

# The Character of Cancer

## The controversial role of personality in the development of cancer is being addressed in several extended studies

By BRUCE BOWER

In 1948, a group of medical students at Johns Hopkins University in Baltimore bent over their desks and gazed at the amorphous image of a Rorschach inkblot, one of 10 such blots presented to them by an experimenter. Their written descriptions of what they saw included the following:

- a young couple kissing
- two people shaking hands
- two dancers
- two dogs snarling at each other
- two cannibals boiling Macbeth in a kettle.

Nearly 35 years later, psychologist Pirkko L. Graves and her colleagues rated these responses, and those of other medical students tested through 1964, on an 11-point scale for varying degrees of harmonious, emotionally "positive" interactions and antagonistic, emotionally "negative" interactions. Not unexpectedly, the former students whose pattern of scores indicated a distant, withdrawn approach to relationships or a poorly balanced mix of extreme emotions in relationships were more likely to have developed a severe mental disorder by 1984.

But surprisingly, report the investigators in the Nov./Dec. 1986 *PSYCHOSOMATIC MEDICINE*, the same pattern of scores was linked to the later appearance of another set of disorders — cancers, particularly those of the blood cells and the digestive and lymphatic systems. These consisted of cancers of the stomach, pancreas, rectum, large intestine and lymph nodes, Hodgkin's disease, leukemia and multiple myeloma.

Lung and skin cancer were unrelated to inkblot-based interaction scores, as were benign tumors, coronary heart disease, duodenal ulcers and hypertension. Other cancers, including those of the bladder, kidney, prostate, brain and thyroid, had a slight but statistically insignificant rela-

tionship to the Rorschach measure.

"The findings so far are suggestive," says Graves, "but they highlight an important psychological variable that should be further explored in relation to cancer."

Theories connecting personality and emotions to malignancy date back at least to the second century Greek physician Galen, who attributed cancer to a melancholy disposition. Since then they have stirred up considerable controversy (SN: 1/21/78, p.44). Studies in which large samples of people are psychologically tested early in life and followed for decades to chart the appearance of various types of cancer (or, for that matter, any other physical disease) are, however, rare.

One such project, in which researchers followed nearly 7,000 residents of Alameda County, Calif., for 17 years, showed that two types of social isolation — having few close friends and feeling alone even when friends are present — played an important role in elevating the risk of dying from cancer, but only among women (SN: 3/15/86, p.166). The greatest death risks were for breast and lymph cancer.

Graves and her co-workers at Johns Hopkins University are involved in a similar endeavor, known as the Precursors Study. A battery of psychological and physical tests was given to 1,337 Hopkins medical students in classes graduating between 1948 and 1964. Health records of the subjects, now in their 50s and 60s, have been collected annually. The Rorschach data are based on the 1,032 white males in the sample.

The researchers assume that a person projects his or her perceptions and emotional expectations of others into Rorschach responses involving two or more figures. Written descriptions satis-

fying this criterion were culled from 40,000 Rorschach responses obtained over the course of the study. Three investigators, including Graves, independently scored "interaction" responses (with substantial agreement among raters) on an 11-point scale ranging from +5 to -5. For example, "a young couple kissing" was assigned +5, "two dancers" was assigned 0 (for undefined or neutral emotional tone and involvement) and "two dogs snarling at each other" was assigned -3. Poor Macbeth and his cannibalistic tormentors were allotted a -5.

Subjects were then assigned to one of six "interaction patterns" based on all of their responses. The best-adjusted group expressed both affectionate and aggressive feelings with moderate intensity; the worst-adjusted subjects were withdrawn and distant in their descriptions or expressed emotions in extreme, unbalanced ways.

Graves acknowledges that there are fervent critics who contend that interpretations of Rorschach responses are often vague and largely useless. She and her colleagues are in the process of developing more specific measures from their interaction scale. "Unlike questionnaires, which are more fashionable these days," she says, "people bring stuff from their guts to the Rorschach test because of its projective nature."

Although the sample is limited to white male medical students, Graves says the inkblot interaction scale is a promising cancer predictor, at least for the blood cell, digestive and lymphatic varieties.

