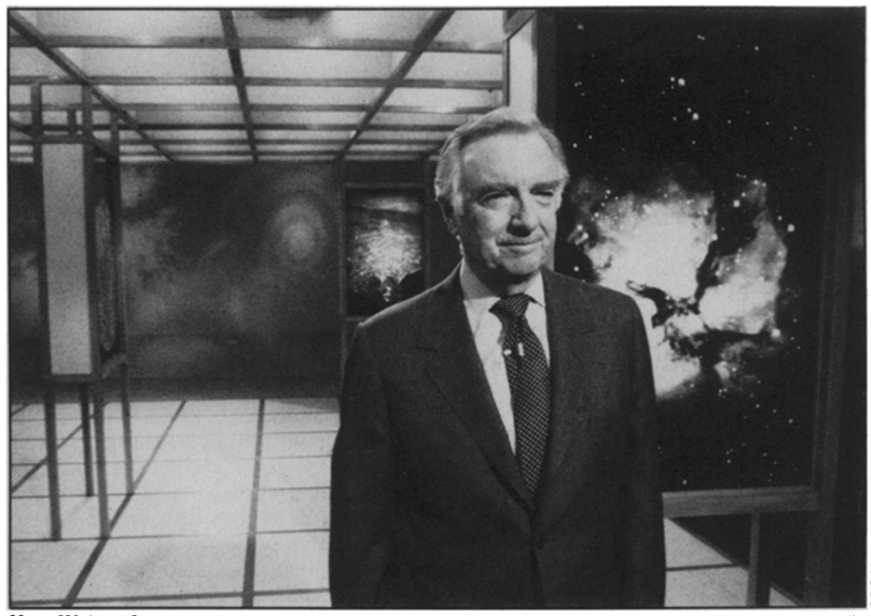
The Medium Gets a Message

Television hasn't proved to be a medium receptive to the depiction of scientific inquiry, but the efforts currently being waged on a number of fronts may soon pay off

BY JUDY KLEIN



CBS News photo

Host Walter Cronkite on the set of "Universe": Producer hopes "the audience is there."

Regular readers of Science News may have noticed a change in last summer's issues — the monthly Science on TV column was missing. Then again, it might not have been so noticeable. The column averages only about one-third to one-half page in size, with about six or seven entries. But at the start of the summer the programs were pulled out from under us. "NOVA" and the National Geographic series went into reruns and there simply weren't enough network specials to make up a column on a monthly basis.

This dearth of science programing was puzzling because the programs obviously are popular ("NOVA" has been known to draw as many as five million viewers). There appears to be a potential resurgence of science on TV — including new programs of myriad forms reflecting a variety of philosophies and meeting disparate tastes.

But getting those shows on the air — both on commerical networks and on stations of the Public Broadcasting Service — has had problems.

Part of the reason science shows have been so scarce is the love-hate relationship that so many people, including television executives, have with science. Carl Sagan, an outspoken critic of the way science has been treated on TV, explains: "Science is both respected and suspected." According to Sagan, humans as a species are predisposed by natural selection to understand the workings of the world. Yet, paradoxically, they have a deep suspicion of these forces, in part because of the enormous rate of change technological advances have engendered. Sagan says this results in a sense of disconnection, a sense he says was strikingly evident in the Johnson and Nixon administrations, in both of which science was profoundly distrusted.

Ron Bonn of CBS News, who hopes to change prevailing attitudes with a weekly science series, senses the same ambivalence, but interprets it as a reluctance by most to admit openly to a fascination with science. "It's as if you are digging up a secret part — it's a universal reaction," he says.

