

from the editor's desk

Long before an assassin's bullet ignited the violence that left a dozen American cities in shambles last week, *SCIENCE NEWS*' editor in the social and behavioral sciences, Patricia McBroom, launched a series of interviews. Her purpose was to determine what role, if any, these disciplines are prepared to play in relation to the turmoil tearing at the society that is their laboratory. It is a question that is now, tragically, more relevant than ever. (Some of the results of that reporting are presented in this issue, see right and pages 386-390.)

Whether these sciences are prepared for the role they are being asked to play may be an open question. But they are being asked.

The President's Commission on Civil Disorders, in preparing its report on the conditions which lead to riots in the American city, turned to the social sciences for help, with mixed results. And in a spirit of optimism, or desperation, or buckpassing, proposals to increase support for the social sciences, intended to expedite an end to social crisis, are proliferating in Government.

The makers of public policy have, in the last three decades, developed the habit of looking to science for easy answers, much as early monarchs looked to their alchemists and necromancers. Sometimes it works; it did in the pattern-setting World War II development of radar, the proximity fuse and nuclear weapons. Sometimes it does not; money and good intentions are no substitute for the painstaking study and ultimate brilliant synthesis that characterize productive research, laying the base for later—often much later—utilization of its fruits.

The social sciences are being asked, and indeed they may be begging to be asked, to come up in this generation with instant solutions to this generation's crises. The request presumes a potential within the sciences for an immediacy of response; it presumes as well a depth of perception that cuts across barriers of class and culture. Both assumptions, where the ghetto is concerned, may well be out of phase with the real capabilities of the social sciences. The delivery on demand of instant insights from instant research is virtually a denial of the nature of scientific research.

At best, as Miss McBroom's reporting indicates and the riot commission's experience demonstrates, the social sciences today are prepared to offer insights to social crisis. But these, while sophisticated, are often intuitive and general and may well be affected by preconception; to the extent that this is so they can be no better than the insights of such nonscientists as those who made up the commission.

But more is being demanded. The social sciences are being asked for useful data and documentation of the kind normally expected of physics or chemistry. This demand—and the support that is likely to accompany it—may help the social sciences sharpen their skills into tools that can be taken from the laboratory and used in city and suburb.

That the social sciences, through such centers as the Lemberg Center for the Study of Violence at Brandeis University and the Committee on Civil Disorders of the National Institute of Mental Health, are moving in this direction is to their credit. And that movement gives weight to the provisional analyses they are developing.

The sciences may catch up and, out of the cauldron of contemporary society, develop an understanding of the social and personal factors that turn frustration in the face of injustice from constructive to destructive channels. On their ability to do it, in time for their insights to be useful in planning social programs rather than instructive in understanding history, may depend not only their own future as useful scientific disciplines, but the future health of the society they study.

Warren Kornberg

Riot or Rebellion

A sociologist finds the American ghetto in a classic revolt

The shot that killed Dr. Martin Luther King Jr. and dropped a pall of smoke and despair over a dozen cities, tore through a set of conditions in the United States that have historically produced revolutions in other nations.

An analysis by a Harvard University sociologist reveals that classic revolt-stirring conditions are very much present in America of the 1960's.

What form the revolution takes—whether violent or quiet—differs from country to country, but the conditions giving rise to revolt are the same. They were present in both French and Russian revolutions; they are present here. "The Negro revolt is a classic case," says Dr. Thomas F. Pettigrew, Harvard professor and consultant to the Civil Rights Commission.

"We are in the stage of mass letdown and discontent," says Dr. Pettigrew. "Something's got to give. There is going to be a revolution, but it could always be a quiet one."

England seemed to be headed for an upheaval after the French Revolution, says Dr. Pettigrew, but it was not violent because the English oligarchy gave ground.

"I don't really expect a French revolution here. . . . but the killing of Dr. King cannot be anything by a stunning reversal," and a further step in the revolutionary process.

Typically, revolutions follow a period of improved living conditions. That very progress sets up four revolt-stirring conditions in nations with large disadvantaged populations; it forces widened economic gaps between the dominant and subordinate classes.

A period of long, slow economic and social progress—the first stage toward revolution—is followed by sudden sharp reversal and crisis—the second stage. "We are now in that ominous second stage," says Dr. Pettigrew. The tragic

summer of 1967 marked the reversal; Dr. King's assassination accelerates its downward course.

"The Negroes who still believed in America were those who believed in Dr. King," says Dr. Pettigrew. "For them the assassination is more crushing than for Black Power types.

"Dr. King was the only symbol of integration, black or white, who commanded the loyalty and attention of Negroes of many different political backgrounds . . . he was the only one with a span of charisma."

The terrible irony of Dr. King's assassination is that the United States was beginning to look as though it were turning a corner, Dr. Pettigrew points out. The riot commission's bold message of white racism seemed to be making a difference with middle class whites.

