Science Education Team
The Long Road to Comprehensible Science

"Before each step forward that science and technology take, mankind must take three steps inward toward the perfection of its own ethics."

Now, 200 years after Novalis formulated this demand placed upon society, it has grown into a social problem. Due to the fleet pace that science has set, society can barely keep up with the process of dealing with progress' consequences and the discussion of the ethical or political repercussions associated with them.

Freedom through knowledge

The capability of coming to sound, individual political judgments presupposes not only fundamental knowledge of history or social sciences, but also a certain level of education in the natural sciences. The alternative would be a decision-making process in the form of an "expertocracy"–the rule of experts and those in the know–whereby the general public would, indeed, be deprived of the freedom to decide. For a truly democratic discussion to take place, as many men and women as possible must develop a capacity to independently assess arguments in order to obtain clear insights into the various opinions being proffered. But what is the most sensible way to reach this highly laudable goal?

The high art of facilitating scientific understanding

The most obvious way to go in this direction is to attempt to keep up with the latest scientific findings. With the help of specialized literature, scientific articles, seminars and similar sources of information, one might proceed along this most arduous path to reaching a judgment. Then, one quickly recognizes that even the process of maintaining an overview of all the fields of science–indispensable to going about evaluating them–has become exceedingly difficult due to the tremendous quantity of information available.

However, specialized information alone is insufficient; it must be combined with insights into scientists' fields of work and approach to life, with all their specific rules of behavior and value standards. As a result of the severance of information from the specific rationality of the

scientific world and its mode of thinking, this information is often distorted and, thus, erroneously interpreted. Scientific researchers themselves have long neglected to offer the general public a glimpse into their abstract world, and only in recent years have they been compelled by society to open up their proverbial ivory tower.

There is, indeed, an additional possibility for a layman being deluged with an immense amount of information to form his own opinion without having to gather and evaluate all the pertinent facts on his own. Instead of familiarizing himself with a scientific field and its related areas, an alternative is to get acquainted with scientific hierarchies and their indicators, and to trust the opinions put forth by them. In other words, one could thus come to an independent judgment on the current state of scientific research without being able to assess the scholarship itself. Examples of such indicators of quality are top research institutions, respected publications, and prestigious scientific societies. Needless to say, the internal mechanisms of hierarchy formation must function properly for this to work, which means that those who have attained preeminence must truly deserve these positions both as scholars and as moral authorities. Comprehension of the social mechanisms at work in the world of science could thus replace judgments on matters of content.

The attempt to bring both sides together

The Science Education Team has been formed to deal with precisely this need to translate and disseminate knowledge about modern sciences–microbiology, for instance–in a way that makes it accessible to laymen. Based on the principle of "learning by doing," the team provides an introduction to complex material and its scientific context within the framework of practical laboratory work. But this is not just a matter of imparting additional knowledge; rather, prime emphasis is also placed on providing a basic understanding of working methods, ways of thinking, and other external factors impacting research. By shedding light on the hierarchies mentioned above, this young team also hopes to help reestablish a sense of trust between science and the general public–trust which, in spite of all the prophesies of disaster, scientists certainly do deserve.

Only a discourse bringing together partners in an enlightened discussion can enable society to reach an enduring consensus. Especially in a highly sensitive field of natural science like genetic engineering, it is absolutely imperative that this consensus be achieved, and the Science Education Team hopes to contribute to bringing this about.