Commercial television, by its very nature, provides more of an obstacle to those who attempt to present science programs than does commerical-free TV. These problems were discussed by Jeffrey Kirsch, director of the KPBS Science Center in San Diego, Calif., in a paper he presented this year at the U.S.-Japan Seminar on Science and Society. He explained that the basic dilemma posed by commercial TV results from two traits. The first of these he calls "the marriage of the sales mentality to the electronic image." Commercial television does what the name implies — holds the audience's attention with "short bursts of entertainment and glossy information" in order to ensure the presence of viewers for the advertisements (which Kirsch calls "television's most fully developed art form"). The difficulty with trying to present scientific information within this framework is compounded by the second trait—the need for audiences to "achieve resonance with" (or identify with) what they are watching. The end product of working within such constraints, Kirsch says, tends to perpetuate stereotypes. An example of what happens when science is handled in this manner, says Kirsch, was the coverage of the U.S. manned space shots. Although initially covered extensively to appeal to "the American spirit of competition, exploration and pride in technical achievement," interest in the scientific aspect of the venture quickly waned.

One way of getting the viewing audience to achieve resonance with science is to put science in the context of the day's news events — as part of the nightly news. Until recently science was virtually ignored on most news programs. The explanation, in part, is the staccato style that typifies commercial television broadcasting but is compounded in news shows in which a great deal of information is to be compressed into a short time. Another problem is that the importance of stories is often judged on the basis of how visually exciting they were. Science stories, which could not readily be summed up in a matter of seconds and which involved work that did not lend itself to the TV camera, just weren't mentioned.

But things are starting to change, according to Steve Gendel of the CBS affiliate in Washington, D.C. Gendel, creator of a local news science and technology segment, traces the change to the 1960s. News programs began to expand in length then in order to cover the increase in stories brought about by the unrest in the United States — a by-product of the Vietnam War. The relative calm of the 1970s left the programs with time to fill. Some, like the NBC national news, have initiated special segments where stories — both science and nonscience — can be covered in greater length. Others, like Gendel's station, WDVM-TV, have inserted departments such as his "Future File."

In addition to the luxury of more time, the growing sophistication of production methods has been a boon, leading to everything from cameras that work in the dark to electronic photography. "When I started," Gendel says, "a lot of people said [a science segment] couldn't be done." Viewer response to the program, though, is proving those people wrong. The stories

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presented are "basically...science reports that include medicine," Gendel says, because medical stories "strike home to viewers." Gendel says that people are now calling up with ideas for future segments and doctors who previously resisted the idea of having their work televised are now calling up *asking* to be shown.

The problem of holding enough viewer interest to sustain a science series on commercial TV has proved, by and large, unsuccessful, and there are those who don't hold out much hope for its success in the future. Graham Chedd, former science editor and producer of "NOVA," flatly stated in an interview before he left "NOVA" that such a prospect was "impossible." CBS's Ron Bonn disagrees. Bonn hopes to transfer some of his fascination with the wonders of science by presenting a weekly half-hour newsmagazine of science called "Universe" on the heels of the nightly news. Walter Cronkite, well remembered for the way he communicated his joy at the wonders of science during the moon landing, will play host for the pilot (scheduled for June 27). The show, which Bonn hopes will "look like *Star Wars* and sound like 'Sixty Minutes,'" will contain segments on breaking science news, investigative pieces and theoretical pieces.

Asked whether he thought he was attempting the impossible in trying to find a TV audience for science, Bonn replied with some heat, "I fully intend to do it! The audience is there. I don't know how many indicators you need." He points to the widespread alarm exhibited in response to the events at the Three Mile Island nuclear plant as an indicaton of a widespread and growing concern about the effects of modern technology. At the other end of the scale, he mentions the overwhelming popularity of science fiction, hastening to point out that science fact "is just as interesting and mind boggling."

The reluctance to provide science programing on commercial networks is matched in the realm of public television by drawbacks in public TV's makeup. Its labyrinthine structure — including the Corporation for Public Broadcasting, which acts as a conduit for funds, and the Public Broadcasting Service, which represents the collective interests of its member stations — presents a formidable challenge.

Obtaining funding — either by the stations themselves through the Station Program Cooperative or by corporations or private foundations — is but one difficult step on the road to acceptance for broadcast. Another is a lack of guidance. There is no central science programing division, so the fate of potential progams is up to individual station production groups — many of which do not have scientists.

"NOVA" has shown that a science-oriented program can make it on noncommercial TV, but its approach to science is limited. According to executive producer John Angier, "We like to tell a good story, one that will interest and entertain and inform. I wouldn't like to put our aims in any more high-minded manner than that. We like to entertain first, and then the information and public understanding can come along later."