Another couple of decades will further test the scale's predictive mettle. Even with the large number of subjects, just 45 cancer cases have been identified so far, and only time will tell if still-healthy subjects who scored poorly on the interaction scale are destined for a bout with cancer.

Lung cancer, which evaded prediction by the psychological measure, appears to be most closely linked to cigarette smoking, she says.

On a more complex level of analysis, notes Graves, clusters of personality traits may be related to later health and illness. In a study that will appear later this year in the *JOURNAL OF BEHAVIORAL MEDICINE*, she and her colleagues divided 972 medical students from the Precursors Study into five groups based on 14 psychological measures, including Rorschach interaction scores. Over a 30-year period, students characterized as "loners" who suppressed their emotions beneath a bland exterior were 16 times more likely to develop cancer than a group that gave vent to emotions and, at times, took active measures to relieve frustrations or anger. Analyses have not yet been com-

pleted on the risks for specific types of cancer.

Similar associations are emerging from a controversial long-term study conducted in Yugoslavia. A reanalysis of the data being conducted by psychologist Charles D. Spielberger of the University of South Florida in Tampa and a Dutch colleague, Henk M. van der Ploeg, indicates that, although there were problems with the study, the repression and denial of emotions on a daily basis and in response to stressful situations was related to an increased risk for both cancer and heart disease.

"When these coping mechanisms fail and helplessness, hopelessness and depression set in, the development of cancer becomes more likely," says Spielberger. "If the failure of these mechanisms leads to irritation and anger, heart disease becomes more likely."

In a related area of research, Redford Williams of Duke University in Durham, N.C., and other investigators have proposed that enduring hostility is one aspect of "Type A" behavior most likely to increase a person's risk of developing heart disease.

The findings under review by Spielberger and van der Ploeg were obtained from West German psychotherapist Ronald Grossarth-Maticek.

In 1965, Grossarth-Maticek — at the time in his early 20s and with a spotty academic background — convinced Yugoslav officials to let him administer questionnaires on a wide variety of psychological variables to 1,353 inhabitants of Crvenka, Yugoslavia. Ten years later, he examined subjects' subsequent diagnoses of cancer or internal diseases, predominantly heart disease and diabetes. He claimed that 93 percent of those diagnoses could be predicted from questionnaire scores tapping into factors such as an overly rational, anti-emotional attitude, a tendency to ignore signs of physical illness and exposure to stressful life events.

This high prediction rate was "too good to be true," says Spielberger, and spurred him to contact Grossarth-Maticek and reanalyze the voluminous Yugoslavian data. Some critics contended that the results were fraudulent, but Spielberger says the problem was Grossarth-Maticek's lack of formal training in statistical methods. "His ideas are extremely important, even if his data are flawed," holds Spielberger.

Boston University School of Medicine psychologist Bernard H. Fox also plans to take a closer look at the Yugoslavian data. In addition, he says, Grossarth-Maticek has since conducted psychological tests and collected follow-up cancer mortality rates for a large sample in Heidelberg,

West Germany. The statistical strength of the psychological predictors is now being scrutinized by a West German colleague of Grossarth-Maticek's and at least one independent reviewer.

At this point, says Fox, the findings of all long-term cancer-risk studies, not just the Yugoslavian effort, are "iffy." A major problem, he notes, is the lack of comparable psychological measures in different projects; this makes it difficult to identify consistent connections between personality and cancer. Often, he adds, it is not clear whether psychological variables are merely associated with other "truly causative" factors. In the Alameda County sample, for instance, socially isolated women may have had poor diets and suffered from vitamin deficiencies that left their bodies more susceptible to cancer.

Graves's assertion that Rorschach "interaction scores" are potentially good predictors of certain cancers "is not out of the question," says Fox. "But what if other researchers administered the Rorschach test to the medical students — would they get similar results?"

Says Spielberger, "The Precursors Study is one of the most impressive in this area, but the proof of the pudding is in replication, and another such study won't be completed in our lifetimes." □

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