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## **Abstract**

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## **Keywords**

Extension, scientific literature, human communication

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# Harnessing Science to Strengthen Communication of Scientific Findings

K. Robert Kern

## **Remembrances of an ACE member who was around when it started to happen.**

Extension appointments accounted for most of the agricultural editors from the early days of activating the Smith-Lever Act (1914) that created the three-way sponsorship of agricultural extension. A lot of experiment stations had research editors before that, but interest was stronger in serving other researchers than users of new technology. Some state extension services had editors already, mainly at the state agricultural college. In fact, some of these editors had created their own interest group in 1913—before the Smith-Lever Act was passed; they called it the American Association of Agricultural College Editors; AAACE—Ace long before the name changes of the 1970s and later. Most of those writer-editors in AAACE came to the college offices from backgrounds in commercial print media or from journalism departments at the sponsoring colleges. Along with the research and organization specialists they served at state and county levels, extension appointees, including the writer-editors, understood the two goals they were charged to support under the federal extension act: (1) to disseminate “useful and practical” information and (2) to “encourage” its application.

From the beginning, then, the extension writer-editors understood that they focused on behavioral change in target audiences—they were not simply news reporters. They looked largely into their own upbringing to know and understand behavior of their primary audiences—many agricultural editors were reared on farms, home economics editors in farm homes; their strategy for communicating and influencing through communication was home-grown. Their application of science might have included the Scientific Method to state and analyze a problem, consider alternative solutions, then choose and activate one (or more) of those solutions.

That was the “science” that Hadley Read, one of the great AAACE innovators of the mid-20th Century, brought to his ag journalism class at the University of Illinois in 1948.

Some people in other fields were exploring science in search of ways to influence audience behavior. Political scientists seemed the most prominent. The journalist-columnist Walter Lippmann had in 1922 written of stereotypes as behavioral factors, people’s short cut to making sense of complex policies and people—pictures in their heads. A PR man named Lee had converted the image of Robber Baron John D. Rockefeller to a kindly old grandpa by having him hand out shiny new dimes to kids. George Gallup, at the University of Iowa, had created the Gallup Poll for gauging public opinion; German immigrant Dr. Rudolf Flesch, and some others, were studying how to improve understandability of the written word. These people were using science to study communication. A nephew of Sigmund Freud, Edward Bernays, had pulled together his scientific views on how to influence people in a small book in 1947 under the title of *The Engineering of Consent*.

The big boom in communication science in this country came as an adjunct of the World War

II effort: the Yale studies of human communication yielded experimental data about factors of communicator credibility; relative strengths in order of presentation for influencing audiences, and lots more. Several publications were using science to measure factors affecting audience attention and readership. One of the earliest and most successful of these was an Iowa friend of George Gallup, Don Murphy, editor of *Wallace's Farmer* magazine, created years earlier by ancestors of the fabled family of Henry A. Wallace, the New Deal Secretary of Agriculture. Not all editors took to the idea: one, Ben Hibbs, editor of *Saturday Evening Post*, I think, wrote his opinion under a title something like, "You can't edit a magazine by arithmetic." (Of course, he had to admit later that "arithmetic" had a lot to offer.)

I did my own first searches for scientific literature in human communication in 1951. I remember reading Rensis Likert's first article, getting interested in, and using the Likert five-point scale for measuring attitude. Attitude scales and Chi-Square for statistics seemed our useful tools. However, as a grad student and staff member at Iowa State, I soon came under the spell of Snedecor's *Statistical Methods*—Snedecor, of course, was the fellow who created the F Test of significance for the Britisher, Fisher's, analysis of variance, the workhorse for measuring confidence in experimental results.

At the time, a number of land-grant universities were offering courses, some giving degrees, in agricultural journalism—Iowa State's was the first with a course in 1907 and a degree after 1914. Only a handful had research programs going—essentially to serve those who were after advanced degrees in the field and had to write a thesis. Wisconsin and Cornell seemed to lead the pack at the time, as far as I knew. Iowa State was in it to a degree, although it had no committed researcher on its journalism faculty.

The Wisconsin Ag Journalism people, led by the legendary Bryant E. Kearl (a Ph.D. in political science) were doing some process research and a lot of what Bry called "administrative studies:" who was getting and reading newsletters?, what were dairymen's information sources?, what was the best time to reach farmers with radio?, etc.

It must have been 1952 when I got almost a 70% return to a mail survey on where farmers learned of an outlying research farm field day—using personalized follow-up letters. Lester A. Schlup, then head of the information group in Federal Extension Service, included my little article in his weekly newsletter to the state editorial offices. Such reports were showing up now and then, also in the infrequent AAACE newsletters.