The "NOVA" philosophy is reflected in the composition of its staff. The majority of the filmmakers are nonscientists, an asset, they feel, since they can anticipate the level of audience comprehension. Topics for shows are chosen from suggestions made by the general public, as well as from the scientific community. Although the show has not deliberately skirted controversial topics — it has covered reactor safety, water resources policy and genetic engineering and plans to tackle such subjects as the policy issues surrounding oil spills and the control of toxic chemicals — its staff tries to focus on the human drama of scientific endeavor.

A series that is currently airing on public TV on the West Coast takes a radically different approach — and does it within the framework of a ground-breaking concept. "Synthesis" is produced under the auspices of the KPBS Science Center in San Diego, Calif. Now in its fifth year of operation, the Science Center was founded "to increase the public's understanding of science. ... To report on the people, events and policy issues that make science and technology essential to our society."

The director of the Science Center since its inception is Jeffrey Kirsch, who holds a Ph.D. in aerospace engineering. The Science Center has produced both regional and national programs, with three local science series to its credit.

"Synthesis" represents the newest of the Science Center series and is the first of its kind in the United States: a cooperative effort by a consortium of regional public television stations. "The unique goal of 'Synthesis,'" say those concerned with the Science Center, "is to provide accurate, understandable information on the scientific or technical aspects of high visibility policy issues and integrate it with a report on the political context of the public debate." A panel of science policy analysts suggests topics for potential shows and reviews scripts for authenticity, objectivity and educational value. Subjects of past "Synthesis" programs have included the Alaskan pipeline, Frank Press on the President's science policy, and the efficacy of the Ames test in detecting carcinogenic agents; future programs will include examinations of Western coal resources and nuclear waste disposal.

Still another approach will be offered by Carl Sagan in his series "Cosmos," premiering in 1980. According to Sagan, the aim of the show is "to explore the deepest connections of human beings with a vast and awesome universe in which we float like a grain of sand in the cosmic ocean." The proposed scope of the show takes in virtually all scientific disciplines and will employ the use of lavish special effects to heighten the wonder of science as it influences life.

These shows all take different tacks, but there is an audience they don't address. In early 1980 the Children's Television Workshop, creators of public television's "Sesame Street," will attempt to fill the gap. They will debut an educational series on science and technology aimed at children, more specifically the 14 million eight- to 12-year-olds in the United States.

Joan Ganz Cooney, president of CTW, says that this audience was chosen because research indicates that the age range represents a critical time in developing positive attitudes toward the understanding of science. Part of the problem, she says, is that many schools do not provide formal science instruction as part of the curriculum until the student enters junior high school — years after he or she has begun to develop the capacity for systematic thinking. In addition, many children — particularly minority children and girls — have already developed a negative view of science.

If the show is successful, its creators say, it will show the joy and diversity of scientific exploration as part of a cooperative human endeavor in which everyone may participate. The net effect of such a television program on children, they say, will be an acquaintance with various styles of scientific thinking so that, as children grow older, they will be better able to critically examine issues relating to science and technology.

With another television season ending, the monthly content of the Science on TV column may be meager; but if the enthusiasm of those attempting to bring science into the home on television is reflected by the viewing public, that won't be a problem for long. □

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are represented, called *Ramapithecus, Sivapithecus* and *Gigantopithecus*. He and Johanson announced that they would be meeting this summer to see if they could establish connections between the two periods in question. And now, with the even more recent announcement of the discovery of the earliest known higher primates, *Pondaungia* and *Amphipithecus* — possibly ancestral to the humans, apes and monkeys (SN: 5/12/79, p. 310) — the human family tree may have been taken back to its earliest distinct roots, some 40 million years ago.

In summarizing the significance of the recent work, Berkeley anthropologist F. Clark Howell, who chaired the Pliocene evolution symposium, told SCIENCE NEWS: "I think this is a normal-science kind of 'breakthrough' — sort of inevitable if you examine all the data dispassionately. It's very exciting, but it raises more questions than it solves." □