

RADIATION PROTECTION INFORMATION AND EDUCATION FOR THE PUBLIC :
MISTAKES AND LESSONS , STRATEGIES AND TACTICS.

H. Brunner, dipl.Phys.ETH
Secretary, Fachverband für Strahlenschutz
Assistant head, Health Physics Division
E I R, Eidg. Institut für Reaktorforschung
CH-5303 Würenlingen, Switzerland

1. Summary

Radiation protection and nuclear safety have become major targets for attacks by critics and opponents of many sorts. We must try to improve our methods for coping with such challenges and avoid to waste too much of our time or forces. By learning from past mistakes and analysis of the situation appropriate tactics and strategies can be developed that take care of the immediate needs and set some long-range goals for improved information and education of the public. Characteristics and problems of using or cooperating with news media are discussed and some proposals for actions by IRPA and its affiliated societies are presented.

The following ideas and proposals are the personal views of the author.

2. Problems and types of confrontations with the public

Within the last few years radiation protection and nuclear safety have suddenly become major targets for attacks by critics and opponents of many sorts. The types and motives of such attacks have been discussed a great deal and shall not be repeated here. We all agree that the reproaches are not justified, neither absolutely nor in perspective to what happens in other protection and safety areas. But there exists an obvious information gap in the public, and at least part of the blame for this falls on us. Complaining does not liberate us from these problems. The defense against the uninterrupted, often exaggerated or even stupid, but nevertheless effective attacks consumes more and more valuable time of authorities and experts without apparently leading to a quick success or visible end of such debates. The fact, that even government agencies or parliamentary committees are not ashamed of inviting self-proclaimed so-called "independent experts" and professional opponents on the same conditions as the real qualified experts shows how far the confusion about who is right or wrong has gone already. One is sometimes reminded of two sinister manifestations of the Middle Age, the Inquisition and the Crusades, which both were due to the agitation of fanatics appealing to idealistic motives and fear, and which resulted in terror, retardation of progress, defeat and failures. Some countries had to bear the consequences for centuries. Frustration, anger, resignation, exhaustion of forces and neglect of main and long term tasks may be the undesirable results for our profession if we do not try to improve our methods of coping with such challenges or if we waste all our forces for short-lived emergency actions at the expense of a well planned long-range program. We must learn from past mistakes, analyze the situation and develop appropriate tactics and plans.

We have to deal with various characters, types and forms of confrontations, communications and contacts between experts and the public. The character of a

confrontation can be voluntary and offensive, when we have taken the initiative, set the goals and selected form, place and time, or it can be involuntary and defensive, when somebody else has invited, challenged or attacked us on his own terms.

We can assume the following coarse types of contact :

- A) Public performances: information, discussion or contradictory meetings; hearings; panel discussions; press conferences (sometimes with radio and TV coverage); seminars and symposia etc.
- B) Mass media : press; radio; television;
- C) Publications: books; specialized periodicals; laws, regulations, standards ; in the future audiovisual items such as TV cassettes;
- D) Educational programs

Some aspects of each type with regard to our problems are summarized below, and some of them are discussed in more detail in Appendix B.

A) Public performances have more frequently an involuntary character, being organized by local political parties, societies, opponent groups, utilities or authorities. The audience is restricted to some hundred persons at most (radio/TV coverage excluded) and it may often be selected or biased. The time available is always too short, be it for lectures and statements or for discussion. The atmosphere is often unfavorable, unfriendly or outright unfair. Success or failure are very much dependent on the chairman or moderator and on the show talents of the active participants. Technical troubles with microphones and other inadequacies create additional problems. Meetings are often invaded by outside organized opponent groups which try to monopolize the performance. Biased reports by mass media may present a completely distorted picture of the event to a much larger audience. Such public performances have mostly only short-lived effects and are rather negative and unsatisfactory to anybody really concerned apart from "showstars" such as politicians or professional opponents. The level of the discussions is either primitive or far above the comprehension of the audience. To sum it up : many public events are simply alibi-functions or much fuss about nothing. We should try to avoid them or restrict them to the voluntary variety.

