- 11. R. W. Bortner and R. H. Rosenman, ibid.,
- R. W. Borner, L. P. 525.
 C. B. Bahnson and W. I. Wardwell, *Psychol. Rept.* 10, 831 (1962).
 R. H. Rosenman et al., J. Am. Med. Assoc. 195, 130 (1966).
 M. Friedman et al., J. Clin. Invest. 39, 758 (1960).
- 15. L. E. Hinkle, Am. J. Pub. Health 56, 1470
- (1966). 16. For the purpose of classification, "college" men in this study were defined as men who had a college degree at the time that they were hired; "no-college" men were defined men were defined as men who did not have a college degree at the time that they were hired. Most of the "no-college" men had several years of high school education, or were high school graduates, but some had completed part of a college education, and a few had continued their education and had obtained college degrees after their employment.
- 17. Epidemiology of Cardiovascular Diseases Epidemiology of Caraiovascular Diseases Methodology, American Heart Assoc.-National Heart Inst., suppl. to Am. J. Pub. Health and the Nation's Health 30, 10 (1960).
 L. E. Hinkle, W. N. Christenson, D. S. Ull-mann, Arch. Environ. Health 13, 312 (1966).
 E. W. Lehman, J. Schulman, L. E. Hinkle, ibid. 15, 455 (1967).
 B. Loo, and B. E. Schneider, L. Am. Med.
- 20. R. E. Lee and R. E. Schneider, J. Am. Med. Assoc. 167, 1447 (1958).
- 21. S. Pell and C. A. D'Alonzo, ibid. 175, 463 (1961). 22.
- 23.
- (1961).
 J. M. Mortenson, T. T. Stevenson, L. H. Whitney, Arch. Ind. Health 19, 1 (1959).
 W. F. Enos, J. C. Beyer, R. H. Holmes, J. Am. Med. Assoc. 158, 912 (1955); W. F. Enos, R. H. Holmes, J. C. Beyer, Am. J. Cardiol. 9, 343 (1962); V. C. Roberts, C. Moses, R. H. Wilkens, Circulation 20, 511 (1959); J. P. Strong and H. C. McGill, Am. J. Pathol. 40, 37 (1962).
 L. E. Hinkle, Soc. Sci. Med. 1, 129 (1967).
- 24. L. E. Hinkle, Soc. Sci. Med. 1, 129 (1967).

NEWS AND COMMENT

Brandeis Center for Violence Study: Exploring the Causes of Urban Riots

Waltham, Massachusetts. This idyllic suburban setting is an incongruous place for a center devoted to the study of urban violence. The windows of the air-conditioned Lemberg Center for the Study of Violence look out over placid expanses toward wooded hills. Brandeis University is a long way from the heat and passion of the inner city.

Nonetheless, the Lemberg Center is one of the few places where a systematic study is being conducted of the many places where violence occurs. Consequently, whenever turmoil caused by violence breaks out in the nation, the Center is besieged by telephone calls from the press. The main thrust of these inquiries is-"Are we a sick society?"

The Lemberg Center, which has received greater attention after the assassinations of Martin Luther King, Jr., and Robert F. Kennedy, was founded in response to another assassination-that of John F. Kennedy. Shortly after this event, Frank A. Cohen, a New York businessman, offered money to Brandeis for scholarly research on violence; the funds were used to hold three conferences in 1964 and 1965. Because of the interest they generated in the university and elsewhere, it was decided to sponsor a permanent center, which was opened in the autumn of 1965. In 1967, another New York businessman, Samuel Lemberg, gave \$1 million as a permanent endowment for the center.

Although the Lemberg Center was founded in response to an act of individual violence against President Kennedy, the focus of its research is on collective violence, particularly racerelated urban violence. The Center offers no panaceas or cheerful words to a country increasingly disturbed by riots. The director of the Lemberg Center, John P. Spiegel, a psychoanalyst who formerly taught at Harvard, repeatedly emphasizes that urban riots are not a new phenomenon in American society. He points to the bloody anti-Catholic riots of the 1830's, anti-draft riots of the 1860's, the labor riots of the 1870's, and the anti-Negro riots in the early part of this century. "Nothing that has happened in our cities since 1964," Spiegel says, "comes anywhere near the naked savagery of these previous outbreaks."

