

INTRODUCTION OF TRACK F
“RELATIONSHIP BETWEEN SCIENCE AND SOCIETY”

Richard R. Ernst
Laboratorium für Physikalische Chemie, ETH Zürich
8093 Zürich, Switzerland

I am grateful for the opportunity to add a few personal comments on the subjects of the three sessions of Track F that are dealing with the *“Relationship between Science and Society”*. No relation is more relevant to science than the one towards society! - Science acts on behalf and, hopefully, to the benefit of the public. The rules are normally defined in a performance agreement, between those who pay and those who are supposed to perform.

Sessions F1 and F3 are devoted to two important gateways towards society: Politics and the Media. Session F1 aims at *“Engaging Policy Makers in Scientific and Technological Issues”*. Surely, science can contribute more than just expert’s knowledge. It can also remind politicians to apply more foresight, honesty, and even altruism. You know that, for example, reducing taxes on the account of education would certainly not lead to a better world. This has already been implied this morning by the lecture of Harold McGraw.

In Session F3, *“Critical Science and Technology Agendas for the Media”* are discussed, and the emphasis is on critical issues and not on those that produce merely flashy headlines and sexy stories.

Science has to contribute appropriate contents with long-term relevance.

Session F2, on the other hand, is different. It follows the model set by the *World Knowledge Dialogue* that will take place again in 2008 in Grand Montana, Switzerland. It discusses the “*Interface and Dialogue between Humanities and Natural Sciences*” that are prerequisites for science to play an influential role in society. We are speaking here of Universitas that has been divided artificially into numerous independent disciplines. In fact, we all know that they can not be separated with impunity. The disciplinary split is comparable to the fall of mankind, being expelled from paradise. The recompense for this fundamental sin of academia requires dialogue for trans-disciplinary mutual comprehension.

A prerequisite for mutual understanding is that each academic becomes personally and actively involved in additional fields, rather remote to his own. One cannot walk safely on a single specialist’s leg; one necessitates at least two legs for walking and three legs for a stable stand. You know what I mean by this metaphor: Experts are fine, but broadly minded spirits are better. It is experienced all too often that highly skilled specialists have great difficulties for finding a common language with other specialists, with politics, the media, and a general public.

A broad mind is also indispensable for solving the most urgent problems of today. All serious problems have trans-disciplinary

aspects, such as the handling of finite natural resources, the addressing of the global warming issue, bridging the gap between different cultures and between the destitute poor and the affluent rich.

Sometimes, we observe how brilliant students are discouraged from studies in natural sciences because of their extreme specialization and their apparently lost relevance to human commonality. After finishing high school, the students are still broadly minded and driven by idealistic expectations. Many of them become disillusioned by what they experience in the narrow channels of disciplinarity at Universities.

A more active discourse with humanities and societal issues might enhance the attraction of the natural sciences and better reveal their societal relevance. The ivory towers of science must be perforated when the basic societal mission of science is to be fulfilled.

We need more trans-disciplinary contacts, discourses, and activities, engaging students, the academic faculty, politicians, industrial managers, and the media. Today's rows of highly specialized institute seminars could be enlivened fruitfully by occasional inspiring lectures reflecting on academic and public responsibility. Weekend seminars on societal questions offer good opportunities for bringing together members of different faculties and participants from the public. Even in highly specialized scientific conferences, at least one lecture should be incorporated that helps widening their scope towards public relevance.

Society has charged universities and academic institutions with three basic obligations; all of them are indispensable for a beneficial future of mankind: The first and most important one is teaching in view of educating a future generation of responsible citizens and leaders. Let us remember that nearly all future opinion leaders, politicians, CEOs, and journalists are going through universities where they can be inspired by beneficial and lasting concepts and by the activities of immaculate role models during their most critical years of personality formation. This gives academic teachers great responsibility and long-term influence. - In addition, we should not forget the obligation of Universities to offer ample opportunities for Life-Long-Learning by all interested citizens.

The second obligation is research, serving society in view of solving the great problems of mankind, and for stimulating industry. For me, research is first of all an essential part of teaching. Researching means learning and disseminating novel insights; and, secondly, researching is by far the best way of learning by doing.

The third obligation, often forgotten, is finding beneficial and ethical avenues towards a better future, leaving behind a world governed by short-sighted selfishness, monetary cravings, and irresponsible destruction of future living grounds. We need to recognize that the self-correcting feedback loops of free market economy can not undo irreversible damages and losses. Often, the gained profits are dissipated long before the adverse effects become apparent.

A better future demands a great deal of responsibility from all actors, either based on personal self-restraint or by international law-enforcement. The academic community can act in this regard as a source of foresight and inspiration for politics and economy, especially by encouraging ethically motivated self-restraint by everybody. Perhaps, the members of academia are the only ones who can afford to say what they think. Politicians and business leaders have much self-interest to articulate themselves more cautiously. Academics are supposed to defend unrestricted honesty and to offer critical and constructive comments on today's challenges. In fact, they are engaged specifically for this purpose as they carry normally no operational function outside of the universities.

Hopefully, the trans-disciplinary dialogue and the contacts to policy makers and media helps us to find pathways towards a more ethical, compassionate, sustainable, and responsible life style. - In conclusion, let us remember, in spite of all our global problems, the wise words of the philosopher Karl Popper: "*Optimism is our duty. We are all jointly responsible for what will come.*" (Berlin 1993). This could be a proper motto for the Track F sessions, or even for the STS Forum altogether.