B) Mass media have their own rules and characteristics that differ locally and nationally and that have to be known precisely if any efficiency is attempted. To some extent also many politicians and other public opinion-makers have to be handled similarly. Mass media are primarily interested in "news", i.e. new informations, sensations, stories, scandals etc. not yet published or diffused by other mass media. The main quality of such news must be to make headlines, to increase the circulation or audience. With some forms of mass media almost no limits of truth, morale or respect exist, only a sharp drop in circulation or rating can stop them. "Bad news is good news" for news media and much more interesting than dry facts. To be first to publish a sensation or information is much more important than to inquire or check the validity before publication. The correction of wrong informations is usually left to those involved or concerned, but does only rarely get the same amount of publicity or prominent place as the original uncorrect feature. The public or audience is large and of more or less unknown composition. Usually the confrontation will have an involuntary character. We have to expect biased, exaggerated or distorted presentations, even some sort of "censorship" by publishers, editors or producers with the easy excuse of lack of space or time. There is usually no long-lasting interest in a special topic with the exception of some outstanding newspapers or periodicals that have specialized editors or writers, or of some "engaged" publications or reporters. Most newsmen have to deal with a large variety of topics without having time or interest to acquire a deeper knowledge. Few discussions or direct contacts with the public are possible; only a small percentage of letters to the editor are published, and no news medium likes to admit a mistake. With some notable exceptions the effects of news media

presentations last only a few days. Voluntary, active cooperation with news media is only possible if good personal relations to editors or producers can be established. The "target" public or audience is quite different for each medium, newspaper or program feature, and a "market and media research" similar to the one done by advertising agencies is necessary for optimal efficiency.

C) Publications is used here as a collective term for all kinds of printed or otherwise duplicated material that are available and distributed to the public over a rather long or even unlimited period (e.g. through libraries). They can be used and reused at any time by laymen or experts, individuals and groups, in one or several countries at any not predetermined times. They may be copied, referred to, cited, summarized, often also discussed in mass media or special periodicals. A great advantage is ample space for detailed treatment of a topic. The size of the public is unknown. There is no direct mutual contact between author and readers and no direct, immediate discussion. Misuse is possible without chances for clarifications or corrections. But many characteristics and rules are similar to those of mass media, and equivalent precautions are necessary for good results.

D) Educational programs of all types and on all levels are probably the most efficient contacts with long-lasting effects, extended and repeated interactions between specialists and the public. But good programs need detailed, time-consuming preparations, and their efficiency depends to a great deal on the pedagogic qualities of the lecturers or teachers. Such programs allow sufficient time for a thorough presentation of the material, explanations, repetitions and discussions, but also for the creation of an atmosphere of confidence between author and public which facilitates the implantation and acceptance of the informations. The audience will be small, except for some basic courses or radio/TV educational series, but if regular teachers are selected as the first targets and the topic can be incorporated in various curricula and professional training programs, the repetition over many years will increase the size of the public and slowly build up a useful and solid foundation of basic knowledge.

The present situation challenges us mostly with involuntary confrontations of the types A and B. In order to improve our position and win back the initiative we need a long-range program for the conquest of types C and D which will produce a feedback on the mass media and the general public. Public performances should be reduced to the indispensable minimum, i.e. voluntary events such as press conferences, information meetings and symposia in a quiet, fair and matter-of-fact atmosphere with an audience that knows at least some basic facts. But most of our present activities are fire-fighting emergency actions due to unexpected attacks. We struggle to hold our positions, and many defensive counterattacks suffer from a lack of time and preparation and may make things even worse.

3. Some typical mistakes

As the mistakes during public confrontations in the nuclear field have been discussed frequently, I shall only describe two typical mistakes or "syndromes" which are causing many failures but seem to be difficult to root out.

