
United neighbors take a bite out of crime

Scientists often explore the roots of violent crime by tracking individual qualities linked to such behavior. Kids, especially black males, who grow up in poor families headed by a single parent garner close scrutiny in this regard.

A new investigation suggests that collective characteristics of certain neighborhoods help keep their crime rates down. Murders, physical assaults, and other violent acts occur less frequently in neighborhoods where residents know and trust one another, show a willingness to supervise children in public places, and take other steps to maintain social order, researchers report in the Aug. 15 *SCIENCE*.

Neighborhoods that go begging for residents with a sense of unity and public duty incur the most numerous incidents of violent crime, regardless of the community's racial composition or average income, contends a research team headed by sociologist Robert J. Sampson of the University of Chicago.

Sampson's group devised a measure of these neighborhood attributes, which they call collective efficacy.

"We're drawing attention to a collective influence on crime that makes common sense but is understudied and underappreciated," holds Felton Earls, a public health psychiatrist at Harvard University who participated in the new study. "If we can figure out how to strengthen collective efficacy, it may lead to substantial reductions in violent crime."

The study drew on a 1995 survey of 8,782 adults, recruited at random from 343 Chicago neighborhoods. Neighborhoods were defined on the basis of census tracts, local conventions, and geographic landmarks. About 8,000 people inhabit each one.

Many of the neighborhoods contain large majorities of white, black, or Latino residents. A small proportion features a mix of races and ethnic groups.

Volunteers reported on community efforts to maintain social control by noting the extent to which their neighbors could be counted on to intervene if children skipped school and loitered on a street corner, if youngsters showed disrespect to an adult, if a fight broke out in front of their house, and if a local fire station faced budget cuts.

Participants estimated community cohesion and trust by indicating the extent to which neighbors were close-knit, helped others, inspired trust, worked to get along with others, and shared the same values.

From these responses, the researchers calculated levels of collective efficacy in each neighborhood.

After controlling for race, age, measurement errors, and homicide rates in

prior years, researchers found that collective efficacy rose sharply in neighborhoods with the lowest crime rates (obtained from 1995 police data on homicides and volunteers' reports of violent victimization in their neighborhoods). Collective efficacy influenced violent crime within neighborhoods more strongly than did widespread poverty, large numbers of first-generation immigrants, or transient occupancy of residences.

Considerable residential transience does tend to erode collective efficacy, however, the researchers note.

An unpublished analysis of the data also indicates that property crimes decline in neighborhoods identified as high in collective efficacy, Earls adds.

The researchers plan to track collective efficacy and other factors, such as school truancy, thought to be related to violent crime in the same Chicago neighbor-

hoods over the next 8 years. Discussions with residents will also delve into their ideas about how to stimulate collective efficacy, Earls says.

Although neighborhood efforts aimed at encouraging trust and social control may make streets and homes safer, other social factors—poverty, unemployment, lack of affordable housing—exert crucial influences on violence in local communities, the Harvard scientist remarks.

Investigators have long held that efforts at social control within neighborhoods influence violent crime rates, comments sociologist Richard B. Felson of the State University of New York at Albany. The new report takes an unusual position by analyzing social control as part of a collective trait rather than as a collection of individual behaviors, Felson asserts.

"We hope other researchers will now examine collective efficacy in the neighborhoods of different cities," Earls says.

—B. Bower

Eruption on Montserrat gaining strength

A 5-day-long series of explosive eruptions assaulted the tiny Caribbean island of Montserrat last week, piling more misery on an already embattled population. The recent outbursts marked the strongest activity to date in a volcanic crisis that has dragged on for 2 years.

"The recent increase in explosions obviously raises the level of concern over where this eruption is going to go in the future," says Willy Aspinall, a scientist with the British Geological Survey who worked at the Montserrat Volcano Observatory this summer.

The Soufrière Hills Volcano in the southern region of Montserrat, a British territory, came to life with several small eruptions in July 1995 and has since grown gradually more violent. Authorities on the island eventually evacuated the capital, Plymouth, and other cities in the south. On June 25, 1997, the volcano claimed its first victims, at least 10 people who had ventured into the evacuated zone and were engulfed by pyroclastic flows—superheated gas and ash that can exceed speeds of 100 kilometers per hour.

Margaret Mangan, a volcanologist with the U.S. Geological Survey in Hawaii, was working at the Montserrat Volcano Observatory at the time. "I think that people just had no idea of the type of fury that can come down the mountain. For many folks, June 25 was really an awakening to the dangers. In the past, my sense was that it was considered a nuisance, a pain in the neck, but not necessarily a personal threat. After the 25th, it became a lot more real and a lot more frightening for people."

Scientists are monitoring the volcano from a command center set up a few kilo-

meters northwest of the volcano. Seismometers provide some warning of impending eruptions by picking up the tremors produced as molten rock rises through the volcano. Recent eruptions have destroyed the tiltmeters that had been gauging how much the mountain swells and deforms. The observatory is staffed by a rotating cast of researchers from the University of the West Indies in Trinidad and from the British Geological Survey. Several scientists from the USGS have also served at the observatory throughout the last 2 years.

The mountain's unrest increased this summer, with periods of explosive eruptions in early July and again in early August that destroyed Plymouth. The series of blasts last week came like clockwork almost every 10 to 12 hours, occasionally showering rocks and ash onto the northern end of the island where Montserrat's remaining residents have sought refuge. Before the eruptions, the island had a population of more than 11,000 people. Scientists estimate that 7,000 of them have left.

A central mountain provides some protection for the northern end of Montserrat, but the events of recent weeks are causing authorities to reassess residents' safety, says Richard P. Hoblitt of the USGS in Vancouver, Wash., who has served at the Montserrat observatory.

"The shift to more explosive behavior has raised the concern that this thing could have a much larger event that could endanger greater parts of the island," he says. "People are getting increasingly pushed farther and farther into the north into less commodious circumstances. It's a small island to be living with an active volcano."

—R. Monastersky