

Public Image of Physics

G. Diemer
J. Volger

Physics, in its development and achievements, is a professional activity carried out by a rather closed "college" of highly skilled scientists. Physicists as a group arrive at a consensus about the relevance of their work by an efficient system of communication¹).

However, physics also has its impact on society as a whole (such as atomic energy and electronic systems resulting from nuclear physics and semiconductor physics respectively) and, on the other hand, society reacts on physics (e.g. via its spending and educational system). It is, therefore, desirable that an adequate communication system exists between the "college of physicists" and society as a whole, resulting in an adequate public image of physics, based on sufficient knowledge about the actual state of affairs.

We are of the opinion that at present this public image, particularly in Europe, is far from what it should be. This is harmful for the future well-being of European physics and for society as well. We consider it the responsibility of the EPS to contribute to the improvement of the communication between physicists and non-physicists. As Weisskopf²) states: "Popularisation of science should be one of the prime duties of a scientist and not a secondary one as it is now".

To get a better insight into the steps that could be taken in order to arrive at this goal, it seems useful to distinguish various groups in society such as :

- (1) the colleagues active in other branches of natural science, more or less related to physics
- (2) workers in disciplines that are strongly different from physics, such as social sciences, arts and medicine
- (3) managers and administrators (non-physicists) of corporations, institutions and firms, many of whom may employ physicists
- (4) politicians, government and military administrators
- (5) educationalists and teachers
- (6) editors and other professional

contributors to media for mass communication

- (7) prospective physicists (i.e. pupils and students)
- (8) adult and adolescent "laymen" (i.e. people not included in the more specific groups mentioned above).

The inadequacy of the image, resulting from a mismatch in communication, probably increases in the order the groups are mentioned. It will be mainly the job of the physicists themselves to improve this situation. The EPS could stimulate this — where possible in cooperation with other institutions that have similar goals, like UNESCO with respect to physics education — by activities such as :

- (1) Starting discussions in "Euro-physics News", at international meetings and seminars, on the subject of "Physics and Society", based on ideas as exposed by, e.g. Ziman¹), Weisskopf²), Volger³). Stimulation of similar discussions, on a national level, in the various physics national journals and national symposia.
- (2) Building up, via the national organizations of physicists, a system of physics correspondents that (a) are knowledgeable about the activities of their institutes, (b) are able to bring this knowledge into a form suitable for communication to groups of non-physicists.
- (3) Encouraging the news agencies in the various countries to have easy contact with these correspondents and to be staffed adequately. (Perhaps part of this manpower could be subsidised by national funds.)
- (4) Coordinating this flow of information centrally at an EPS office, which should also build up good contacts with international news agencies and mass media.
- (5) Promoting, in cases of government decisions about matters related to physics, public hearings where specialists in the field can provide adequate professional information. Especially in matters extending beyond particular national interests the EPS could recruit suitable candidates for such activities.

(6) Stimulating physics training so that it not only advances the physics student's awareness of social implications but also provides more practical exercise in conveying science information to groups of non-physicists at a variety of levels. This training should be guided by a team in which professional linguists (selected for their ability to communicate with professional physicists) would also be incorporated⁴).

(7) Stimulating physics training at the secondary school level, so that it is also a training in verbal and oral expression⁴).

(8) In general: motivating the professional physicists in Europe to help in doing this job by providing them with the appropriate information (this could be done by allocating a special part in a future EPS journal to this purpose).

We are strongly convinced that, in view of the wide-spread feelings of uncertainty, confusion, anxiety and aversion concerning the role of science in general and physics in particular with which we are confronted, both in student circles and in society as a whole, European physicists have the responsibility of devoting an adequate part of their energy and ability to diminish the mismatch and restore mutual understanding.

The Advisory Committee on "Physics and Society" should consider it part of its task to foster this responsibility and to find ways to make it operational.

- (1) J.M. Ziman, *Nature* 224, p. 318, 1969
J.M. Ziman, "Public Knowledge, an Essay Concerning the Social Dimension of Science", Cambridge University Press, London, 1968.
- (2) V.F. Weisskopf, "The Privilege of Being a Physicist", *Physics Today*, August 1969, p. 39.
- (3) J. Volger, "Physics in Social Perspective" lecture (in Dutch) given at a symposium of the Dutch Physical Society, 1969; *Nederlands Tijdschrift voor Natuurkunde* 36, p. 93-98, 1970.
- (4) These recommendations are in agreement with the conclusions arrived at in the IUPAP Seminar held at Eindhoven in 1968, see "The Education of Physicists for Work in Industry", edited by G. Diemer and J.H. Emeck, published by Centrex Publishing Company, Eindhoven, The Netherlands.

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