3.1. The "prestige syndrome" or the "Peter Principle" of prominent speakers.

A favorite trick to attract the public is to feature well known personalities as principal attraction or "decoration". Apart from the fact that a Nobel Prize is no a-priori qualification for omniscience, infallibility or even just competence in a field different from the one for which the prize was awarded, many of the prominent people are also victims of the manager syndrome or the "Peter Principle". If they only have to deliver a well specified "show" such as an opening speech or an invited lecture this may work perfectly well. But there are only few such prominent persons who have time to keep so well informed on all details and latest developments that they are able to survive a battle of public discussions with a well prepared team of opponents. Fortunately there exist excellent active scien-

tists and specialists who also are fine speakers with a flair for good presentation, didactics and effective discussions. You may be congratulated if you can get some of these for a meeting. But very often you will have to select between one of two types of prominent participants. One are the top managers of government agencies, research institutions etc. who by profession have to defend certain official positions. If they have enough routine with confrontations and get a thorough briefing by a good staff, things may go well. Otherwise they can sometimes be manoeuvred into a trap and may have to improvise answers to unexpected questions. Such answers often reach their "level of incompetence" and provide excellent weapons for opponents.

The other variety of prominent people could be compared to showstars (in his latest novel Koestler names them even "callgirls"). They seek publicity, like to be in the spotlight, want to see themselves in news media, and ride, for personal satisfaction or opportunism, on any popular "bandwagon". They are smart and often have a previous solid foundation of scientific or other achievements, they are good, witty speakers, and they are willing to deliver a talk on any favorite subject such as environmental pollution, world models, futurology or birth control, provided they get well paid and publicized. They have no scruples to change the bandwagon as long as they can ride on top. But they keep mostly to the negative side in some top level protest movement, for it is much easier, less time-consuming and more colorful to criticize, to ride sharp attacks, to appeal to unconscious feelings, fears and antagonism in the public than to study a problem in detail and to try to give a balanced but much less dramatic picture, or to offer constructive critique and useful proposals that are more than fancy, futuristic but entirely unrealistic dreams.

3.2. The "babylonian or ivory tower syndrome" is well known and only too frequent in public performances of all kinds. Many speakers or panelists do not care about the intellectual level or basic knowledges of their audience. They feel obliged to prove their competence by using a disguise of specialized or sophisticated language largely incomprehensible to the layman. They embark on long monologues that drift away from the problem, or they complicate it by details, boundary conditions and reservations, that nobody anymore can understand whether the answer is yes or no. All the public does understand is that they do not understand anything, and that the experts do not know everything and seem to disagree quite a lot. No wonder that the public has less and less confidence in experts. If somebody really knows a subject he should be able to talk about it in clear simple terms and make the essential meaning of it comprehensible even to a layman. But beware of the other extreme: you may turn an audience against you also if you misjudge their level to the low side and use a baby language for an intellectual public.

4. How to improve our methods

Our forces and means are limited, much more than those of many "opponents" (this term will be used for the various partners or enemies in confrontations). We need better methods and systematic planning if we want to improve our situation. It can be compared to a small army fighting a much stronger one, and part of the solution to some of our problems lies in the application of old proven military practices in planning, decision-making and tactics. These methods have in recent years been rediscovered and "re-invented" as "modern" management techniques under fancy names, but to anybody who knows military staff methods they are old familiar practice. To summarize: we must analyze past experience, recognize the typical and main mistakes, learn from other, similar situations, draw the necessary lessons, build up a good information network and start a thorough and systematic planning of a well defined program.

It is a fundamental rule for military decision-making that before you can decide about the appropriate action, you have to analyze and evaluate the situation and its possible developments by considering the following factors :

- the task which you have to carry out or the goal that you have to reach. It must be well understood and clearly defined. Vague orders end often with failure.
- means, resources, manpower, allies that you can count on for your task;
- the "environment", "background" or "climate" in which the operations must be executed (time, place, duration, form, political, economical and psychological factors and influences etc.);
- Who is your enemy or opponent ? This includes real opponents as well as discussion partners or the audience. What is his position ? What are his motives ? What means and capabilities does he have ? What may be his plans and goals ? What support may he get from the audience ?
- What is your "firepower" ? What "weapons" are at your disposal or applicable, i.e. which arguments, documents, informations, proofs, experimental results, visual aids etc. are available for the support of your cause ? How effective are they against the probable targets ?

