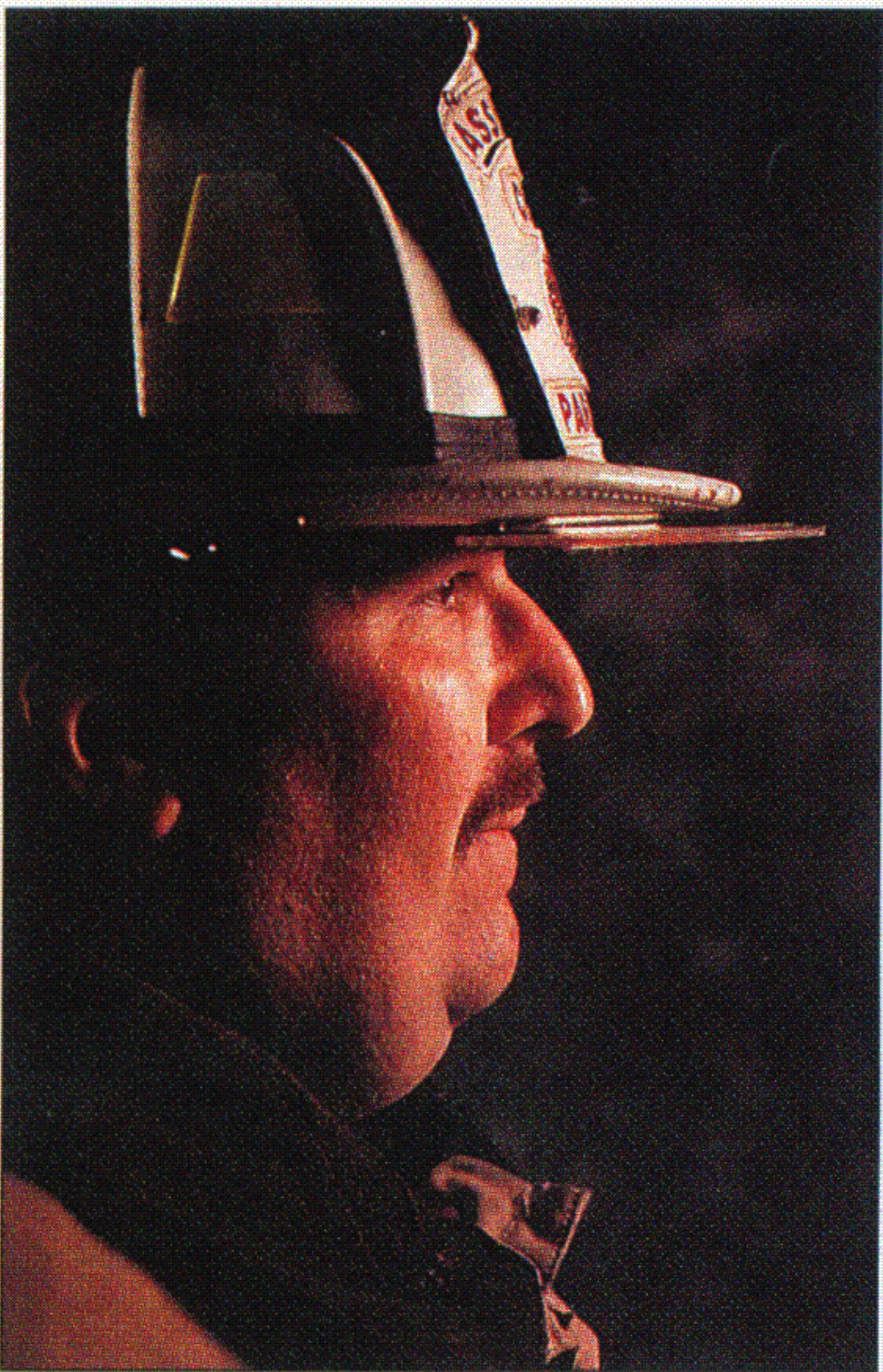


## BORN TO BELIEVE:

Your values about God, home, and country may be influenced by your genes

By Kathleen McAuliffe

Identical twins Mark Newman and Jerry Levey met for the first time seven years ago when they were 31, but they could have known each other all their lives. Not only do these men look alike, they think alike on nearly every topic from the Three Stooges (their idols) to three-piece suits (which they refuse to wear). In the political realm, the twins share an abhorrence of Big Government, oppose gun control, and advocate tough laws against



of a deeper bond than, say, bumping into a stranger at a party wearing the same outfit. Even hereditarians (those who believe genes affect psychological traits) maintain that social, political, and religious views are strictly culturally transmitted. Values, after all, are instilled at home, school, and church. For that reason, religious and political attitudes have long been used as a baseline measure of noninherited attributes in behavioral genetic research.