The scholars at the Lemberg Center reject what they consider to be a "moral absolutist" position on violence-that of condemning all violence or of supporting it. On several occasions, scholars at the Center have said that only rioting and violence seem to spur the white community to act on the problems of the ghetto.

In an interview, Spiegel offered the following explanation of his view of the study of violence: "I approach the society as a patient having problems. If these problems are explosive, let's face 25. J. Stamler et al., J. Chronic Diseases 11, 405

- (1960).
 H. A. Tyroler and J. Cassel, *ibid.* 17, 167 (1964); S. L. Syme *et al.*, *ibid.*, p. 277; T. Smith, *Milbank Mem. Fund Quart.* 45, 29 (1977). 26. H. (1967)
- 27. È Lehman, J. Chronic Diseases 20, 381 (1967)
- 28. P. D. Goldblatt, N. E. Moore, A. J. Stunk-ard, J. Am. Med. Assoc. 192, 97 (1965).
- W. G. Cochran, Sampling Techniques (Wiley, New York, 1963), p. 75.
 This is a research report from the Division
- of Human Ecology of the Departments of Medicine and Psychiatry of Cornell University Medical College, New York, and from the medical departments of the Bell System. The investigations described in this article were supported by PHS grant HE-07796. We thank Professor Amitai Etzioni and Dr. Jay Schulman for their consultations in the course of these studies.

them; only if we face problems realistically can we do something sensible. I try not to put value judgments on violence." Spiegel thinks it would be a mistake to become identified with a particular side in an urban dispute.

In Spiegel's view, "the contemporary ghetto riots grow out of the failure of the civil rights movement in its attempt to achieve normative readjustment for black people through nonviolent protest." He believes that riots, regardless of country or historical period, make a statement calculated to persuade members of the audience to change their behavior. Spiegel thinks that it is necessary to understand and correct the social process by which violence comes about, as well as to understand the pattern of dramatically violent events.

When asked for advice by city leaders, Spiegel replies that he can't do anything to assist with the long-range problems. These problems, he says, are political, revolving around the difficulty of obtaining sufficient money for the cities. The Center, he thinks, can assist only with the immediate problems, by helping bring a certain amount of enlightenment to discussion of the issues. When asked, he tries to help city officials learn about the culture and behavior of the black community; he also warns officials against bragging about their accomplishments on behalf of the ghetto. "Fortunately, we have a good model," he says, "and that's Mayor Lindsay." Although Spiegel does not believe that the leadership of any American city has a fully "sincere recognition" of the problems of the ghetto, he believes that New York City, under Lindsay, has made the most progress toward recognizing what needs to be done.

The Lemberg Center has three purposes: (i) to conduct research on the causes and consequences of violent behavior; (ii) to transmit and apply research findings through consultation with public agencies and authorities responsible for social control; and (iii) to train researchers in methods for studying violence and to conduct seminars for students as well as for persons in public agencies.

In its relatively short period of operation, the Center has begun a variety of activities. It has gone into the making of documentary movies, and has finished a 50-minute film based on a conference sponsored by the Center last year to promote discussion between black militants and city officials. (The title of the film, "Our Problem Is You," was the remark of a militant leader as he pointed to some of the white officials during the conference.) The Center is also doing a film about the Pittsburgh police department. The Center is establishing a unit for documents relating to violence, including movie and television film, diaries of violent persons, and records of the behavior of vigilante groups. A bibliographic center is being organized, and there are plans to publish an annotated bibliography on violence.

The Center runs a Riot Data Clearinghouse which compiles material on racially connected disturbances occurring in the nation, by examining newspapers, by telephone calls, and through reports from on-the-scene observers. The people at the Center said that they soon learned that they had more complete data on riots than could be found elsewhere in the country, including the relevant federal agencies. Consequently, in May, the Center published its first issue of Riot Data Review which contained an account of the nation's civil disorders during the first 3 months of this year. The study lists about ten times as many disorders this year before Martin Luther King Jr.'s assassination as in the comparable period last year, states that more than two-thirds of these disturbances took place in schools and colleges, and indicates that New Jersey was the state which had the most racial disturbances early this year. The Center plans to publish its second issue of the Review in the near future describing the disorders which occurred after 1 April.

At present, Spiegel says, the Lemberg Center employs about 15 professionals at Brandeis and ten more research people in the field. Ralph W. Conant, a political scientist who specializes in urban problems, is associate director.

