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*A guide to effective communication with the media*

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THE  
SCIENTIST'S  
RESPONSIBILITY  
FOR  
PUBLIC  
INFORMATION

*Neal E. Miller, D.Sc., Ph.D.  
Chairman, Public Information Committee  
Society for Neuroscience, 1975-1978*

THE SCIENTIST'S RESPONSIBILITY FOR PUBLIC INFORMATION:

A GUIDE TO

EFFECTIVE COMMUNICATION WITH THE MEDIA

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SIGNIFICANCE OF PUBLIC INFORMATION

The growing importance of science in our society and its increasing dependence on the taxpayers' support makes it a duty of the scientist to cooperate with the science writer in educating the public. Unless reputable scientists supply accurate information to the popular media, the public is left at the mercy of the charlatans, the sensationmongers, and of exposés by the anti-intellectuals.

Science plays a vital role in our technologically developed society and it is important for citizens to understand something about it in order to make wise decisions. The public pays for our research; how intelligently they support it depends on how well they are informed. Since the chief source of public education about current research is science writing, we have a vital stake in trying to help with this work.

The purpose of this manual, prepared cooperatively by scientists and science writers, is to help you to understand the writer's problems, which are different for the different types of media, and to give you practical hints on how to work with science writers so that accurate information is effectively communicated.

"The more visible you people become, the more that helps us. Your willingness to talk with us, your willingness to just exchange the excitement you have about this research gives us new ideas. You have to be vocal and you have to be visible and you have to be willing to talk about what you're doing."

*Ira Flatow  
Science Editor, National Public Radio  
at the 1976 Science Writers' Seminar  
hosted by the Society for Neuroscience*

## GENERAL POINTS APPLICABLE TO MOST MEDIA

### You Can Control the Interview

Some scientists fail to do their share of informing the public because they are afraid. They should know that by considering in advance what they want to say and what they don't want to say they can control the interview.

As with most things in life, there are some risks. This manual is designed to help you to understand and to minimize these risks. On the average, helping to inform the public will yield benefits to science, to your institution, and even to you that far outweigh the risks.

### Avoiding Criticism from Colleagues

Investigators being interviewed should consider themselves as providing information to a public that requires it, and thus doing a service for the scientific community as a whole. As more scientists realize how important public information is for the support of science and understand the practical conditions under which the media must operate, the danger of being reproached by one's scientific peers for self-glorification is being rapidly reduced.

By following a few simple rules, you can avoid legitimate criticism. First, the press is not a place for announcing primary data or new findings to the scientific community. Material presented to the press should have appeared or at least been accepted for publication in a scientific journal, been presented at a meeting, and had adequate refereeing or peer criticism. Publication of an article or the presentation of a paper at a meeting is an event that may justify a news story. It also provides the writer with a "hook" on which to hang the story.

### Credit to Colleagues

Although the average newspaper article, radio, or TV program typically does not have space to give citations or list additional

names, you should, when relevant, briefly but pointedly mention one or two key antecedents to your work and the fact that similar work is being done in either several other unnamed laboratories or, if there is only one, a specifically named laboratory. Where such credits are especially important, explain this to the interviewer. You can suggest that other investigators be interviewed, though often it may not be possible for the writer to follow that suggestion.

Feature stories in Sunday supplements, magazines, or special-interest publications can specifically mention more investigators and laboratories. For such stories, be especially careful to give adequate credit, or if there is time, to refer the writer to other investigators.

The experienced interviewer knows that any segment of scientific research fits into a larger picture. He or she may in fact judge your reliability and accuracy by how well you clarify the context in which your work is done. The novice writer may need to be reminded that research is a process and that apparent "breakthroughs" are usually no more than advances on a very long continuum and are almost always the result of a great deal of previous research.

### Need to Achieve Simple Exposition

The science writer must explain things simply and clearly so that the average layman can understand them. Most science writers have to deal with a wide range of topics, from asteroids to zygotes, and those from local papers may also have to cover crime, sports, and politics. Therefore it is up to you to explain your work to them simply, clearly, and unambiguously in everyday language. The less translation the interviewer has to do, the less opportunity there is for errors and distortions to intrude.

*Never underestimate the intelligence of science writers, but understand how unfamiliar they may initially be with your special topic, its background,*

*methods, and terminology. Ask how much background the writer has in your particular field so that you will know what level is appropriate for your explanation. State your major finding, how it fits into the larger picture, its implications, future needs for research, where it may lead. Do not "talk down" to a writer. If you have to repeat an explanation, it could be that you were not clear enough the first time.*

#### Preparing a Written Statement

Providing a clear and simple written summary can help the science writer to write an accurate story. Ideally, your statement should be prepared in the newspaper format, with the main idea in the first paragraph and progressive elaboration in subsequent paragraphs. Longer, more thoughtful articles that review the work of several individuals always seem more effective and accurate.

