

equipment. Under the broad terms of the grants "funds may be used for payment of any direct biomedical research and research training expense which is part of the approved program." The grants also provide a maximum of \$50,000 which may be used for alteration and renovation of facilities.

Some NIH officials view the program as a means of getting university officials to assess their institution's future goals. But as one university HSAA program administrator noted, "When announcements of awards programs come out, universities try to decide where they are going and where the government would like them to go and then attempt to combine the two into a salable program."

There is some danger in this approach for institutions that do not manage to sell their programs the first time around, since it enables NIH to dictate

changes in their structures if they want to be in the running for awards during the next bout. NIH sends carefully phrased letters to all institutions that apply for the HSAA's but are rejected. These letters imply that, if the institutions want to be considered in the future, the university administrators would be wise to contact NIH to determine exactly where their institutions fall short. This gives NIH a wedge in the academic door which could be used to prod universities in the direction that NIH deems wise for their academic development. Kennedy said, "The role of NIH is that of a willing and honest broker. If institutions wish to find out what NIH advisors think of their institutions, NIH can serve as a transmission belt to convey those views."

NIH has requested \$11 million for the program in its 1968 fiscal budget. Although congressional approval of the

budget is pending, NIH is now accepting HSAA applications. About 15 new awards are expected to be made prior to 1 July 1968.

Criteria on which institutions will be selected for the awards include: (i) that they are not yet preeminent in the health sciences; (ii) that they possess adequate biomedical research and research training strength for future growth; (iii) that they offer high potential for achieving the program goals; and (iv) that they provide assurance that they can sustain new levels of achievement beyond the award period.

Kennedy said judgments will also be based on how successful the institutions have been in obtaining federal support, their academic rating, the number of faculty members belonging to the National Academy of Sciences, the general faculty and administrative quality, and their momentum.—KATHLEEN SPERRY

Riots: The More There Are, the Less We Understand

Three successive summers of destructive rioting have shown white Americans how much they do not understand black Americans. Even social scientists, with numerous studies of race relations, have little data on recent riots. President Johnson emphasized this ignorance when he asked his Commission on Civil Disorders: "What happened?" "Why did it happen?" and "What can be done to prevent it from happening again and again?" The questions seemed aimed at ending the Administration's own confusion as much as at charting a new course in domestic legislation.

What scant riot-research there is, however, raises some interesting questions. There is a presumption, for example, on the part of many whites that the riots are irrational; they only destroy Negro homes, kill other Negroes, and alienate white liberal support. Perhaps there is a good case for the irrationality of rioting, but several

studies of recent riots show that many Negroes believe otherwise.

Two sociologists working at UCLA, Raymond J. Murphy, associate professor of sociology, and James M. Watson, now assistant professor of sociology at Indiana University, have just completed a large-scale opinion study within the 46.5 square-mile area of the 1965 Watts riot. They found that 42.8 percent of the men sampled and 34.5 percent of the women felt the riot had "helped the Negro cause." Only 23 percent of the men and 19 percent of the women actually thought the riot had "hurt." A commercial polling firm, John F. Krafts, Inc., surveyed Watts and found that 48.4 percent of those questioned believed the riot had helped the "Negro's chances for equality in jobs, schools, and housing."

A common notion about riots is that only a small minority of the Negro population participates in them. Again, this may be so, but available

evidence could support the opposite conclusion. In Watts, for example, the UCLA study reports that 73.6 percent of the men and 75.3 percent of the women polled took no part in the riot. Yet, at the same time, 6.3 percent of the men (2.8 percent of the women) were "very active," and 17.1 percent of the men (17.4 percent of the women) were "somewhat active." Is approximately 25 percent of the population large or small?

Equally ambiguous—and probably more significant—is the attitude of the entire Negro community toward the riots. Here, too, the frequent presumption of whites is that acceptance of the riots is low. The Lemberg Center for Violence at Brandeis University has just completed a preliminary study of six American cities. It found that 59 percent of the Negroes felt that only a small minority of Negroes sympathized with the riots. Yet, there was a marked ambivalence: "When Negroes were asked how riots make most Negroes feel, the answers were predominantly negative toward actual riot behavior. When Negroes were asked whether riots help or hurt the Negro cause, they expressed intensely mixed feelings." In Watts, the UCLA study reported, the responses of only about 35 percent of the men and 25 percent of the women were "very favorable" or "somewhat favorable" to the riot, but the opposition of others was often tempered. Said one "unfavorable" re-

spondent: "The only thing I liked was the people expressing themselves. They were out of a cage. They expressed themselves. . . . I disliked the looting and the burning, but I liked the way they got it out of their system." Significantly, the John F. Krafts poll reported that 55.6 percent of its subjects felt more pride in being a Negro after the riot.