The alternative possibility—that attitudes might be influenced by our genetic makeup—seemed too farfetched to warrant serious consideration. Yet that her-

**"We agree on ninety-nine percent of things," says Mark Newman (at left). He and identical twin Jerry Levey met for the first time seven years ago.**

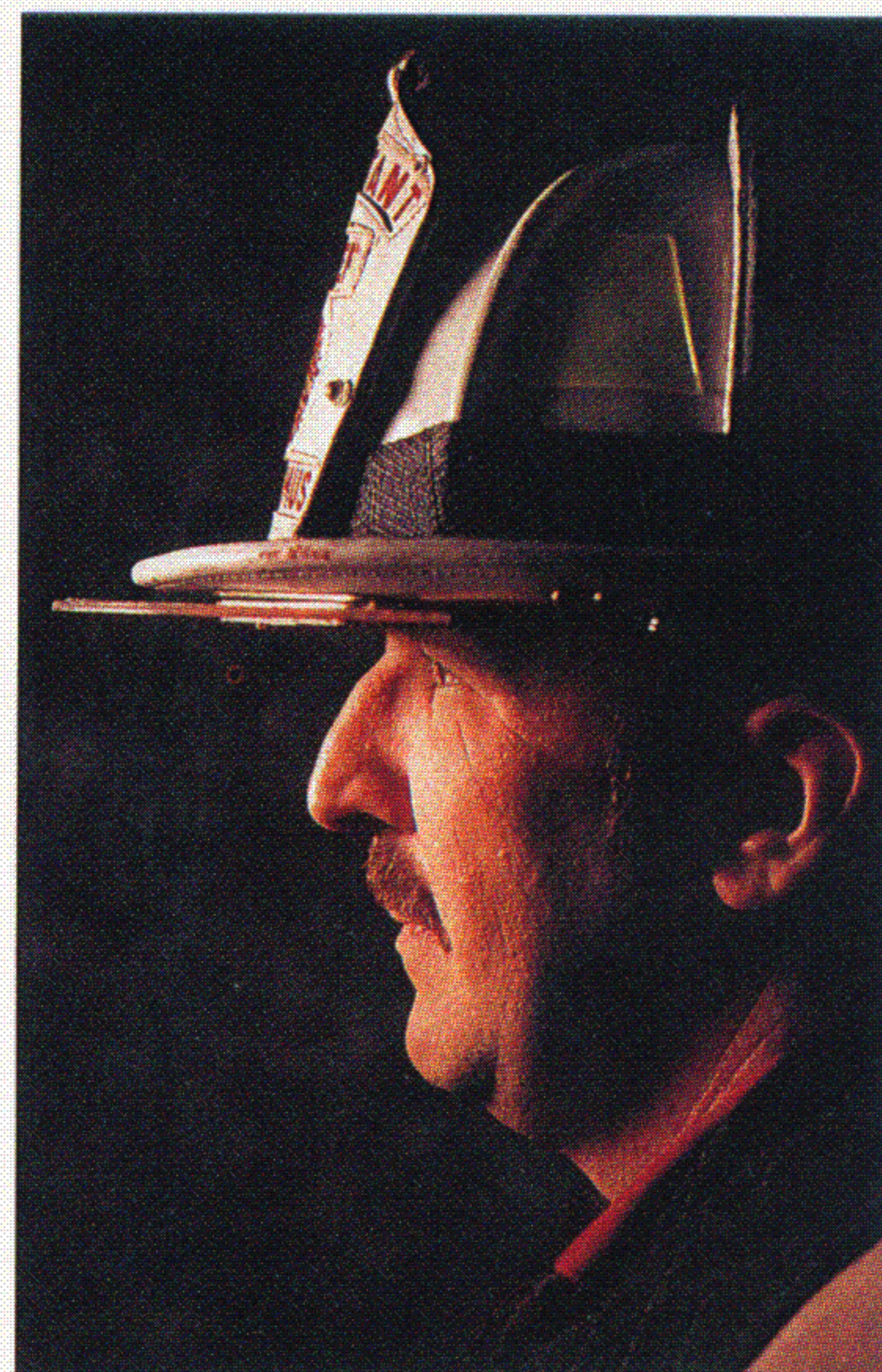
esy is now being invoked by scientists claiming to find a striking statistical correlation in the views of twins that holds up regardless of whether they are raised together or apart. "I was totally surprised by the results," concedes Thomas Bouchard, Jr., a psychologist who heads the twin-study program at the University of Minnesota. "No theory I was taught could explain these findings."

