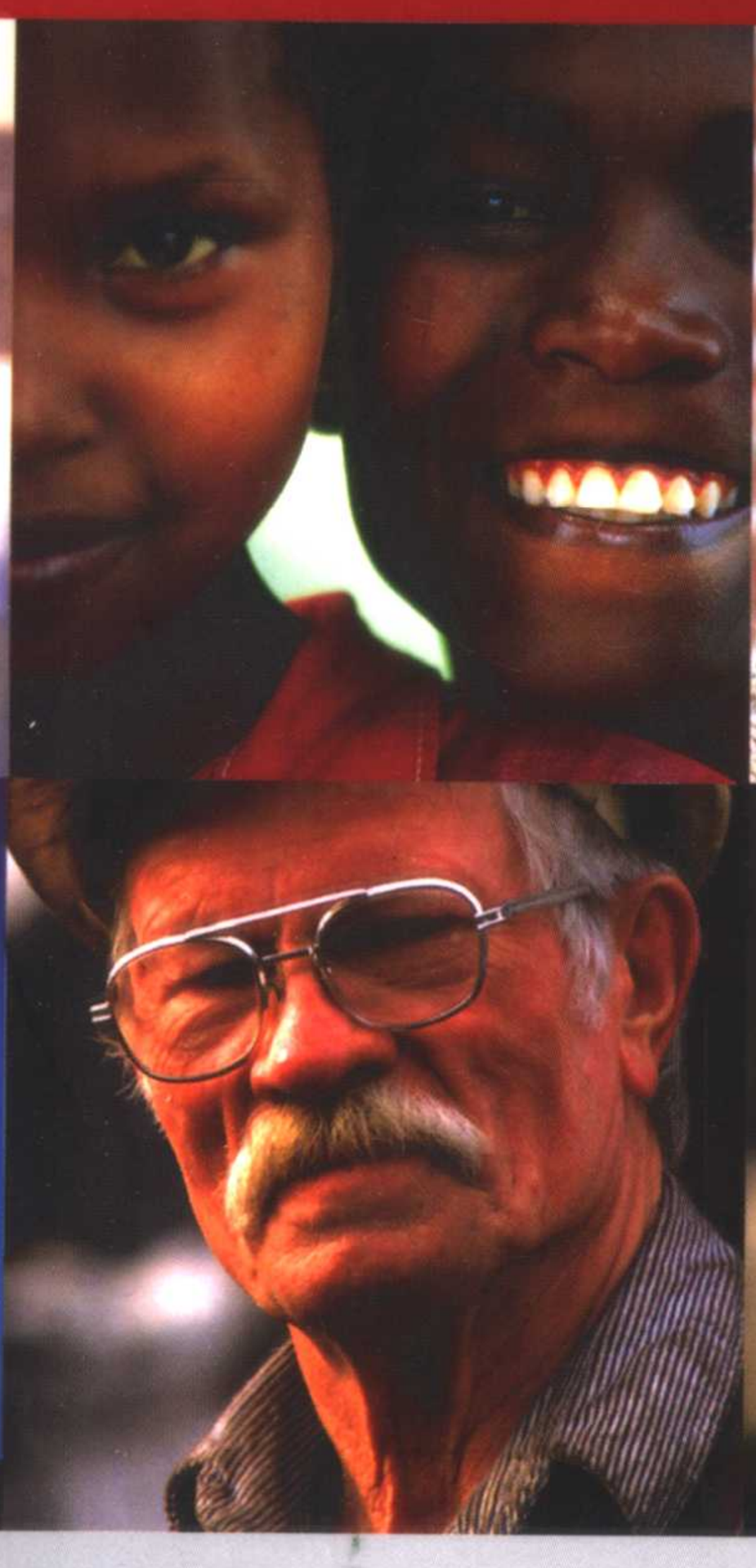
AT THE HUMAN SCALE

INTERNATIONAL PRACTICES IN SCIENCE COMMUNICATION

Edited by Cheng Donghong, Jenni Metcalfe, Bernard Schiele
In collaboration with Michel Claessens, Toss Gascoigne, Shi Shunke



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CHENG Donghong, Jenni METCALFE and Bernard SCHIELE

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And we thank many other people, including the authors and our editorial colleagues, for contributing to the success of the symposium and the subsequent production of the book.