#### Interest and Implications

Science writers must compete for space or time with other news events and stories. In this competition they must publish or perish. Their stories must interest the audience. Therefore you should point out the meaning and implications of your results, for theory, application, or both. But you must distinguish clearly between a step toward a possible application and the discovery, or even the imminence of one. If the work has clinical implications, avoid raising any false hopes of a quick cure that cannot presently be delivered. Ask writers to exert whatever control they can over the composition of misleading or sensationalized headlines for your story.

#### Form Letter for Mail Inquiries

Sometimes a report of a discovery with clinical implications will bring in letters from desperate people seeking help. A form letter can be used to correct misunderstandings or to give guidance. To deal with special cases a few sentences can be added to the basic form letter.

#### Brevity

The competition for space or time is intense, especially in the news media. The length of a newspaper column is 750 words; a 500-word story (a little less than two double-spaced pages of typescript) is typical. A radio story can range from an 8-minute feature segment to a 30-second news spot. Most TV presentations are short, 1-3 minutes. In all media, there are occasional longer, in-depth feature presentations, but these are most likely to appear in specialized or monthly journals, Sunday supplements, documentaries, or special features. All news stories, including scientific ones, must provide information in a hurry and must be made up of factual statements simply presented without technical detail and without ambiguity.

#### Cuts: Caution About Claims

An editor may have to cut a story severely to fit a column or to make room for urgent last-minute news. Similarly, a tape or film may be cut. Therefore you should avoid making statements that will claim too much if subsequent qualifications are deleted. The possibility of cuts is the reason for the newspaper format suggested above for your written statement.

#### Racing the Clock

Many writers work against imminent deadlines. They need immediate answers and do not have time for extensive research or any revisions. Those who work for daily news media may have only an hour or two. It seldom helps them to be referred to a book or technical journal in some distant library. Writers working for

weekly news media may have more time. Newspaper feature stories, articles in specialty magazines, and TV or radio documentaries allow more time. Authors of popular books on scientific topics are relatively well off, but even they must work fast to produce a book in a reasonable time so their earnings can be equivalent to a decent hourly wage.

Some researchers, with the best of intentions, will return a writer's phone call three, four, five or more days later, noting simply that they have been busy. This perhaps is understandable in a world where research results involve weeks, months, and years of work, but often it is totally worthless in the world of the newsroom, which measures life in hours.

The scientist must remember that to the science writer, deadlines may be enemies, but they cannot be ignored. The experienced reporter who telephones a scientist for comment, advice, or information will indicate the subject of the story and when the deadline is. It may be mutually advantageous for the researcher to suggest that the reporter telephone his/her home that night, if the deadline is close. Or they may agree that a collect call by the scientist to the writer's home is better for both their schedules.

#### Checking What Is Attributed to You

Often writers need to make a direct quote or to specify you as a source; they cannot attribute a statement to "a source close to Mother Nature." Usually, it is possible to get a writer to agree in advance to check the accuracy of direct quotes or statements attributed to you by reading them over the telephone, perhaps with one or two of the preceding and following sentences in order to establish the context. When time allows, writers will often agree to let you see the part of their manuscript that deals with the materials you have supplied, along with the material that establishes the context. Most science writers are highly responsible professionals who are eager to check accuracy whenever possible. But the scientist should confine suggested corrections

to definite errors of fact or grossly misleading errors of emphasis.

*You must realize that the requirements of popular exposition are quite different from those of an article in a technical journal, that the writer is a professional craftsman who has developed his or her own style, and that condensation and clarification inevitably involve a certain amount of oversimplification and even distortion -- but may be much more accurate than what the reader had in his mind before!*

Some writers will not check accuracy with you. When the time is too short for such a check, that is the time for you to be most cautious.

#### Inquiring About Credentials

There are a very few writers or producers who, in asking for an hour or more of your time, may give you the impression that they have been commissioned to do a story or show for a prestigious publication or network, when, in fact, they only hope to sell something there. Diplomatic questioning can determine the exact nature of the publication or station involved and the writer's or producer's relation to it. Most producers or writers are willing to cite or show samples of their previous work. This can help you to decide how much time to invest.