Once we have precisely defined the task or goal and impartially analyzed the situation, we must consider possible solutions or actions. These must be evaluated for efficiency, advantages and drawbacks, chances for success and possible reactions of the opponents. Only when we have gone through these mental exercises and can support them by some "experimental" evidence or "reconnaissance" are we ready to decide in principle how to act. Once the decision has been made, the tedious work of elaborating detailed action plans and preparing and testing all manpower, means and resources follows before we can start the action.

For our present defensive and involuntary confrontations part of that process will forcibly have to be shortened or improvised due to lack of time and freedom of action. But it would be inexcusable to omit it altogether even in "involuntary battles", and it would be a crime to start a voluntary action before all these mental and material preparations have been finished and tested. In the Appendices A and B a collection of hints and ideas for many possible situations is given.

We should also look for examples and models from other domains in everyday and public life with similar problems, where solutions have been found and tested and where we can learn a lot. Let me just name a few of them without getting into details: advertizing agencies, public relations in industry or government (Atomic Forum organizations, Technical Information Division etc.), professional societies such as ANS, IEEE or medical associations, accident prevention, traffic safety, environmental protection, industrial hygiene, civil defense and army, sports, churches, charity programs, political campaigns, educational programs and methods, mass media, etc.

5. A general action program for public information

5.1. Short-range emergency program :

No doubt there is an immediate need for an emergency program in order to hold the positions and survive in the flood of opponent charges and concurrent environmental protection fashions that, though late come, now try to monopolize the field and preach the only saving faith. The details of such "crash-programs" depend very much on local circumstances and resources, but some common problems can be seen.

Part of our efforts should aim at bringing the discussion back to solid ground to a fair, matter-of-fact exchange of rational and objective arguments and facts. This may in some extreme cases require a strong, well aimed action against some fanatic and unfair opponents in order to uncover, expose and isolate them. Even when we get attacked we must make a clear distinction between honest and knowledgeable opponents who merit our consideration, and unfair fanatics without sufficient qualifications whom we must openly declare not to accept as discussion partners on an equal basis.

A second goal must be to win back the initiative from opponents and opportunists. News media, public, politicians and authorities should get the basic and any new informations and facts first and without delay from us, from the specialists, not in a distorted or delayed way from news agencies, scandal reporters or biased opponent bulletins. We must inform quickly, openly and correctly, whether the information is favorable or not (incidents etc.), and we must establish direct information channels to all concerned. All this is of course easier if we have managed to remain neutral in the nuclear dispute and can keep above economical or ideological biases. A fine example for such correct information is the recent book by Lindell and Löfveberg on "Nuclear Power, Man and Safety" which unfortunately up to now only exists in its original Swedish version.

The information handling problems play a key role here as everywhere in modern life. The flood of correct or wrong informations, arguments, statements, reports in the public discussion is even larger than in the scientific and technical areas of radiation protection and safety, and it is often much more difficult to track down the original source and form of an information or to keep up-to-date with the latest developments and publications. This problem cannot be solved by individuals but needs a well organized cooperation on national and international levels. Below I shall offer some ideas on how our societies and IRPA might help.

5.2. Long-range program

Our long-range tasks have mostly educational aspects. We must familiarize the public, the news media people, the specialists of related fields, officials and politicians with the basic facts on radiations, their effects, protection, regulations, safety of nuclear technology and its applications, and relations to other risks in modern life. Radiation must become as familiar to them as space flight or stereophonic music.

This requires educational activities on all levels and for all ages from high school to professional or academic training. The best approach is to get first the teachers on all those levels interested and trained in the subjects, then incorporate the topics in the curricula of future teachers and instructors for public schools, higher education or professional training. The last step would be the integration into the curricula of the various educational programs. Besides regular school programs we must not neglect post-graduate programs, on-the-job training in industry, adult education programs of universities or television networks, evening courses etc. In some countries basic military or civil defense training may offer additional opportunities to inform large parts of the population. If it makes things easier, our subjects can be incorporated into larger ones such as hygiene or environmental protection as suitable carriers of more general appeal or interest.