NEWS IN BRIEF

• HARVARD - M.I.T. PROGRAM: Harvard University and M.I.T. have announced plans for a joint nonprofit corporation to develop a system for sharing computers, televising lectures, and transferring library information. The corporation, directed by Carl F. J. Overhage of M.I.T.'s Project INTREX, will be known as the University Information Technology Corporation (UNITEC). The cost is estimated at more than \$500,000 per year.

• STATE RESEARCH AID: The State of Pennsylvania's Science and Engineering Board has announced \$1.4 million in research and development contracts for a new "brainpower" program, intended to generate new jobs and stimulate economic growth in Pennsylvania. The 11-member Board, directed by Robert E. Hansen, claims to be the first state-sponsored science board with funding capabilities. Thirteen institutions have been selected to receive the first year's grants, which will be for materials science, nuclear engineering, biomedicine, computer sciences, transportation, regional development, and environmental research.

• SWEDISH RESEARCH POLICY SERVICES: The University of Lund, Sweden, has established an international library on research policy. The library, which will answer queries by mail, is now accumulating materials on national policy programs throughout the world. Contributions of materials also are being solicited; letters may be addressed to the Research Policy Program, University of Lund, Sölvegatan 8, Lund, Sweden.

• AAAS-Westinghouse Science Writing Awards: Entries are now being accepted for the 1968 AAAS-Westinghouse Science Writing Awards competition. Awards of \$1000 each will be presented for outstanding nonmedical science writing in (i) newspapers of over 100,000 daily circulation, (ii) newspapers of less than 100,000 daily circulation, and (iii) magazines of general circulation. Entries must have appeared in print between 1 October 1967 and 30 September 1968. Deadline for submission is 10 October 1968. For additional information contact Grayce A. Finger, AAAS, 1515 Massachusetts Ave., NW, Washington, D.C. 20005.

• MEDICAL TEACHING GRANTS: The Richard King Mellon Charitable Trusts have awarded grants totaling \$10 million to 30 private medical schools to strengthen and improve the quality of medical faculties. The trust was established by Richard King Mellon, a Pittsburgh financier.

• IMMIGRANT SCIENTISTS: More than 5300 foreign scientists and engineers were admitted as permanent residents of the United States in the year ending 30 June 1965, according to a National Science Foundation report. This was a drop of 7 percent from the previous year. Nearly half of the scientists entered from Europe, with the largest numbers from Canada, the United Kingdom, and Germany. The 12-page NSF report, Reviews of Data on Science Resources, No. 13, is available for 10ϕ from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

• BERING SEA SURVEY: This summer the Bering Sea continental shelf will undergo an extensive survey by the Environmental Science Services Administration and the Geological Survey. The survey, which will include a collection of sediment samples, will be made principally off the coast of Nome, Alaska, in western Norton Sound. It is part of a long-range national program to map and study the 862,000 statute square miles of U.S. continental shelf.

• SOCIETY OF PHYSICS STU-DENTS: The student section of the American Institute of Physics has merged with Sigma Pi Sigma, national honor society in physics, to form the Society of Physics Students. The new organization, as part of AIP, with chapters on approximately 325 campuses, will serve as a general society for graduate and undergraduate students interested in physics. Sigma Pi Sigma will still maintain a separate identity as well, electing students to membership on the basis of academic attainment.

• NEW PUBLICATION: The Report on the Intrauterine Contraceptive Devices of the Food and Drug Administration is available, at 55ϕ a copy, from the U.S. Government Printing Office, Washington, D.C. 20402. The Center operates on an annual budget of about \$220,000, much of which comes from National Institute of Mental Health grants, and part of which represents a Ford Foundation grant.

The primary focus of the Center's research is a study of conditions in ten cities. This began as a six-city survey in which three cities which had had riots (Cleveland, San Francisco, and Dayton) would be compared with three which had not experienced them (Pittsburgh, Boston, and Akron). Since the study started, both Pittsburgh and Boston have had riots. The Center has since added four southern cities to its survey— Nashville, Birmingham, Atlanta, and New Orleans.