#### Public Relations Office in Your Institution

Before making any major commitment, check a writer's credentials through the public relations, information, or news office in your institution. Although most science writers are professionals with high standards for improving the public's understanding, there are a few exceptions and a few publications that specialize in sensationalism or headlines with exaggerated claims. Alert public relations professionals can check the credentials of the writer who is contacting you and can find out whether the individual is a member of one of the three

professional organizations of science writers (the National Association of Science Writers, the American Medical Writers Association, or the American Society of Journalists and Authors). Public relations offices can also give the neophyte useful advice and guidance, arrange interviews, prepare press releases, and help with other interactions with the media.

#### Judging Reliability: A Two-Way Street

The field of science journalism is growing as a specialty, and the number of writers uniquely qualified to bridge the gap between scientists and laymen is increasing. Some have degrees in science or science journalism. Others have, during years of experience with reputable publications, developed a special interest in the biological sciences. Writers of this calibre are perfectly capable of following developments in neuroscience research and choosing the right time to produce a well-researched article on a "hot" topic. You will probably recognize the names or at least the affiliations of such people and should consider yourself fortunate if they seek you out.

However, such highly skilled and specialized writers are still a small part of the spectrum that includes the neophyte from a local daily who may arrive at your laboratory fresh from a flower show. Always take pains to ascertain the level of sophistication you are dealing with and adjust your approach accordingly.

Remember that the best interviewers are anxious to avoid being "burned" by inexact or incomplete information, and may have checked your credentials to find out where you have published and who recommended you as a reliable source. A healthy degree of skepticism on both sides should have a favorable end product: science news that is informative and interesting without encouraging credulity or predicting imminent wonders.

#### A Personal Relationship

By observing the media, you can learn who the reliable science writers are in your area. It usually is easy to establish

a good personal relationship with them. There is no substitute for such a relationship.

#### Supplying Specific Facts or Referrals

Sometimes a science writer may telephone you to secure a simple scientific fact, to check on the definition of a technical term, to learn which authorities to interview on a topic, or to secure an opinion on the reliability of someone else's statement. Answers to such questions can be extremely valuable in helping a conscientious writer prepare an accurate story; your aid can mean the difference between the dissemination of incorrect or correct information. In answering such questions, bear in mind the pressures of time and other practical constraints on the science writer. If in doubt, ask how much time and effort is available; for example, it may be much more useful to refer the writer to an adequate local authority than to a more eminent distant one. It usually is useless to refer the writer of a news story to a "great" review in a journal.

#### Supplying Frank Criticism

Be candid; while trying to be perfectly fair, do not hesitate to point out that a claim made by a colleague is controversial and to suggest a good representative of the other side of the controversy. Point out, when necessary, that certain claims are greatly exaggerated. If you can't take responsibility for a criticism, as a last resort refer the writer to a criticism that has appeared in print -- ideally, finding it promptly and reading it over the phone. As one science writer aptly said: "A major value of disagreement is that it is a demonstration of truth at work."



### SPECIAL POINTS RELEVANT TO TELEVISION

Television has more impact than any other medium. It has become the focal point of most homes. Many children spend more time with TV than they do attending school. In its brief history, it has changed the lives of its viewers by opening up the world to them in a way no print or other electronic medium could. But its potential for education has only been partially realized.

Because of the power of TV, permitting a television crew and cameras to come into your laboratory can have great value for science. This may disrupt your work for half a day, but those few hours can make a powerful contribution to the public understanding of science.

Good science programs do not just happen; they must be carefully planned. TV's strongest point is the presentation of interesting material, ideally involving movement. Use your imagination in calling to the producer's attention various possibilities in your laboratory for telling the story through dynamic views of research in progress, the blackboard, animation, or diagrams. If you are taking high-quality motion pictures of any of your research for any reason, you should save a print with the idea that excerpts from it may possibly be useful in some television program.

Determine in advance the range of the time likely to be allotted to the final presentation and don't be surprised if this is quite short -- 30 seconds to 8 minutes -- because of the high premium on television time. Be prepared to have many times that amount of film taken. The producer will need adequate materials from which to choose.

Because of the impact of TV, you should be sensitive to any shots that might be disturbing if seen out of context (e.g., an operation without the viewer's being told that the animal is under surgical anesthesia). Most producers will be at least as sensitive to this problem as the scientist. The extremely rare producer who tries to sneak in a few tasteless shots should be shunned.

Before agreeing to appear on a live program, you should know something about the general nature of the program, the other participants in it, and, ideally, the producer.

If the TV shots are being recorded, ask about the possibility of repeating a small portion if you believe you could give a much better answer to the same question (or one phrased in a more relevant way) the second time. Do not ask to do this too often!

It is sometimes useful to give a TV producer a relevant reprint, especially if it is not too technical, or a lay-language version of your work -- conceivably even to develop a tentative script, which certainly will be altered. Inquire first how much written material would be appreciated.

