in the historic past flourish on many soils, in very different social groups, and are derived from vastly varying historical traditions. The classical authors and the
European tradition are undoubtedly not the only source of this humanism—an old European term which, perhaps, we ought to replace by a more valid one. From this point of view one can be rather hopeful that, no matter what college curricula are apt to do to higher education, the concern for cultural expression will never die out.

On the other hand, cultural interests are still at the margin rather than in the center of American life. We need only of the perennial financial crises encountered by symphonies, museums, the Met, and many other institutions. It is almost unthinkable that the Paris Opera might ever threaten to close its doors for financial reasons. And this marginal existence of culture is most strongly expressed in the curricula of the universities.

There is the point where I am critical and at times angry. Curricula seem an entirely uninteresting problem. What does it matter for a person’s education whether he must take six or twelve credit hours in any given field? Knowledge is not measured by hours per week. But knowledge is taught by a climate of thought, of interchange of ideas, of presentations in form of lectures or artistic performances. Above all, knowledge is taught by quiet reflection, leisure time, and a lack of excessive pressure. Unless education refines a young person, makes him more sensitive to esthetic as well as social problems, sharpens his senses as much as his mind, makes him reflect upon himself and his environment, forces him to ask critical questions on values and ideas, unless all of this and much more happens to him in his formative years, education has missed its purpose. Here is the point where many universities, including Washington University, have failed to strike a fair balance between the enormous demands of science education on one hand and the liberating effect of the humanities on the other.

"We might, as a race, get along perfectly without atomic bombs. I doubt that we would live long without the arts."

Our actual climate of thought does not further such contemplation. It further the arts only half-heartedly and the disciplines which preserve and interpret them only reluctantly. We still have no first-rate bookstore, no theatre, no concert hall at Washington University. Instead, science buildings grow like mushrooms.

I do not mean to say that we should not further the sciences. This would be both economic and intellectual suicide. I have long since learned that the sciences are intellectually exciting, and I regret that my education did not provide me with better tools for understanding much of what is done in physics or biology. I missed out badly in fields of vast and urgent interest.

But there should and could be a better balance. I fail to see why I should have to believe in the existence of two cultures. Let me hurry to say that most of my scientific friends are in fact highly educated and could serve as prototypes for the balance I am talking about. To be sure, the humanistic field is more accessible to a scientifically minded person than science is to the humanist. Here is the region in which higher education has an overwhelming and continuous obligation. The professionalism in all fields of knowledge, which has replaced, here as in most universities, the older ideal of a liberal education, makes, in its own way, the same mistake my education had made; it tends to be one-sided and narrow minded. I can think of nothing worse than a young man who is a bore in everything except his chosen field of specialization. The term humanistic no longer applies to such a person and the society which would consist of such people would find itself in serious trouble in all fields in which purely human decisions are of the essence.

For it remains strangely true that the disciplines called humanistic, whatever their changes and developments have been over the centuries, still direct themselves to the essence of man as a human being, as a feeling, thinking, decision-making, loving, suffering, unhappy, social, or unsocial being. And they are superior to any social science, medicine, or psychology in the one respect that they present to the young ideals and values in which the greatest minds of mankind have invested their most serious efforts and their greatest achievements. We might, as a race, get along perfectly without atomic bombs—I doubt that we would live long without the arts. Even if all past achievements were destroyed and forgotten, the arts would spring up long before the future atom bomb would be found again. In this strange phenomenone lies our best hope.
If the universities could learn again to look at man as a many-sided, but unified whole, they would, I am sure, find a way to overcome, or perhaps better balance, the present one-sided and overloaded, thoroughly unhumanistic education. What we all need, whether we are teachers or students, scientists or humanists, old or young, rich or poor, is time for reflection and thought. We do have time for talk and action, but we lack it sadly for contemplation. To think long and deep, to enjoy without shame, and to regain a tenderness for the lovely things of life and art—this would be a valid counterweight against our technology-ridden life.

We should seriously attempt not to overcrowd a student’s schedule and give him, in addition to pre-professional training and practical thinking, not only the opportunity, but more important the passionate desire to be truly “educated,” the wish to write well, speak well, cultivate his taste and his entire person. What Hutchins did thirty years ago in Chicago could be done with greater wisdom and experience now and here. Such attempts are under way at a number of institutions.

If Washington University would take it upon itself to spend the time, the thinking, a little money, and above all a sincere good will to make this University into a center of humanistic studies, it would be a great university. It has all the makings of such a center. Its beautiful campus, its comparatively small size, its easy communications, its central location in the country are all contributing factors. What is lacking is the spirit and the faith. Perhaps I might still be able to use the experiences of my own education in the service of a more civilized and a truly humanistic university.