In its preliminary six-city study, is-

sued last year, the Center said that a riot could break out in any of the cities. Its report stated that the level of dissatisfaction in a city does not have a direct, one-to-one bearing on the possibility of a riot. The report said that there is a reciprocal relation between "the grievance level" of the people in the ghetto, and the inflammatory nature of the event which precipitates the initial disturbance-the higher the grievance level, the slighter the event required to trigger a riot. An "inflammatory event" was defined as an incident, usually initiated by white people, which is perceived by people in the ghetto as an act of injustice or as an insult to their community.

Spiegel explained that his Center's ten-city survey consists of four kinds of

A POINT OF VIEW

Excerpt from the address by Donald F. Hornig, Presidential Science Adviser, upon receipt of the first Mellon Institute Award given at the Carnegie-Mellon University, Pittsburgh, Pennsylvania on 10 May.

Why then do I ask, "Is there a crisis in science?" To judge by my correspondence, there is surely a financial crisis in our universities as science budgets have leveled off in the last few years and are now threatened with decline. But the question I'd like to ask is whether there is something deeper? After two decades of adventurous progress, the Congress and the public ask whether we can afford it after all. We now find ourselves pulling back from the exploration of space, slowing down on the development of universities, and even holding back on health research. . . .

Congressmen look at this violent expansion of the last two decades and ask "Where will it ever end?" I should mention that at the rate of expansion of the 1950's and early 1960's one could have predicted that it would have ended with every man, woman and child in the United States doing research. But now many Congressmen and members of the public are more immediately concerned with possible overlap, duplication and proper accounting procedures, than they are with the quality and vitality with which the frontier is explored. They see a scientific community which, insisting on its purity, will not deign to communicate with the public and justify itself, but prefers to believe that its virtues are so self-evident that a right-minded society must necessarily support it on its own terms. They see a community which, in industry, government laboratories and the universities, consumes 1/4 of the disposable Federal budget (the manageable part, not counting the interest on debt, veterans' payments, etc.) and takes it for granted that the question is "what are the needs of science?" rather than "what are the nation's needs for science?" This blithe spirit leads mathematicians to seriously propose that the common man who pays the taxes ought to feel that mathematical creation should be supported with public funds on the beaches of Rio de Janeiro or in the Aegean Islands. I don't doubt for a minute that mathematical creation is possible under those circumstances; it may even be improved. But the public which pays the bill is not in tune with such colossal intellectual conceit.

In short, the scientific community has done much to alienate itself from the society which supports it.

activities: (i) the accumulation of demographic material; (ii) an assessment of attitudes toward rioting, social injustice, and social change obtained by interviewing 500 black and 500 white residents of each city; (iii) conducting interviews with opinion makers-including politicians, black militants, and states rights groups-to see what the problem of social change is in their eyes, interviews which will be repeated once or twice a year; and (iv) on-the-spot monitoring of events by indigenous teamsmonitoring which is done by black residents in the black community and by whites in the white areas.

As well as supervising their ten-city survey, Spiegel and Conant are preparing a textbook on violence which will range from discussion of the biological aspects of violent behavior to that of the history of attitudes toward violence. When space and staff permit, the Center eventually aims "at collaborating with those comparative animal biologists and human anatomists who are studying the neurophysiology of aggressive releases, particularly with respect to malfunctions of the temporal lobe and the limbic system."

Although there was a good deal of editorial derision about President Johnson's appointment of a commission to study the causes of violence, Spiegel hopes that the commission will help the country answer the questions: How violent is the United States? Are we becoming more or less violent in relationship to our own past? How violent are we when compared to other countries? What can we do to cope with violence? Spiegel hopes that the commission will "put violence on the map as an intellectually respectable study" and aid the nation in acting constructively rather than engaging in "handwringing and feeling sorry for ourselves."

In the past, there has been some criticism of the Lemberg Center for focusing on violence committed by black people. One early critic of the Center, Alvin F. Poussaint, a black psychiatrist who teaches at the Tufts University medical school, now believes that Spiegel and the Center are changing their focus to encompass the violence and attitudes of whites as well, including the institutionalized violence of the police and other law enforcement agencies.

Spiegel hopes that other research centers on violence will be established throughout the country. The Lemberg Center will continue to concern itself with collective violence; its current emphasis on racially related occurrences may be expanded to include college and other disturbances. The Center will not study war, revolution, extremist groups, or the various types of individual violence. Spiegel says that his Center cannot begin to handle all the requests for information which it now receives.