While a live interview on politics or sports may be best if it is completely spontaneous, this does not necessarily hold true for science unless the interviewer is quite familiar with the material. Thus, it is best to go over the material first with the interviewer and agree on a rough outline. This does not mean a completely stereotyped, memorized sequence, but rather spontaneity within a sequence of ideas that has been generally agreed upon. Ignore the camera, look at the interviewer; let him/her lead you along. Keep your answers short and clear.

Often, a TV producer is willing to give you a copy of the completed film or videotape or your portion of it. Occasionally, producers are even willing to give copies of material not used. Such material can be very useful in teaching, either in its original form or with excerpts joined together by black leaders, so that a 15-second bit of illustrative action can be used as an "animated slide." Obviously, you should never release such material to a competitor of your benefactor without the latter's permission.

SPECIAL POINTS RELEVANT TO RADIO

Many of the considerations that apply to television apply also to radio. But in radio the medium is exclusively sound. While the sound of the human voice is adequate for communication, it is highly desirable to incorporate background sounds, laboratory sounds, or animal sounds to enliven the dullness of a straight exposition.

Commercial radio coverage of the neurosciences generally is limited to short "filler" notes in the news as brief as 30 seconds or package spots of 1-3 minutes. In addition, news of prize awards, major findings, or government support announcements is handled much as it is by the print media, but radio is expected to provide an even greater measure of immediacy and entertainment. Full-length feature shows exploring a field or a discovery in some depth are rare in commercial radio.

The National Public Radio System, chartered by Congress, is part of the Corporation for Public Broadcasting, which funds radio and television. Most of the 200 public radio stations are located on college campuses across the country. More science news is likely to be heard on this network than on commercial radio.

The science writers for radio compete with other news for air time. The average story runs between 3 and 6 minutes, equivalent to 3 or 4 news columns, but there are some 20-minute in-depth features.

SPECIAL POINTS RELEVANT TO NEWSPRINT

The primary function of newspapers and news magazines is to provide information on "what's new" to a broad readership, but entertainment is also a consideration. The news must be presented simply and must be interesting enough to hold attention. *Science news will be read only if it is presented in a simple, direct, and graphic way, and it will be printed only if the Editor believes that it will be read.* While the primary content is the printed word, a good photograph or diagram can occasionally be useful.

It is important to remember that the journalists are first and foremost surrogates for their readers. As such, the journalist's primary obligation is to news as he or she perceives it -- not to the sensibilities of the scientist or the scientist's institution. Moreover, controversy and scandal are every journalist's meat -- and even better if they can be found hidden in some ivory tower. Remember the painted mouse....

There are very different kinds of newspapers and news magazines, each of which takes pride in its individuality and unique qualities. The following is a rough categorization.

Large Dailies

These include "world" newspapers such The New York Times, The Times (of London), the Washington Post, and Christian Science Monitor. Since one of their functions is to record ongoing history, they attempt to report news in all subject categories, even the scholarly and technical, if the event has broad significance. But all stories must compete for available space. Thus, depending on the vagaries of politics, military conflict, or earthquakes, a news development involving science may or may not make publication.

Newspapers must have a specific event as the point of departure for most of their stories. Since yesterday's news is stale, the reporter is racing a deadline. Wherever possible, it is merciful to give the writer a news release in advance of

a specific event such as a scientific meeting. The story can have a release date that will be honored. It is useful to find out the paper's deadline and to schedule press conferences accordingly or, better yet, to arrange their timing in advance with the reporter.

Feature stories. The large newspaper will occasionally publish a longer story that may or may not arise from an important new development. This feature story will review the subject area, providing background to recent developments, and attempt to give a broader understanding of the field to the general reader. Such stories are generally preplanned and researched, include information from interviews, and may take days or weeks to prepare instead of the minutes or hours that the news story is allowed. Feature stories are short versions of the more leisurely and literary feature articles that appear in weekly or monthly magazines.

#### Medium-Size and Small Dailies

These make up the majority of newspapers in the country. Their needs and the coverage they provide differ from those of the large metropolitan paper. Usually they will not have a writer who specializes in science or medical topics; the writer assigned to a science story one day may cover a fire the next. Most of the world or national news coverage in such papers comes from the wire services. Local names and places are important to these papers, and their primary interest may be in clinical developments rather than basic research. A major story from the wire service about a scientific breakthrough in another part of the country may be ignored in favor of a lesser story coming from a local school or hospital and featuring the names of local scientists.