"Nature prevails enormously over nurture," proclaimed the English scientist Sir Francis Galton over a century ago. Modern environmentalists shunned that view. But by the Eighties, Galton's contention had gained backing from two related lines of research. The IQ scores of identical twins reared apart were found to have

a .7 correlation, meaning that roughly 70 percent of the variation of IQ in these adult twins is associated with genetic variation. Next, many personality traits were shown to be under heavy genetic influence. Identical twins reared apart correlate around 50 percent on measures of such characteristics as extraversion, fearfulness, and impulsiveness.

From the hereditarians' perspective, this made good sense. Genes, they argued, could affect

**Attitudes may not only be learned, they may be inherited.**



crime—including the death penalty. They firmly support a woman's right to abortion. Neither attends religious services, although both believe in God. Says Newman, "We agree on ninety-nine percent of things." Their most serious disagreement? "He likes the Washington Redskins. I prefer the Dallas Cowboys."

Reared-apart twins who grow up to hold virtually identical opinions are a curious phenomenon. Many researchers have dismissed such uncanny similarities as one of life's funny quirks: intriguing, but no more significant

the brain's organization and function, thereby influencing traits ranging from cognitive ability to temperament. For example, they postulated that a child born with an excitable, revved-up nervous system might find novel stimuli more alarming and thus develop into a shy adult. But none of these theories was construed to mean that attitudes are inherited. Such a notion was deemed ludicrous until a 1986 report by Nicholas Martin of Australia's Queensland Institute of Medical Research and Lindon Eaves of the Medical College of Virginia forced colleagues

**Identical twins show far greater similarity in values than fraternal twins.**

to reconsider.

The investigators surveyed the attitudes of 4,635 twin pairs in England and Australia. Their questionnaire tapped views on issues from religion and sex to the treatment of criminals. The twins were also scored on measures such as tough-mindedness and "left versus right" political leanings. The outcome: Identical twins showed far greater attitudinal similarity than fraternal twins. Male identical twins correlated 75



percent on a measure of political radicalism, whereas fraternal twins correlated only 52 percent. Attitudes on 19 items, ranging from divorce and apartheid to computer music, demonstrated a strong genetic component of transmission. By comparison, only three items showed significant cultural transmission.

Understandably, radical environmentalists have balked at these claims on the basis of a single study. But recently, their position has eroded with the publication of two more studies that appear to confirm and extend the

1986 findings. At Minnesota, Bouchard used five scales to evaluate religiosity in 53 identical- and 31 fraternal-twin pairs reared apart. After comparing their scores to a much larger sample of identical- and fraternal-twin pairs reared together, Bouchard concludes that approximately 50 percent of the similarities on all five scales are genetically influenced. In a related study, Bouchard measured a genetic influence behind the tendency toward traditionalism—that is, endorsement of religious values, strict child-rearing methods, punishment of offenders, and resistance to change.

**Scientists find striking correlation in the views of identical twins that hold up whether the twins were raised separately or together.**

Environmentalists still find the data hard to swallow. "Biology doesn't have one plausible mechanism to explain why colonialism or strict child-rearing would be heritable," says Harvard's molecular population geneticist, Richard Lewontin. "When someone tells me they've found facts in contradiction to everything we know, I'm skeptical." Although Bouchard admits the data is unexpected, he's not without theories. Attitudes, he offers, may be affected by deeper personality traits and cognitive styles. Genes, he suggests, may indirectly affect attitudes by introducing a perceptual bias, making an individual more interested in certain aspects of his or her environment. For instance, a person with perfect pitch—a trait now be-

lieved to be under heavy genetic influence—might find the mathematical elegance of Mozart's music more stimulating than someone without as fine an ear. If he's right, the implications are startling. For example, married couples who normally do not correlate highly on most traits show tremendous concordance in attitudes. This means that right-wingers tend to marry right-wingers and left-wingers tend to marry left-wingers. This "assortative mating"



causes an attitude clustering within families and increases the number of people at the extremes of the population. "These findings don't mean parents, teachers, and clergy can't influence kids," he says. "It would suggest that they are much less effective in transmitting values than previously presumed." ∞

The Minnesota Center for Twin and Adoption Research is continuing to recruit twins and help twins reared apart find their co-twin if they are searching. For more information, call 612-625-4067.