What is perhaps the major conclusion of the UCLA study also challenges another common assumption: that the "better off" segment of the Negro community is a stabilizing and moderating influence. The study made a number of comparisons between an individual's class position—his occupation, his area of residence, the neatness of his home—and his attitude about the riot or his activity in it. The results showed very few neat relationships.

For example: when those living in the worst neighborhood were compared with those living in the best, it was found that 25.6 percent of those in the poor neighborhood reported they participated in the riot, against 17.9 percent in the best neighborhood; 23.9 percent in the poor neighborhood were highly favorable to the riot (26.1 percent moderately favorable), against 19.1 percent in the best neighborhood (22.1 percent moderately favorable).

The differences were hardly substantial although the two neighborhoods present a sharp contrast. In the richest, the median income, according to the 1960 census, was \$6578, and the median number of years in school was 11.7; 47.2 percent of the workers had white-collar jobs. The corresponding statistics for the poor neighborhood were a median income of \$4048 and a median educational achievement of 8.8 years; 14.2 percent held white-collar positions. By way of comparison, the median income for the entire city of Los Angeles in 1960 was \$6896, and median educational attainment 12.1 years. The UCLA report concluded: "We suspect many white persons have viewed the middle-class Negro group as a moderating influence in the racial struggle. The 'better element,' it is often argued, will be responsible and orderly and understand the necessity for a gradualist solution to the Negro problem. . . . We find little room for such an optimistic appraisal. If our analysis is correct, the problems of urban life for the Negro, even in the palm-lined spaciousness of Los Angeles, have grown acute and a significant number of Negroes, successful or unsuccessful, are emotionally

prepared for violence as a strategy or solution to end the problem of segregation, exploitation, and subordination."

The study's authors were not sanguine about another common theory: that contacts with whites tend to make things better. Once again, they compared a number of groups to see if social contact with whites made a difference in attitudes toward the riot. It didn't. But the study did find that better-off Negroes with high anti-white feelings (based on a test for "social distance"—the respondent was asked whether he would be uncomfortable at a party with a majority of whites) were far more likely to participate in the riot than their peers with lower "social distance." And, though young people had no less social contact with whites than their elders, they did display more anti-white feeling. Not surprisingly, the young were the most active participants in the riots.

The report was again pessimistic. "We expect that continued contact with white persons by those Negroes who have made economic gains would serve to increase their impatience and frustration at not being able to enjoy the same freedom of movement and opportunity taken for granted by white persons in their quest for the 'American dream.'"

All these statistics have relevance to more central questions. Do the riots reflect racial grievances or economic hardship—is this a class or racial matter? No one is trying to make the question an either-or proposition, but more and more commentators have been suggesting that the present disorders are best understood in terms of class dynamics. Thus, Daniel Patrick Moynihan, the author of the controversial government report "The Negro Family: The Case for National Action," told the *N.Y. Times* that though "race interacts with everything in America," the present violence was essentially caused by a "large, desperately unhappy, disorganized lowerclass community" in the core cities.

The authors of the UCLA report seem to be disputing this theory. They hypothesized that different motivations led different segments of the community to participate in the riot: anti-white sentiment for the better-off participants and economic discontent for the poorer.

Their report also seems to take issue with a number of other prevalent ideas. Specifically, it presents data suggesting that:

- Alleged police brutality may not be so central to the understanding of the riots as many current theories would make it. The authors asked their respondents to name their largest complaints with life in Los Angeles. Poor neighborhood conditions—dirty streets, dilapidated housing, and so forth—ranked first for both men (28.3 percent) and women (36.7 percent). Mistreatment by whites (including police) ranked second for men (21.2 percent) but last for women (7.9 percent). This relatively low ranking is not surprising because most members of the community do not deal very often with police. Only 10 percent of the men reported they had frequent contact with the police and another 14.9 percent dealt with the police "sometimes"; in contrast, 59.1 percent of the men and 70.9 percent of the women had contact with the police only on rare occasions. These findings, however, do not eliminate the problem of perceived police mistreatment. A third of the men said that police had, at one time or another, shown them lack of respect or searched them unnecessarily; and almost three-quarters of the men believe the police beat up Negroes in custody (though only 1.3 percent report it has happened to them). Police brutality, then, may be more a symbol of community anger, rather than a central cause of the riot.

- The idea that recent migrants from the South, bitter and frustrated at their lack of success in Los Angeles, helped stimulate the riot may be a myth. The authors found that 60 percent of the sample (70 percent of the men) had lived in Los Angeles at least 10 years when the riot occurred. And of those who had lived in the city less than 10 years, only one-third of them had been in Los Angeles less than four years at the time of the riot. (These findings coincided with a special census of South and East Los Angeles in 1965 which showed that only 12.4 percent of the Negro population of South Los Angeles lived outside the Los Angeles-Long Beach Standard Metropolitan Area in 1960.) In addition, people from the South were older than those from other regions; participants in the riot tended to be younger.

