

Who responds best to placebos?

The placebo—a sugar pill or salt-solution injection—is one of the intrigues of modern medicine. If a patient who receives a placebo believes it is a drug chemically designed to relieve pain, he will often experience symptomatic relief just as if he had taken the real thing. The reason, apparently, is that the patient believes in what he is taking. Belief translates itself into pain alleviation.

Most physicians don't appreciate the power of the placebo, several Harvard physicians charged last summer in the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*. They argued that the scientific basis for the placebo's effectiveness should be explored so that it can be used more effectively to help patients overcome pain and also so that double-blind drug studies using placebos might be better designed (SN: 7/12/75, p. 20). Now three Carnegie-Mellon University researchers and a Rochester State Hospital researcher have made a start in that direction by attempting to see what types of people are more likely to respond to placebos. Their results, published in the February *MAYO CLINIC PROCEEDINGS*, are somewhat surprising.

Charles G. Moertel, William F. Taylor and Arthur Roth of Carnegie and Francis A. J. Tyce of Rochester set up a study in which 288 cancer patients were given 10 gelatin capsules each to take whenever they experienced pain. Nine of the capsules contained drugs chemically designed to relieve pain, and the tenth was a placebo. When the patients took a capsule, they were asked to record the degree of pain relief on a percentage basis, as well as any side effects they might experience—stomach upset, nausea, dizziness, impaired thinking, etc. The investigators then analyzed the results. Patients who

achieved 50 percent or greater pain relief from placebos were classified as placebo responders. Those who achieved less than 50 percent were classified as non-responders.

Of the 288 patients, 39 percent were found to be placebo responders. Not only did the placebos provide them with pain relief; they also experienced central nervous system side effects from the placebos, strongly suggesting that the effects they obtained from the placebos were psychological rather than physiological ones. The responders included more men than women, more professional women than housewives and more women with children than women without. Persons who had had a traumatic interruption of marriage through death, separation or divorce were more vulnerable to the placebo effect than persons who were currently married or who never had married. Even more intriguing, the responders were highly educated persons and tended to be professionals rather than unskilled workers or skilled nonprofessionals. However, the one occupational group most vulnerable to placebos were farmers.

Although these personality types seem on the surface to be radically different, they have one experience in common, the investigators point out. And that is that they all have heavy responsibilities, whether they want them or not. Consequently the dependency induced by pain and illness would be one that they would be poorly prepared to meet, and their resultant emotional need could well induce the self-deception of relief from a placebo. What's more, their knowledge and sophistication would make them familiar with technical advances in medicine, and they would expect comparable efficacy from their capsules. □

Social sciences: A not-so-funny report

"To reduce the tension and aggression of drivers caught in the middle of traffic jams . . . we should organize thousands of bikini-wearing young women, clowns and women with broken legs to strut, dance and stagger across the streets at every busy intersection in every city in every rush hour from now on." This is how Sen. William Proxmire (D-Wis.) this week summed up a study sponsored by the National Science Foundation of "environmental determinants of human aggression." And once again the witty senator makes headlines by making light of the social sciences.

But not everyone is laughing, least of all the scientists themselves and NSF, which funds much of the research that draws chuckles and guffaws when taken out of context.

Instead of trying to explain each piece

of research it funds, NSF has taken a different approach. It has had itself examined with respect to its involvement in the social sciences by a committee of the National Academy of Sciences. The committee last month issued a fairly critical report on the state of social and behavioral science programs in the NSF. The study was commissioned last year after several months of congressional attacks made it clear that funding for the social sciences was in jeopardy (SN: 6/21/75, p. 412).

The NAS committee began by setting forth its own bias. "The social sciences," it states, "are an integral part of the total scientific endeavor, and they must and can be pursued with objectivity, respect for evidence and intellectual sharpness." From there, the report goes on to examine the scope and quality of NSF programs in the social sciences and to make recom-

mendations for improving both the substance of the programs and procedures for managing them.

Basic research is discussed first. The committee finds that the quality of basic research is "generally excellent" and notes that many more "excellent proposals" have to be rejected for budgetary reasons. Since only about 30 percent of the qualified investigators in the social and behavioral sciences are supported by federal funds (as opposed to about 58 percent in the other sciences), the report says there is room for substantial expansion of activities in the social sciences. Large-scale and long-term projects tend to be either discouraged or rejected. Psychology, political science and anthropology are singled out as disciplines "that may be faced with severe funding problems." Specific areas that need attention are sensory psychology and perception, memory and cognitive processes. Among facilities needed are survey research organizations and a psychoacoustical center and institutes for advanced study.

In addition to calling for the use of outside panels to review all proposals, the report makes one more recommendation, one that might help the social sciences to be taken more seriously: "It does not appear that the NSF staff managing basic research in the social and behavioral sciences has effectively represented these sciences at the higher administrative levels of the Foundation, and in the Foundation's negotiations with the Administration and the Congress. It is imperative that the Foundation perform these functions better."

Basic research came off fairly well, considering what the report has to say about applied research. The RANN program (Research Applied to National Needs), the report says, "is of significantly lower quality than the basic science program. The RANN social and behavioral research is highly variable in quality and, on average, not impressive." Specific complaints have to do with the inadequate participation of "relevant applied scientists" in developing programs and soliciting and reviewing proposals; with RANN procedures which "now reflect excessive confidence in the ability of a few staff members to determine the proper direction for research programs, and with NSF's Research Applications Directorate which needs "greater participation of staff with training in the social and behavioral sciences."

In order to get itself out of the congressional funnies, NSF will probably have to take these recommendations seriously. Some of the called-for changes can be made within present budget constraints, but most cannot; and that leaves NSF in a rather precarious position. The question is whether NSF and the social scientists can get Congress to stop laughing long enough to come up with the funds necessary to stiffen the social sciences. □