Brussels
February, 2006

Foreword

ZHOU Guangzhao

The rapid development of science and technology (S&T) and its penetration into all aspects of human production and life have made it a powerful force in the economic and social development of humankind. S&T development and application require not only exploration and innovation on the part of scientific workers, but also the understanding, support and involvement of the public.

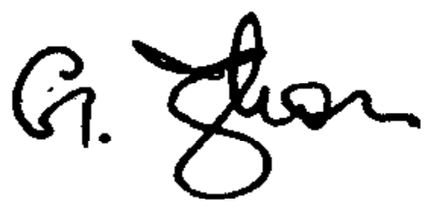
Therefore, S&T communication is becoming an important domain and is drawing worldwide attention. Effective communication plays a significant role in strengthening public scientific awareness and encouraging people to involve themselves in decision-making about S&T. It also helps them cope with modern social life in a better and more scientific way. At a time when knowledge is expanding and technology is advancing rapidly, S&T communication should have rational means, ways, targets and content, and should be target-oriented.

Since its establishment in 1989, the Public Communication of Science and Technology (PCST) Network has pushed forward the development of S&T communication, and has held eight international conferences on different themes. In June 2005, the PCST Network and the China Association for Science and Technology (CAST) jointly sponsored and organized the Beijing PCST Working Symposium to explore strategic issues in S&T communication. The Beijing Symposium was the first of its kind to be organized by the PCST Network, and the first meeting of the PCST Network held in Asia.

The symposium drew a large number of S&T communication workers from around the world, and gave them an opportunity to

discuss case studies from their work. This book is the fruit of the symposium. The papers collected here show how scientists participate in the communication process, and highlight the effective work of S&T communication workers in urban and rural communities and with young children. The case studies show how practical problems can be explored and solved, and scientists and communicators can learn much from them. I believe this publication will advance S&T communication, broaden exchanges of wisdom, and spread useful experience. These achievements are of great significance, and I hope to see more of them in the future.

CAST has always committed itself to promoting S&T communication, popularizing scientific knowledge and enhancing the quality of life of the Chinese population, and has regarded these tasks as its own main social responsibility. CAST will continue to take the initiative to promote exchanges and cooperation between the world science popularization organizations and S&T communicators, to reach our shared goals of common benefit, common advancement and common prosperity.



President

China Association for Science and Technology

Foreword

José Manuel SILVA RODRIGUEZ

I am pleased to sign this foreword and would like to thank the organisers of the Beijing PCST symposium for setting up this important event as it helped to address a crucial issue: to foster a professional approach to communicating science and technology. This issue is given a high priority by the European Commission in the framework of the European Union's research programmes and this is the reason why we supported the participation of European scientists in the Beijing symposium.

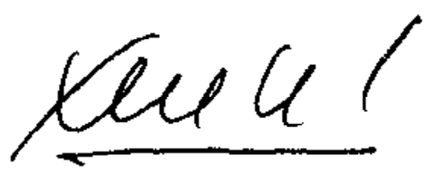
Communicating and engaging with the public about research is a responsibility, a priority and even an obligation. Science that is never communicated, or communicated poorly, remains unrecognised and unnoticed. It might even be that people become suspicious of scientific work that is not properly explained and justified. Yet research and science are the driving forces towards achieving progress in our society. Many aspects of high-tech research (for example, innovations in the health area, food safety, environment or energy resources) might seem redundant at first glance, but at the end of the day they affect and improve the daily life of every European citizen. Therefore, communicating science is of vital importance.

However, communicating research is not always easy. It takes education, patience and hard work. Researchers have an obligation to provide information about what they are doing, but also to listen, to understand the social context within which they operate — what people worry about, what they want or need from science. Not always easy, I know, but necessary, to win legitimacy and faith in our work. It is also a simple question of common sense: there are so many interesting developments going on of which the public should be aware and informed.

According to our latest Eurobarometer public opinion survey, only 10% of Europeans feel very well informed about scientific and technological issues, and a survey carried out in 2002 showed that 86% of Europeans believe scientists ought to communicate their scientific knowledge better.

The European Commission wants to promote more and better communication on science and research. In particular, we encourage the participants in EU-funded projects to pay close attention to the 'public communication' dimension of their work. We provide support and practical assistance to project coordinators and team leaders to inform and publicise the objectives and results of their work, the benefits to EU citizens in general, the value of cooperation on a Europe-wide scale, and the contributions made to European knowledge and scientific excellence. These aspects will certainly gain in momentum in the forthcoming Seventh Framework Programme 2007–2013. Communication is key in a knowledge-based society.