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While the acoustics are far from concert hall quality in the garage of Alumni House, the cluttered room does provide a place for Van den Burg and his students to work and practice.
“I’VE LIVED WITH MUSIC ALL MY LIFE,” the spritely little man said in his heavy European accent. “When I was a child, I woke up with music and I went to sleep with music. I didn’t even know there was another profession besides music.”

For Herbert Van den Burg, it seems likely that there could never be another profession. He still wakes up and goes to sleep with music. In addition to his work as string consultant and lecturer in the University’s Department of Music, Van den Burg is solo violist with the St. Louis Symphony Orchestra and a private music teacher interested in the cultural development of the community.

Born in the Netherlands, Van den Burg studied at the Royal Conservatory of the Netherlands, where he was graduated with distinction. He also studied at the Ecole Normale in Paris.

While still a student, Van den Burg joined the National Opera Orchestra in the Netherlands, and within a few years he rose to the position of solo violist. Later he joined a chamber music group, the Quintet Instrumentale, and toured Europe and North Africa.

It was during one of these tours that Van den Burg was invited by Pablo Casals to join the Barcelona Symphony. Van den Burg had arranged to visit with his brother, then the assistant to Casals, while they were both in Paris, and it was through this contact that he came to the attention of the famed cellist. The invitation had to be declined, however, for the Spanish Revolution broke out and foreigners were not allowed to enter the country.

In 1929 Van den Burg came to the United States. His first home was in Philadelphia, where he accepted a scholarship to the Curtis Institute of Music. Later he played with the Philadelphia, San Francisco, and San Diego Symphony Orchestras. Van den Burg joined the St. Louis Symphony as solo violist in 1931.

The musical education which was to set the pace for his life began when Van den Burg was ten years old. He was given the viola to play in the family string quartet. His father, a music teacher at Leiden University, played the violin; a brother played the cello; and a sister played the violin. Another sister often accompanied them on the piano.

Perhaps the single most remarkable figure in Van den Burg’s childhood education was his great-uncle. The old gentleman, a famous oboist who had played with Brahms, stood like an avenging angel behind each child as he practiced. The price of a mistake was a none-too-light whack on the head from his cane.

Smiling at the memory, Van den Burg also told of practicing in a cold room with his coat on. Even today, Dutch houses are often heated by porcelain stoves in one or two rooms, and Van den Burg remembered that the lucky child who started practicing first took the warm parlor—the others were exiled to the cold rooms.

Although Van den Burg’s students today rarely suffer from the cold, they do practice in some rather un-musical places: the garage of Alumni House on campus and various unfinished rooms in the Community Music School.

He spends many hours each week giving lessons to everyone from children to grandfathers, housewives to professional men. Asked if he prefers advanced students to beginners, Van den Burg said, “I prefer those who really
Sitting in a piano-filled corner of the Community Music School, Van den Burg listens as one of his students concentrates on a lesson. The other girls are awaiting their turns on the shared violin.

love music. Maybe they are not so good, but if they enjoy the music, I enjoy the class.”

His own preference is definitely chamber music. “It is my first and last love,” he said, explaining the interest which led him to form a string quartet with Scipione Guide, once the concertmaster with Toscanini. The quartet has been very active in St. Louis in past years, presenting concerts of modern and classical music.

Next on his list is symphonic music, which he plays rather constantly during the 38-week Symphony season. Speaking of the tour from which he had just returned, Van den Burg described it and all other tours in the following sequence: ride all day on the bus, arrive at the motel in late afternoon, drop the luggage and hurry to rehearsal, return to the motel for one of those dinners that all taste alike, go back to the concert hall for the performance, then back to the motel to watch television until sleep takes over. Get up the next morning and head for the bus.

“If you can imagine 22 or 23 days just like this one, that is what a tour is like,” he said.

In addition to the impersonal surroundings, Van den Burg is less than fond of tours because they take him away from his wife and family. He has two sons, one an Army paratroop officer due to leave shortly for Vietnam, the other an English teacher, voice student, and opera magazine writer in Italy. Van den Burg’s older daughter is a lab technician at the University of Chicago and the younger daughter is in her senior year of high school.

Van den Burg admits that he has not followed the family-raising strictness of his own father. “I have never told my children what they should do in life,” he said. “And although none of them is a professional, they all like music.”

Music has provided the basic philosophy for Van den Burg throughout much of his life. “I once read a book by Einstein,” he said, “in which he stated that in order to understand the universe, man must learn to speak in a four-dimensional language. For me, music is one of the four-dimensional languages of all mankind. Through it, man can say all the most shallow and the most profound things.” Breaking into his quick smile, Van den Burg added, “It’s only limited by the intellect of the performer and the listener.”
Van den Burg and a student from the Department of Music relax for a moment during a lesson in the garage. Relics of earlier days of Alumni House "decorate" the room.