6. Some suggestions for action by IRPA and its affiliated societies

Most of the work in the information field has to be done on the national level, it is therefore primarily a challenge for our societies. A few examples from the activities of the Fachverband für Strahlenschutz show some possibilities. One of our main goals is to keep the members in close contact with the society and each other and to give them as much information as possible. A news bulletin of about ten pages is mailed to them four times a year and contains all information on our society, its working groups, coming events, interesting news, publications etc. Each year's general assembly is combined with a symposium, the proceedings of which are given to all members free of charge. The exchange of informations and experiences and the cooperation are further supported by a number of informal working groups, started by the initiatives of interested members for the discussion of problems from a certain special area such as incorporation analysis, working place monitoring etc., or, to mention two groups of special interest for the topics of this paper, on education and on public relations problems. The results

of the sessions of these groups are reported in the bulletin. When a problem has been treated, a short report, review or recommendation is issued, published and distributed to all members and, as the bulletins and proceedings, to representatives of societies, government agencies etc. On the local level the few health physicists on place must bear the whole burden of information, and it is vital for them, the society and our profession to keep all members well informed and up-to-date. If we cannot manage the information and education problems and needs of our members we have no chance at all to handle the public information problems.

How could IRPA and its societies help us? When I say "us" I mean all individual health physicists wherever they are in any way active in public information or education. We urgently need an excellent, fast and reliable information network on an international basis. Many symptoms and "viruses" of the present radiation and safety "syndromes" originate from other countries, often the USA, and infect other countries very quickly, because some opponent organizations have a good and fast information network with wide distribution. If we cannot build up something at least equivalent, we will lose the race. Certainly, in the nuclear field the Atomic Industrial Forum and its equivalents in other countries, or the American Nuclear Society, have done a fine job, but they cover only part of our field and not always in the necessary details, apart from a certain bias towards the promotion of nuclear energy. As health physics also extends into medicine, environmental protection, industrial hygiene and other areas, we need our own system which covers all these fields. To subscribe to the information services of all the other societies and organizations is far above the financial means of a health physicist, and our only international link, the "Health Physics Journal", is far too slow and too expensive to fulfill this information task adequately. One reason why many societies almost never supply informations to the "news" section of the HPJ is the delay of several months before publication which often makes the information outdated. What we would need is an "IRPA Newsletter" similar to the fine examples of the newsletter of the Health Physics Society or the new "Radiological Protection Bulletin" issued by the British National Radiological Protection Board. This should be produced by cheap means and distributed, through the societies, to all members every 2-3 months. It should contain reviews of all new informations and developments, coming events, recommendations, new reports and publications etc. In order to produce such a newsletter, IRPA would need an Information Center with a small permanent staff and offset printing facilities. This IRPA Information Center should be in close continuous contact with all IRPA societies, their working groups and members and through those with national authorities, committees etc. Through the Executive Council of IRPA and directly close connections and information exchanges should be installed to such international bodies as ICRP, ICRU, ISO, IEC etc. and to organizations such as IAEA, NEA, WHO and others. This IRPA Information Center could become a sort of clearinghouse for information on all aspects of radiation protection and even develop into an international central information service which not only publishes newsletters, reviews, handbooks etc., but also could handle individual requests for special informations. My proposal does not aim at multiplying the flood of informations, but rather at forcing it back into one or a few reliable and fast channels, reaching all of us with a minimum of delay and supplying all necessary informations in a compact form but without gaps. Of course such a project would need active cooperation and support by the societies and probably higher financial contributions to IRPA. But it could create a very useful, internationally acknowledged function of IRPA and free it from the false image of being an organization which only sponsors some congresses. It would make IRPA as useful and renowned as ICRP or certain international organizations, but without the political drawbacks and restrictions of the latter and with a more practical note than the former.

7. Some implications for our profession

I believe it is an obligation for all health physicists to be or become active in the education and information of the public. This has also some consequences and feedbacks for our profession. Health physics must remain and become even more a respected, well known and well based profession of high standards with well trained and informed personnel on all levels. This can only be done if we support our societies and IRPA and actively take part in their programs, and if the societies learn to operate as efficiently as medical associations. We must not lose the initiative or the tasks to other, more active, professional societies or promotional organizations. Close and constructive cooperation with national and international organizations, authorities etc. is very important, among other reasons also for the adequate representation of practical viewpoints. Our position should be objective and as neutral as our respective jobs allow. Correct information and the truth must be disseminated. We must continue to discuss problems openly on an international basis as we have done up to now without being afraid of publicity, abuse by opponents or pressure from interested parties.