- The conventional measures of class—income, education, occupation—may be ill-suited to study of the Negro ghetto. The report found few significant correlations between these standards and discontent. However, when the authors compared more sub-

jective measures of "life-style" they were able to make more sense out of events. Specifically, two measures of life-style were used—area of residence, and neatness of the respondent's house. Individual measures of socio-economic level (education, occupation, and so forth) showed little relationship with measures of discontent. However, "life-style showed more consistent trends. . .

in five out of six comparisons, the persons living in better residential areas and exhibiting a more 'middle-class' life-style indicated lower discontent [than those living in poorer neighborhoods or those whose homes were not as neatly kept]."

The UCLA study, and the few others in existence, raise more questions than they resolve. Its conclusions, if correct

for Watts, may not apply to other cities. And even its findings about Watts 1965 may no longer be true of Watts 1967. This summer's violence has been too widespread and yet too random to suit simple explanation. Each new disturbance amplifies uncertainty and leaves room for almost as many theories as there are disorders.

—ROBERT J. SAMUELSON

British Fusion Research: Cuts May Reveal a Pattern

London. News of a cutback at the Culham Laboratory, the British center for plasma physics and fusion research, came as no great surprise, but still carried considerable shock effect here. It has been known for a year or more that Culham was under government scrutiny and that its future was in the balance. But because the laboratory was engaged in bringing the energy millennium through controlled fusion, and because it had rapidly achieved a high international standing, observers had thought it might escape harsh handling.

In the final days of the session of Parliament which ended in late July, however, Minister of Technology Anthony Wedgwood Benn announced that Culham's budget would be cut by 10 percent a year for the next 5 years. Thus the present \$11.2 annual budget would be halved.

Culham, an Atomic Energy Authority (AEA) facility located on an old Navy airfield in Berkshire, was completed in 1964 at a cost of about \$16.8 million. It is in a sense a "spin-off" lab, its staff having been formed mainly by bringing together teams working on plasma physics research at nearby Harwell and at the weapons research establishment at Aldermaston.

Culham rapidly came of age. The staff produced work of a quality which earned the lab a good international reputation, and able foreign scientists were attracted as visitors. Last year the lab added to its prestige when staff members stepped slightly out of their bailiwick to win a contract to build

the scientific payload for the Large Astronomical Satellite for the European Space Research Organization (ESRO). This is the largest space experiment planned outside the American and Soviet programs.

The government decision on Culham seems based primarily on an assessment of the scientific prospects for generating power by nuclear fusion and an acknowledgment that the commercial payoff still lies in the indeterminate future.

When the idea of Culham as a special and separate effort was being developed a decade and more ago, British planners were dealing with several important unknowns. It was uncertain how work on fission reactors would go, and there was considerable worry in Britain about the adequacy of supplies of atomic fuel, particularly enriched uranium. Fusion research, therefore, looked attractive, although it was not possible to anticipate difficulties that were to arise.

In his statement on Culham in the House of Commons, Benn said, "Since the decision to start fusion research, rapid progress has been made towards economic nuclear fission power. In particular the fast breeder reactor program shows real promise. Consideration of this program in relation to the earliest period when fusion could conceivably contribute to the power program leads inevitably to the conclusion that plasma physics and fusion research should be substantially reduced."

The minister's statement was fore-

shadowed in March by remarks made to the Parliamentary select committee on science and technology by the retiring chairman of the AEA, Sir William Penney, who said, "The fast reactor now looks so attractive that there is enough power to be got from uranium for I don't know how many, possibly 100 years. So fusion if it is to be used even during the next century has to come in because it is *cheaper*, not because there is a shortage of fuel."

Asked about Culham, Penney put his reply in the form of a rhetorical question. "Should we take what is in fact a very fine engineering establishment and, because it is not going to produce a fusion device in our lifetime, should we say: 'We give this up'? Do we or don't we? I don't know."

The government hasn't given up on Culham. In his statement Benn noted that circumstances can alter fast in the realm of advanced technology, that the AEA would keep the matter under review, and that the decision would be reexamined in 5 years. Some suggest, however, that the same thing may happen at Culham, after a 50-percent cut, that would have happened had Solomon's verdict on cutting the baby in half been carried out. There are doubts that, with the staff of 800—about a quarter of them professionals—reduced by half, the laboratory can maintain its momentum. Culham has been notably free from brain-drain problems up to now. Other countries, including the United States, are expanding research on controlled fusion and it would not be surprising if some recruits were to be found at Culham.

Some observers think that the Culham action heralds a radical reshaping of government policy on R & D in Britain. A favorite theme of both Prime Minister Harold Wilson and Minister of Technology Wedgwood Benn has been the necessity of mobilizing British scientific and technological resources in support of the country's ailing economy.