It was a cold, rainy day in Kenosha, Wis., when the St. Louis Symphony left for Toledo, Ohio, next stop on the tour. The group performed in five states, traveled 4,300 miles.

A veteran of thirty-six years with the St. Louis Symphony Orchestra, Van den Burg joins other members in the last-minute tuning and warming-up before a performance.

Musicians change into formal clothes before the Kenosha performance. With Van den Burg in the high school gymnasium is Carl Sonik, principal oboist.
At first glance, singing the praises of being "middle-sized" seems to be trying to make the worst of all possible worlds. In these days of bigger and better superlatives, if you can't be No. 1, at least you can say that you try harder; if you can't even get close to being the biggest, you can always claim to be a compact.

Washington University spokesmen for some time now have been describing the institution as "middle-sized" and claiming that all sorts of virtues are inherent in being neither too large nor too small, but just right.

Actually, there are many quite real benefits—so real that the people currently guiding the destinies of this university are determined that it is going to remain "middle-sized," despite the constant pressures toward bigness that expanding population and growing demand for universal college education impose.

The disadvantages of bigness are well known: the big university swiftly swells into the multiversity, packed with anonymous students and staffed with unapproachable faculty members, all being rapidly and impersonally processed on a computerized campus.

The disadvantages of smallness aren't so well known, but they are just as real. There is a certain critical mass—a size under which an institution has great difficulty in attracting first-rate scholars, particularly in the sciences. A university must have a good, well stocked library; it must be big enough to offer adequate research facilities, and most important, it must be big enough to give good faculty members someone to talk to.

An academic department must reach a certain size before it can be truly representative of the discipline it practices: organic and radio and physical chemists are all needed in a good department; ancient historians, medievalists, renaissance scholars, and specialists in modern history give depth and balance that a smaller faculty can't match.

Washington University can claim that it is large enough to have a truly first-rate library, essential research equipment, and well balanced departments. It is small enough, however, that members of one academic discipline can get to know and to interact with members of other disciplines. It is large enough to attract a varied student body from all parts of the country and from many diverse backgrounds, and yet small enough for the students to get to know each other. Most important, it is of a size where faculty and students can intermingle and interact.

At Washington University, we are determined to remain middle-size and to continue to offer the special and peculiar advantages a private institution of moderate size permits. Even more, we will resist trying to become "the biggest middle-sized university in the country."

We have been browsing lately through a fascinating little document called, "Who Comes to Washington University?" The report is based on a nationwide study of college students conducted by the American Council on Education. The Council gathered uniform data on entering students from institutions of all kinds throughout the country. The instrument used to gather the data is called a "Freshman Information Form," a four-page questionnaire which covers the students' backgrounds, achievements, expectations, self-impressions, and their impressions of the schools in which they enroll.

Entering freshmen at Washington University this year answered the questionnaire and their answers are compared with the national averages in the report. What is especially interesting is not so much what statistical differences show up among the different schools, but what differences the students think there are.

For instance, the students were asked to choose the adjectives that they felt best described their schools. Some 65.3 per cent chose "intellectual" to describe Washington University, as compared to 38.8 per cent for the national average. On the other hand, only 24.9 per cent of our freshmen described the University as "social," compared to 31.5 per cent nationally. The University's atmosphere was described as "warm," by 39 per cent of our freshmen, which was just under the national average of 43.3 per cent. Only 2.1 per cent of our freshmen considered the place "Victorian," compared to 3.3 of the freshmen across the country who gave that label to their schools.

In another category of questions, 78.4 per cent of this year's entering freshmen felt that there was "great pressure for grades," at Washington University. This sentiment was shared by only 55.1 per cent of the nation's freshmen in general about their schools. More than 35 per cent felt that "There is little school spirit" at Washington University, compared to 8.8 per cent nationally, while nearly 90 per cent of our freshmen felt that "The academic caliber of the students here is high," compared to 64.2 per cent on the national average.

While we still have a long way to go, we felt pleased that only 36.4 per cent of our freshmen agreed with the statement, "I felt lost when I came here," compared to 40 per cent on the national level, and that only 25.4 per cent agreed that "Students are like numbers in a book," compared to 36.2 per cent nationally.

Because the answers are so subjective, it is difficult to know if the differences between Washington University freshmen and freshmen elsewhere are significant. Still, it makes interesting reading. For instance, 85.1 per cent of our freshmen, compared to 87.1 per cent nationally, agreed with the statement, "This college builds poise."

-FO'B
The first days of spring bring life to the Brookings Quadrangle as they have for more than sixty years now. Above, Bill Caspary, assistant professor of political science, lends his guitar to an impromptu musical session. Below: Shelly Beinfeld, assistant professor of history, brings his class outdoors to take advantage of the pleasant weather.