But a good deal of self-criticism is also necessary. We must constantly improve our professional standards, eliminate mistakes, bad practices and shortcomings. All health physics tasks in industry, medicine and research must be carried out by well trained and capable health physics personnel. We should never accept an unduly reduced or unsatisfactory health physics program with the argument that economical considerations are more important than adequate and reasonable safety standards and qualified personnel in sufficient numbers. If we do not fight such bad practices we shall soon lose face and credibility. Nuclear power, nuclear medicine and other applications of radiations should be promoted, but not on the costs of reduced protection.

Appendix A

Some ideas for actions

1) "Rent-a-program"

Many professional societies, clubs and other organizations have a regular program of lectures, colloquia, information or refresher courses, excursions etc. The organizers of such programs are chronically short of topics and ideas. They welcome any reasonable proposal or offer. If our societies can offer ready "package programs" of speakers or excursions and have put those into operation a few times, a growing demand may be expected from many halls.

2) "Do-it-yourself" or "autosuggestion"

People believe best what they have found out themselves. Students, laymen or specialists from other fields who are interested or even critical of protection or safety problems could be assembled in study or working groups and be given the task of studying a well defined problem. Our societies could sponsor such a study or at least support it actively by providing the necessary subtle guidance, assistance with literature and consultants and openly and critically discuss the findings with the groups. If the results are interesting, suitable publication should be arranged and coverage by newsmedia organized. Such an experiment has of course its risks and costs a lot of time, but it will help such a group to get a better insight into our problems, philosophies, working methods and the wealth of information available as well as the amount of work and experience necessary for judging problems.

3) "Group therapy"

We cannot educate or convince the public or its opinion-makers by large public meetings of the "Billy Graham" style. Producing mass hysteria of any kind never is a lasting therapy. The "single patient treatment" on the other hand costs too much time, money and manpower. But a suitable group therapy over a weekend or a working or vacation week may offer interesting possibilities for treating carefully selected groups of prominent people, opinion-makers, politicians, newsmen. Such people who get a lot of publicity cannot be converted, convinced or neutralized in a public event where they feel obliged to give the kind of "show" the public expects. The only chance to get across any barriers is to separate them from their audience and to offer them an attractive and pleasant opportunity for free, unrestricted discussion and useful information on an exciting topic in a family-type group of interesting people, without any official obligation, function or publicity. But do not mix newsmen and prominent people, for the former could not resist the temptation of reporting on the event, and the latter would feel obliged to continue their "show". A well prepared, even exclusive program frame is important, but sufficient time for informal personal contacts, discussions and brainstorming must be available. Do not preach or try to convert, be open, informative and matter-of-fact. Present your views and problems, but let also the guests give their view of the problems and suggestions for solutions. The most important goal is to win their confidence, to break down political or other barriers, to release tensions and to get rid of resentments. The effects will not be felt immediately, but such a program will bring positive results in the future to the profit of our long-range programs. This kind of treatment could also be called the "F-treatment" where F stands for fun, friendly, food etc, but also for "feed facts, fight fiction".

4) The "domino or bandwagon effect"

Newsmedia, politicians and many other prominent people like to jump on a bandwagon, i.e. to be on the forefront of any actual happening or event getting sufficient publicity. If we therefore can get some influential people or news media interested in our problems such that they give them a lot of publicity, there is a good chance that other mass media will cover this, too and try to follow such a trend in order to get their share of the profit. Careful selection of the primary target will produce an optimal amount of spin-off.

5) "Desensibilisation" or "vaccination"

The negative public reactions and fears are very much like allergic reactions or contagious diseases, and some treatment similar to desensibilisation or vaccination might help in these cases, too. We should try to feed repeated small doses of correct informations to the public in attractive forms. We might even imitate the "syndromes" by using "anti"-headlines as eye-catchers, but followed by the correct informations and facts. Look how advertising agencies launch a new product or idea and you will see what could be done.