Suddenly the Senate had come to life with an open housing bill. Then President Johnson moved for peace in Vietnam—a move highly relevant to internal U.S. conditions; war is often the spark to second stage reversal. The poor usually suffer greater economic disadvantages from war and relative deprivation between classes is suddenly raised to intolerable levels.

"I am afraid that that Thursday night wiped out those gains," says Dr. Pettigrew. "With Dr. King's shooting, frankly, I don't have the courage anymore to stand up in front of Negro audiences and tell them to continue to believe."

The four conditions bred by progress and leading to revolt are:

- Living conditions improve at a much faster pace for the dominant group than for the subordinate group. In every realm from housing to health, the absolute gains of Negroes in the 1950's "pale by comparison" to white gains, says Dr. Pettigrew. The riot commission noted that income gaps between black and white had risen from \$2,174 in 1947 to \$3,036 in 1966—this despite the fact that income for both groups was, and is, rising rapidly.

- Expectations in the lower class outpace real changes. In 1963 an overwhelming majority of Negroes—73 percent of those surveyed in a national sample—thought white attitudes toward black would be better in five years. More than 60 percent expected their income, working situation and housing accommodations to be better in five years; only two to three percent expected them to be worse.

- Status inconsistencies, as between educational achievement and job level, increase. "Negro attainments in education had already exceeded occupational status in 1940 and the discrepancies have grown since then," says Dr. Petti-

grew. Recent years have brought some reversal of this trend, but Negroes with equivalent education still make considerably less than whites; in a survey of Newark rioters, 70 percent felt their level of education warranted better jobs, higher wages and more responsibility.

- Members of the lower class broaden their perspective and begin to compare their conditions to those of the dominant group. Formerly, "many Negroes working as domestics knew full well the wealth of their white employers, but did not see this as a relevant comparison to their own lives," Dr. Pettigrew points out. But with migration to northern cities and mass media, particularly television, lower class Negroes now use white living standards for comparison and, in the process, discover social injustice. Life in a northern ghetto opens up just enough slots to reveal the promise of American life; not enough slots to reach it.

Whether these conditions find their complete expression through looting and violence now hangs in the balance. Social scientists have been predicting interracial war as the next grim step and have believed that violent reaction among whites will be the instrument of that war.

This notion, however, is challenged by Dr. John P. Spiegel, director of the Lemberg Center for the Study of Violence at Brandeis University, as a "common fantasy." The Lemberg Center, with a range of research projects underway and data on close to 200 disorders, is one of very few research facilities geared to continuing study of social violence. "I'm inclined to think interracial war will not happen," says Dr.

Spiegel. "Black people are not that interested in violence. Whites aren't all that interested either." Some white gangs might be ready to make trouble, but Dr. Spiegel believes local police will restrain them. Moreover, he says he does not find widespread evidence of police departments gearing for battle.

But Dr. Pettigrew suggests another possible outcome of the current crisis.

Negroes can move toward whites, against them or away from them, says Dr. Pettigrew. If they find riots do not work better than the Civil Rights Movement, they could well withdraw into worsened social conditions, alcoholism and addiction. Withdrawal will come, he says, if the country does not move to close gaps between black and white—a prediction much like the riot commission's grim forecast of two societies, separate but unequal.

Dr. Pettigrew draws his conclusions from a long history of developing social theory. From that background, he was able to answer the question, "Why the 60's?" and add a perspective not found in the commission's report on civil disorders.

But in no way does Dr. Pettigrew's analysis change conclusions reached by the commission, for the simple reason that both recognize the same central theme of civil crisis in the United States—the existence of mass relative deprivation, created and extended by racial prejudice.

The commission reached this conclusion through techniques more akin to journalism than social science. Although it employed social scientists in the riot investigation, the two did not work well together (see page 386).

PULSARS

The continuing search for an explanation

Even though many astronomers are willing to accept them as pulsating white dwarf stars (SN: 4/6 p. 326), new suggestions regarding the nature of the recently discovered pulsating radio sources are still coming in.

One of the first theories, now somewhat rejected, was that the objects, whose radio output pulses once in about 1.3 seconds, were neutron stars.

As if one neutron star apiece weren't enough, a group of Cambridge University astronomers now suggests that each of the strange sources consists of two neutron stars—rotating rapidly around each other. Drs. William C. Saslaw, John Faulkner and Peter A. Strittmatter propose this in the March 30 NATURE.

The sharp increases in radio intensity recorded from these objects is due, the Cambridge astronomers say, to a gravi-

tational lens effect. When one component of the binary passes in front of the other, its intense gravitational field will bend and focus the other's radiation.

The stable periodicity of the pulsation would result from the stability of the system's rotation. To get the proper effect, the authors figure, would require a pair of bodies, each with a mass half of the sun's, rotating around each other at a separation of about 3,000 kilometers. The period of rotation would be once in three seconds to yield radio pulses at about 1.5 seconds.

The orbital speed of the stars would be about one percent of the speed of light.

But when they had this figured out, Dr. Saslaw and his colleagues discovered that bodies of this size going around as fast as this would radiate gravitational waves at a furious rate.