#### Wire Services

A scientist may think he or she is talking to a small hometown newspaper in Oregon about a small clinical study, and the next thing that happens is that Mother calls from Maine with

congratulations about the Nobel-quality work she read about in her local paper. This is the work of the wire services, the most powerful -- though least understood -- organs of American journalism.

Polls show that most Americans get their news from television, but most of the news they hear on television is generated by the wire services -- at least anything from out of town. And frequently, these wire services -- the Associated Press (AP), United Press International (UPI), and Reuters -- get their news from local papers.

*So if you are talking for any print reporters, no matter how small the newspaper, no matter where you are, always consider that what you say may wind up in newspapers or on TV all over the country, maybe all over the world. The scientist must take time to help the reporter get it right. The reporter may over-emphasize clinical implications, trying to make page one with the work of a local scientist, or may misunderstand the implications entirely. Frequently, a wire service will pick this story up, without checking back with the scientist, and it will get national exposure at perhaps four paragraphs' length. This is the perfect length for a newspaper to fill out a column. So be forewarned.*

*The wire services have their own competent science and medicine correspondents, but they are powerless to keep off the wire these small out-of-perspective stories from local bureaus -- often written by young, ambitious reporters looking for the big story to start them up the ladder.*

### Large-Circulation Weeklies

Examples of this type of publication are Time, Newsweek, Parade, and US News and World Report. (The National Enquirer poses special problems. It is frankly sensational and the distortions generated here can produce real harm in patients looking for "cures." Unfortunately it has such a large readership that one regrets to see its reporters left exclusively to the less reliable sources they frequently use.) These publications cannot cover fast-breaking news the way the dailies do, but they attempt to provide more in-depth coverage of events and trends in the world. Their reporters have somewhat more time to research their stories than do those for the dailies; sometimes an article can be several days or even several weeks in preparation. Because their resources and circulation are so large, their impact is powerful.

### News Periodicals for Physicians

These organs attempt to update professionals on all the new developments in their fields. Medical World News, Medical Tribune, Hospital Practice and AMA News are examples. For the most part, their readers are busy practitioners who can manage to stay current in their own specialties but need to be aware of what is new in all areas of medicine, including basic research. Stories of new developments are brief but provide enough data and names of individuals for the reader to follow up in the literature a story that is close to his/her needs. The occasional feature article gives more perspective. Writers for these publications are necessarily highly skilled professionals with special training in one or more branches of medicine. They attend professional meetings and cull professional journals for leads to news. These writers can take time to prepare excellent articles. They are writing for a sophisticated and influential audience. Nonetheless, their requirements are closer to those of a newspaper than to those of a technical scientific journal.

### Magazines and Books

Magazines that are not primarily oriented toward the news (e.g., the New Yorker, Ladies' Home Journal, Cosmopolitan, Esquire) will occasionally run a feature story on a scientific topic. The requirements for these stories are similar to those of feature stories in newspapers or Sunday supplements. Sometimes they are written by staff writers who have little background in science; at other times, a science writer may be commissioned to produce a specific story or, as a freelance writer, may sell one to a magazine. There is more time for research, more opportunity to interview a number of different investigators, more chance to check facts and allow the scientist to check what has been written.

A popular science book must have the same level of simple, clear exposition as the other printed media, but because of its greater length, can deal with more complicated subject material in more detail. The writer has more time to research the material, but unless there is some type of grant support, in the long run he or she must average a reasonable number of words per day in order to earn a living.

EXPLAINING THE PROCESS, OR BEYOND THE PRODUCTS OF SCIENCE

The conditions that confront most of the media, especially the pressure for time, space, and interest, favor stories that emphasize the end-products of science -- the practical results, the new techniques, surprising phenomena -- rather than the process by which science develops and sometimes, often quite unexpectedly, leads to important practical consequences. Yet, in order to make intelligent decisions concerning science, the public needs to know something about the process by which it advances -- the fumbling trial-and-error, the logical way in which a scientist devises tests to choose between alternative hypotheses, the long chain of small advances gradually leading to new understanding, and the unexpected discoveries. Of course, all these points cannot be covered in a single story, but sometimes a story can illustrate one or another part of that process. Realizing the constraints upon the media, the scientist should seize every possible opportunity to illustrate the scientific process as simply and clearly as possible, to make it interesting, and to try to persuade the writer of a feature article or TV show to cover a somewhat narrower range of materials in greater depth. If this can be done via the media (and also in the introductory courses over which we have vastly more control!), it will become more difficult for an otherwise intelligent politician to make a ridiculous statement such as: "We're not paying you people at NIH to satisfy your curiosity about the causes of disease; we're paying you to cure it!"

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