*

Appendix B

Some remarks, lessons, rules and tricks

Public performances :

- 1) Set a clearly defined goal for the performance.
- 2) Carefully select the chairman or moderator and the other active participants.
- 3) Choose well informed, witty, quick-minded and eloquent speakers. Avoid prominent but superficially informed or narciss-minded personalities except for well prepared harmless official functions such as opening ceremonies without public discussion. For the real battle respect the "Peter Principle" and select a well informed staff member rather than the top boss.

- 4) Prepare your defense and attacks. Locate the weak points of the opponent. Study and analyze his previous actions, publications and arguments and prepare your counterattacks. Keep up-to-date on the latest developments. Imagine what moves the opponents might try (each has his typical fashion). Look at your own arguments from the opponent's viewpoint, try to guess where he might find your own weak spots.
- 5) Analyze the tactics of left wing opposition groups, radical student movements and protest groups. There are many similarities in their methods to those of nuclear opponents.
- 6) A good training in dialectics and rhetorics is very useful.
- 7) Get your supporters into the audience. Let them ask those questions which the local audience should like to ask but does not dare to or does not get a chance to ask because organized opponents may try to monopolize the discussion. Do not forget the Trojan horse trick.
- 8) If you get selected for an involuntary type meeting, try to get the best possible and most complete informations on the following points :
 - Who are the organizers, what are their goals, background, connections ?
 - Who are the other active participants, what are their views on the topic, their backgrounds, interests and connections ?
 - What audience and what intellectual level can be expected ?
 - Local, political and psychological background and environment ?
 - Available time, technical resources etc. ?
 - Are there any plans or risks that the meeting might end with the "unanimous adoption" of a biased resolution ?
- 9) An informal contact (lunch) between the speakers and other active participants before the performance may release some tensions, clear up some misunderstandings, settle some problems or disputes beforehand under four eyes. But do not get caught or misled by nice manners and words, some people change and uncover unexpectedly when on stage and before an audience.
- 10) Say clearly "yes" or "no", call a thing either black or white, use pictures that are as simple as woodcuts. You never have enough time to get into details, so why trouble the audience with things they cannot understand ? Make your statements short, clear, impressive. They should hook like a good joke and be remembered. Be witty but do not exaggerate and do not imitate a clown or show-master.
- 11) "Steal the show" by answering some likely arguments of your opponents before they get a chance to present them, let them blast open doors. Attack is the best defense. Avoid to be caught or attacked unexpectedly.
- 12) Keep calm and matter-of-fact. Select your weapons according to the type of battle and the weapons of the opponents. Make a difference between a public meeting with its catch-as-catch-can rules and the fair-play sunday-school atmosphere of a scientific meeting.
- 13) If you are well prepared you can often refute or disprove an opponent by his own words. Give exact citations and references.
- 14) Make it clear to the audience if and why you do not accept a certain opponent or "witness" as a real specialist or expert qualified to deal with the problem, despite all titles and other merits.
- 15) Reveal to the audience the motivation, background connections, interests and real goals of some opponents who often are presented under some harmless or impressive disguise.
- 16) Avoid controversial issues or arguments that are understood by specialists only. This would only nourish the impression that the specialists disagree or that many important things are not clear or known.
- 17) If you want to gain time for finding the best answer, either smoke a pipe and look like Rodin's "Thinker" for a while, or better : explain, analyze, qualify and simplify the question or problem for the audience. This makes it easier for you to find the right answer. Explain whether it is a fundamental, impor-

tant problem or just a secondary detail. If you do not know the answer or do not want to give it, state clearly why. Explain why the problem is too complicated for a short answer, or why somebody else will be better qualified to answer, or that the exact informations are not at hand but where they can be found, say whether an answer exists or not. Never leave the impression that you got caught in a trap or that an important lack of knowledge exists when this is not the case. A possible way to react may sometimes be to show first that the questioner did not understand the problem, but then the question must be answered anyway.