It is obvious that a major difficulty, for the Center and for any similar institutions which may be established, will be to create conditions where violence can be studied with scholarly calm while attempting to withstand public pressure for instantaneous answers to questions posed by the nation's swelling urban conflict.—BRYCE NELSON

France: After the Storm, Elite Schools Face Change

Paris. The red and black banners have been struck, the boulevards of the Latin Quarter repaved where necessary, and the wall posters are fading. The government is "organizing its victory" at the polls and, although some foresee trouble in the autumn, President de Gaulle might say "Après le déluge, moi."

Efforts to reform the universities have moved from the streets to the committee rooms and while it is too early to predict the extent of change to come, the government seems prepared to go some way toward granting the militants' demands for greater university autonomy from rigid central control and for *cogestion*, or student participation in university government.

French voters seem to have reacted strongly against the spectacle of public violence and the prospect of political instability, but the impression remains that the reformers remain in the ascendant. In the case of the universities, the majority of Frenchmen have rejected what appeared to be anarchic protest, but have accepted the critics' charge that the institutions are archaic.

A clue to the underlying feelings which influenced the course of the protests in May and June may be found in the failure of militants, who profess deep reservations about the character of modern industrial society, to mount a direct assault on the institutions which train that society's elite. Government and economic life in modern France have been heavily influenced by men trained in the *Grandes Ecoles*, the statesponsored professional schools which are separate from the universities and at least their equals in prestige.

The *Grandes Ecoles* have given France a corps of technically trained administrators who kept the country functioning through times of political weakness, who ably managed postwar economic development, and who made themselves a reputation for looking after France's interests in the Common Market with uncommon skill.

Paradoxically, however, the system that produced this scientifically educated elite has proved a source of national weakness in the sector of scientific research, and particularly in the production and use of scientific and technical manpower. Changing the system is a formidable task because the *Grandes Ecoles*, within their own terms of reference, have been so successful and their stock with the public remains so high.

There is a saying that France's prewar Third Republic was the republic of the professors while de Gaulle's Fifth Republic is the republic of the technocrats. To the foreigner the distinction is a rather finely shaded one, since "professors" translates to graduates of the Ecole Normale Supérieur and "technocrats" means primarily products of the Ecole Polytechnique, both of which are *Grandes Ecoles*.

In fact the ascendancy of the Ecole Normale and Ecole Polytechnique has been challenged since World War II by the Ecole Nationale d'Administration (ENA), whose top graduates move into key jobs in the grandes corps, the upper echelon of civil service administrators. The ENA was established after the war, in part with the democratic aim of breaking the Paris bourgeoisie's grip on the grandes corps, but so thoroughly has the old group adapted to the new system that now there is talk of further reform. The first generation of "enarchists" now dominate at the policy level of government in the same way that "polytechniciens" for generations have held sway over top posts in industry and finance. The point, however, is that the *Grandes Ecoles* are rooted in the same technocratic tradition.

It is a tradition that traces back to Revolutionary France and draws on the St. Simonian ideal of a state founded on scientific principles and governed by men rigorously educated in science. The practical needs of an embattled country put a premium on military engineering, and the Ecole Polytechnique provided a model for an engineering school which produced officers superbly grounded in basic science. A score of Grandes Ecoles were established, and the most illustrious of these produced technocrats who could expect to make brilliant careers not in the army but in the civil service, industry. and finance. And the Grandes Ecoles became the goal of many of the brightest and most ambitious students.

The schoolboy who aspires to the *Grandes Ecoles* must cap an outstanding record in a lycée course emphasizing mathematics and physics with impressive results in his baccalaureate examination. Once past that hurdle he must compete for a place in the special preparatory classes in Paris lycées which candidates for the *Grandes Ecoles* attend for at least 2 and often for 3 or 4 years to study for the savagely competitive entrance examination.

Only about 1500 first-year students are admitted to the Grandes Ecoles each year. Competition is keenest for the Ecole Polytechnique, the Ecole Normale, and a few others. (Candidates for ENA must offer the equivalent of a university degree from the Institut d'Etudes Politiques de Paris.) Students work very hard for admission to some of the less prestigious Grandes Ecoles, but then may find the going comparatively easy. The failure rate for the Grandes Ecoles is very low compared to that for the universities which have been open to all holders of the baccalaureate.

Hard work is expected of the student at the Ecole Polytechnique, but this is only one element of the special