I invite you to make use of the messages and good practices presented at the conference and in this book and to share your experiences, exchange best communication practice and link up with others who share your commitment to communicating science and technology.



Director-General for research

European Commission

Preface

CHENG Donghong, Jenni METCALFE
and Bernard SCHIELE

The Beijing PCST Working Symposium was a landmark event for the Public Communication of Science and Technology (PCST) Network. It was the first official meeting organized by the network in the Asian region. It produced the network's first substantial publication since the Montreal Conference in 1994. And it marked a new level of understanding of science communication challenges and the approaches being adopted internationally to meet them.

At the Human Scale is the practical output. This book is a sample of the ideas presented to the meeting, selected by the 150 delegates on the basis of their relevance, their transferability and the way they caught the imagination of people in the audience.

The papers deal with a wide range of issues from countries all over the world: from host country China to Cuba, from the UK to Brazil, from Australia to Denmark, and from the US and Canada to Thailand. Authors are invited to address one of the three broad themes of the meeting—communicating with urban and rural communities, communicating with youth, and engaging scientists.

Five new realities emerge. They are not stated in one coherent presentation at the symposium, but an analysis of the papers illustrates that enlightened science communicators across the world are gaining a new appreciation of the best strategies to meet the diverse challenges posed by PCST.

First, science communicators are learning to deal with a public that is increasingly sceptical of the benefits of science. No longer is this public willing to accept without question that science is always good.

The public wants to ask its own questions and to be satisfied that its concerns are being met.

Second, science communicators have learned to accept that the knowledge gap is widening and will continue to widen. No education programmes or events aimed at increasing the understanding of science are able to cope with the tide of new discoveries and new information. This realization needs to be factored in to PCST activities.

Third, they understand that the most productive actions are highly targeted to address local issues or discrete problems, and that national resources to carry out these actions need to be increased rather than simply maintained.

Fourth, science communicators appreciate the long-term nature of PCST activities. It takes time for the public to recognize an emerging issue, and then to consider and respond. Rushed processes are more likely to generate first anxiety, and then hostility.

Finally, communicators know they have to improve their processes of evaluation, both to identify the most effective activities and to gather evidence to persuade scientists, research organizations and governments that they should devote more resources to communication. Evidence-based policy makers are not likely to allocate scarce resources as an act of faith.

These five new realities will drive science communication as it reaches a new level of maturity. This book will help that process, aided by the wide diversity of cultures from which case studies and examples have been drawn. The breadth of the contributions illustrates the point that all countries have something to learn from the contents of this book, no matter the level of their sophistication.

Attendance at the symposium was by invitation, and competitive. The meeting attracted skilled, enthusiastic and knowledgeable practitioners and theorists in science communication. The format of the symposium placed more emphasis on discussion than on the formal presentation of papers: five-minute presentations were

followed by hour-long debates in small groups. Authors were invited to modify their words after the meeting, and many took this opportunity to incorporate ideas raised in the discussion sessions in revised versions of their papers. This has strengthened the book.

The editors are pleased to present this international snapshot of science communication. The book contains many wise ideas that practitioners may wish to incorporate into their own cultures. It also contains the roots of a new appreciation of the subtlety and complexity of the issues we all face; these, too, will have a lasting impact on the society in which we live.

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Part 1

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Bernard SCHIELE

In a nutshell

This chapter provides an analytical view of the public communication of science and technology (PCST). It examines the history of such communication and the relationships that science has with the general public. Four key conclusions emerge from this analysis, and from the presentations and discussions at the symposium.

- **Trust**—The public's doubt about science, especially controversial science, needs to be recognized and taken into account by scientists, research organizations and government.
- **Knowledge gap**—Research is expanding into new fields so rapidly that no-one can keep up. The widening gap in knowledge between scientists and the general public needs to be accepted as a constant reality of the environment within which science communication will always work.
- **Local actions**—Science communication needs to respond to clearly identified local issues, by fostering local actions focused on concrete situations.
- **Long-term actions**—Science communication is a long-term process that needs to take into account the time taken to develop social relationships and shared meanings.

Introduction

It's common to lament the chronic lack of science and technology (S&T) knowledge exhibited by a major portion of the general public.