Mass media (and politicians):

- 18) Some general rules for using mass media :
 - Study the characteristics of each medium and of its individual representatives (e.g. various newspapers). Experiences from one region, country or representative do not necessarily apply to another one.
 - Analyze the previous position of the medium to the problem, its public or audience, the intellectual level, style etc.
 - Contact the responsible editor or producer. How much space or time is available. Which feature, program, page or section is best suited ? What relation between text and pictures is desired ?
 - for books : select the proper editor, series, size and price category.
 - Do a good media and market research such as done by advertising agencies.
 - Get either an optimal efficiency or skip it.
- 19) In dealing with news people (or politicians) it is very important to build up good personal contacts to some carefully selected key people. Do not try a "crash-program" of convincing them, but slowly develop a basis of mutual understanding and confidence. Ask them for help and advice in public relation problems. Help them with facts, informations, consulting, news, frequent press releases or conferences, some exclusive reports or interviews. A newsman does not like to be coached or tutored, but he will welcome support and help if he gets it easily and if it is useful to him for avoiding errors or blunders.
- 20) If news media publish incorrect or biased informations, only strong, multiple and quick individual, collective and official reactions and complaints on several levels, from the responsible editor to the top management, will cause a correction.
- 21) If you get interviewed, take care of your image, keep neutral, matter-of-fact and independent. Do not get seduced to play the expert in fields other than your own. Of course you may offer your personal opinion also on other problems, but as an educated layman. Distinguish clearly between your official standpoint due to your function and your personal views as a specialist or a layman.
- 22) Do not over-simplify. If an essential element is missing in an information, it may become incorrect, miss the target or even become a bait for attacks.
- 23) Separate clearly established facts from fiction, assumptions, extrapolations, prognostics etc.
- 24) Do not get upset if even a fair and objective reporter asks you a critical or uncomfortable question. It is part of their professional technique and a way to show their independence. Do not use the same yardstick of quality for mass media as for special or scientific publications or events.
- 25) make sure that your statements are published correctly. Request to see the proofs before publication or reserve a right to reply. Submit your statements in written form, make your own tape record or get a copy of the reporter's tape.
- 26) Do not get caught unexpectedly. Give no statements which you had not time to think about. If the problem really matters to the reporter, he will give you time for preparation and tell you what he intends to do with the information.

If a reporter is not willing to do so, something is suspicious anyway.

- 27) When you contribute an article to the press, keep your language simple, explain indispensable special terms. Give it an attractive form, write a popular style, supply good illustrations. Make short paragraphs and type with double space and wide margin.
- 28) Radio programs are not very suitable for complicated topics. Their main features are news and short informations, short comments, or panel discussions.

Television :

- 29) These remarks apply to European television without commercially influenced or sponsored programs or shows, which operates on principles similar to those of newspapers or magazines.
- 30) The main information carrier in TV is the picture, it must move, not stand still. Many producers and directors prefer visual esthetics, action and gags to all other considerations such as facts, balanced information and content, truth etc. The spokenword is subordinate to the visual development and must be short and clear.
- 31) A TV program is momentarily impressive by its dynamics, some highlights and gags, but it has no long-lasting effects.
- 32) A program needs an "eye-catcher" at the very beginning or in the title which attracts the audience and prevents them from switching channels. Best carriers are regular, highly rated and well attended programs and features. They must be carefully selected according to topic, moderator, background, audience, daytime, duration, style, actuality, concurrent programs on other channels.
- 33) The larger the audience the shorter is the time available for a special topic. The duration varies from a few minutes for actualities over a preferred average of 10 - 15 minutes to the rare cases where up to an hour or more can be devoted to a single topic, but usually only in special documentary or science programs or panels on topics of high interest. Sufficient time for treating a subject in detail would only exist in educational programs, but these require long and tedious preparations and are planned years ahead.
- 34) Popular quiz programs, panel or interview series might offer a chance to introduce a problem or topic to a large audience and get additional coverage by other news media such as newspapers or magazines. Very close cooperation with producers and moderators and careful selection and preparation would be required.
- 35) If you get interviewed by TV, try not to stick to a manuscript. Inquire beforehand in what context the interview will be shown.