Interest in communication research was popping up in many places; like bits of yeast in bread dough, pockets of fermentation started. In 1952, Dutch Elder, the editor in Iowa and one of AAACE's gifted statesmen, got a USDA contract to produce and broadcast a series of economics programs on the then-new television medium: could you "teach" economic principles on television. I was assigned part-time to do the audience research—concurrent telephone surveys of samples drawn by then-new area-sampling techniques invented by a student of Snedecor at Iowa State.

That project, and Dutch Elder, got me a research-reporting slot on a regional AAACE meeting at Purdue University (shortly after Ralph Reeder began his time there); also on the program of the national meeting at Berkeley in 1953. I think it was at Berkeley where we had a small research committee session; one of the guys there was Minnesota's Phil Tichenor, then a grad student at nearly Stanford University—there were others whom, sadly, I no longer remember; one was probably Bob Ames from Cornell, a stalwart in the ag communication program there—his chief, Bill Ward, was AAACE president that summer.

These were the times when some dreamers in AAACE began the process that led to the major

introduction of science into operations of land-grant (and USDA) editorial and communication services, *The National Project in Agricultural Communication*. (If you haven't already, you should look for Mason Miller's treatment of this historic introduction of communication science to AAACE.)

The first I heard of what became NPAC came from Francis Byrnes, then editor at Ohio State, at a less-than-regional gathering of staffs from eight Midwest states for an informal weekend of professional-improvement interaction. We met at White Pines State Park in northern Illinois; most of us could take a state car to the border, then just drive on the rest of the way into Illinois. Byrnes, Elder (who later chaired the board of NPAC), Read, Kearl, Harold Swanson, Minnesota, and others talked about a program that would introduce AAACE members to this emerging science of human communication.

With financial backing of the Kellogg Foundation, Battle Creek, MI, NPAC was created and its key staff of five began work in about 1956—Byrnes was one of that staff, associate director. By 1957, when I was on a Kellogg fellowship for doctoral studies at the University of Wisconsin (in the National Agricultural Extension Center for Advanced Study), NPAC was a functional center. Its research director, Dr. John Parsey, had launched a search for published and fugitive reports of research related to communication in agriculture. He created *Agrisearch*, a 4- to 6-page publication in which he (and grad students at Michigan State—including Hal Taylor, Don Wells, Bob Crom, Mason Miller, and others) reviewed studies on a specific aspect of communication, such as role of color in a pamphlet, measuring readability of printed material, the diffusion process, etc. In addition to reporting study method and the review of findings, the research staff gave its rating to each reported finding, ranging from strongly supported, still questionable, to not-supported. These periodic reports went in bulk to the editorial offices, perhaps the first time many AAACE members had been targeted with such information. Not everyone was supportive. Some old-timers were heard to remark, "Hell, I could have told you that without the expense of a study." And we might remark, "And it's nice now to know that you were right."

The great leap forward, in my opinion, came from the workshops offered by NPAC to the states and federal offices. The first workshop series—and probably the most powerful of all—was *Basic Communication*. NPAC had been established at Michigan State University—just a year or so after it shifted from MSC to MSU. Its academic home was in the College of Communication, whose dean was Gordon Sabine, a former faculty member from the Journalism Department of the University of Iowa.

NPAC brought advisory contingents to East Lansing to contribute on matters of content and teaching approach for the workshops. As a grad student at Wisconsin, I was invited to one of these sessions, over a long weekend—among probably a dozen others, including George Axinn, who was the first AAACE member to earn a Ph.D. from the extension project in Wisconsin, Roger Lawrence, extension training specialist in Iowa, and others from around the country. That planning group also included the cluster of communications, sociology, and psychology people at Michigan State, as well as, from Iowa State, George Beal and Joe Bohlen, the pair who did more than any others (before Everett Rogers) to collate and disseminate the findings of numerous rural sociologists who studied the field of diffusion of agricultural practices.

This workshop may not have been the origin of the (David) Berlo communication model, but it diffused it over the U.S., perhaps smoothing the way for Dr. Berlo's textbooks and world-wide academic contributions.

Another workshop was produced for visual communication; and there may have been a third

round. These workshops introduced an innovation in training within the land-grant colleges: to participate, each college paid a significant “enrollment” fee, designed to pay for the materials and staff required to teach the workshop—and included materials for its own Train-the-Trainer effort (another NPAC innovation). My colleagues and I at Iowa State did not take part, although several of us had been involved in the development and planning. That was the sticking point: our dean and director pointed out that his budget had paid travel costs and given staff time of at least four of his faculty for the planning: he was not going to pay again for what his staff contributed! A questionable logic, but one that stuck and kept us out.

NPAC was not the lone motivator of interest in harnessing science to strengthen communication of scientific findings. Much was happening in the business world, especially related to influencing customers through advertising and public relations. Dr. Gearhart Wiebe, director of research for the CBS Network, published an article in the early 1950s that got wide coverage: *Can You Market Citizenship Like Soap?* Wiebe spoke on the annual-conference program of the Iowa Cooperative Extension Service.

It was 1954 when I chaired the annual-conference planning committee for the Iowa Extension Service. A major feature of that program was a presentation by Beal and Bohlen on four giant (4 by 8 feet) flannel-boards of The Diffusion Process. They had reviewed the research on diffusion for the North Central Regional extension sociology committee, whose director-sponsor was Dr. Marvin Anderson, associate director of the Iowa extension service. The publication that resulted became the basis for their presentation—the inspiration for the staging came from a colleague who had seen the flannel-board, dual-presenters model when Candace Hurley, Iowa State home ec editor, and I developed it for training sessions with Iowa extension staff.

Dutch Elder was program chairman for the 1955 AAACE conference at Omaha—he didn’t get to attend it because he was the major support staff handling the tour by the first delegation of Russians who came to see modern agricultural practices in the United States. He had booked Beal and Bohlen to lay out The Diffusion Process for AAACE members. I recall Beal reporting, when he and Joe came to my hotel room for a breather after 40 minutes of post-presentation time with audience members, that they were already booked for state extension conference presentations in four states! An interesting sidelight was that their presentation took them before countless industry and educational audiences around the nation.

NPAC ended when the original agreement and funding ran out. Efforts to extend it did not bear fruit. But many dozens of AAACE members and state and federal extension staffs had been exposed to the emerging science of human communication. One convert was Ralph Reeder, head editor at Purdue University. Following his participation in the workshop, Reeder set off for East Lansing, where he enrolled to earn his master’s degree in communication. His practice in communication never lacked its foundation in science and scholarship. Dozens of others unknown to me were encouraged into graduate work; for some, research and scholarship became the leading passion in their work as communicators. Many stayed on in the departments of their advanced study; they became contributors to the science of their field.

The case of Everett Rogers gives some sense to the expansion of science to applied communication. Rogers, who did his academic work in sociology at Iowa State—and did a diffusion study for his doctoral dissertation—was on the Michigan State faculty when NPAC ended. Its research director, Parsey, had canvassed academic institutions and personnel for studies related to agricultural communication. In his files were reports (ranging from refereed journal articles to so-called fugitive

papers) of at least 521 studies. Rogers was offered these files, and he accepted them. The result was the first edition of his *The Diffusion Process*. From that beginning, he continued to gather diffusion studies literature, widening his screen beyond agriculture to industry, education, marketing—wherever scholars studied diffusion of practices or information, including the burgeoning literature from international sources.

In the middle 1970s, several of us (including Reeder) asked for an AAACE task force to look into ways of contributing a scientific emphasis for our colleagues in AAACE. NPAC had ended nearly two decades ago, but the research and scholarship had doubtless extended the frontier of the science NPAC brought to us. Cordell Hatch, Penn State, another who got his Ph.D. at the Wisconsin center, was ACE president (for the name change); he appointed the task force.

We on the ACE task force assumed that literatures had expanded with research and scholarship related to applied communication. We proposed a short-term reactivation of the NPAC model: gather the information, conduct a workshop.

Don Wells, an AAACE member from the early 1950s and more recently the head of graduate studies at Iowa State's Journalism and Mass Communication Department, served on the task force. With inputs from others, Don and I laid out a three-year program for updating current ACE members. We proposed to recruit, for each of the key areas of scholarship, a current scholar whom we would finance for a limited period of time in which he/she would review the current status of science in that area. The scholar would then take part in one or more workshops for sharing that current status with ACE members.

With only a single director and secretary, employed for a period of three years, the project would assemble the scholars, process written documentation, and plan a limited series of workshops to share current status with ACE members. Then we would close down the program.

The budget that Don and I put together would have required in 1980-83, about \$3 million. We didn't find an angel for such an ACE production. Don stayed with his role in graduate-study supervision; I took early retirement from Iowa State and moved toward the following 22 years of fascinating work in international agricultural and environmental communication.

Before that move, to show some return for the task force investment, Hal Taylor, then leading the information group in USDA, and I worked out a project. Using the interagency option of one agency seconding staff of another agency, I took leave from Iowa State, rented a flat in Rosslyn, VA, and spent more than five months reading in the Library of Congress. Despite the Library's antiquated (pre-computer) lending system at the time, I reviewed periodical literature in a dozen and a half fields of scholarship. My focus was on what's new in scholarship in this field—that is, what do the scholars know now that they didn't know in 1960? The result was a fat issue of *ACE Quarterly*, one article under the title (if I remember correctly) "At Liberty in the Library of Congress."

Much has happened since 1980, of course. Several institutions have built research more centrally into their applied-communication teaching programs. ACE has evolved to have researchers play a significant role in annual conferences and in providing content for its *Journal of Applied Communication*. The University of Illinois, which didn't have an ag communication major when I graduated there in 1948, maintains and builds a remarkable document service available to all who are interested.

It's a different world than I knew in 1950. Perhaps an ACE member today has all the research and scholarship support she/he needs. But I wouldn't bet on it.