

# ICSTJ - TOKYO 2001

## International Conference of Science & Technology Journalists (Oct. 23-26) "Seeking Trends in Science & Technology Journalism for the 21st Century"

<http://ppd.jsf.or.jp/icstj/>  
<icstj@jsf.or.jp>

### Sponsored by

Japanese Association of Science and Technology Journalists (JASTJ),  
Japanese Science and Technology Corp./  
Dept. of Public Understanding of Science and Technology (JST)

### Special lecture / Key note address title:

**Civil society and knowledge  
Growing your own...  
How lay people turn into experts**

By Wolfgang C. Goede  
Science News Editor  
P.M. magazine Knowledge matters.  
Munich / Germany

<http://www.pm-magazin.de>  
<goede.wolfgang@muc.guj.de>

The European P.M. family

- has a monthly circulation of over 2 million copies
- is easily understood by a wide range of people
- is not just a conglomerate of interesting facts, it stimulates curiosity
- makes lay people scientifically literate

I would like to thank my colleague and P.M. author P.J. Blumenthal for his help in formulating the title and for his review of the manuscript.

## Abstract

We are standing on a goldmine - the knowledge and expertise of billions of people. So far it has been tapped only socially and politically as the fast growing number of self-help and non-governmental organizations (NGOs) demonstrates. Worldwide more than one million NGOs are operating, in Germany alone 70 000 organizations with three million members. Political parties by contrast have only 1,5 million members. These new groups constitute the civil society and have become a strong pillar of our democracies. But "lay knowledgeability" (Brian Wynne, University of Lancaster) must also be utilized for the scientific process if we want to meet the challenges of this century: energy, nutrition, climate, above all peace. We science journalists must not only present the results of research and its applications in comprehensive and popular ways, we also must invent new ways of communication and interaction between scientists and the public. A new partnership of the stakeholders is needed, "a new social contract" (Michael Gibbons, Assoc. of Commonwealth Universities) which cultivates open democratic dialogues. Civic scientists and civic journalists can create civic engagement which will produce the social capital to settle our major problems.

---

"Mina Sama, Ohayo Gozaimasu" Good morning, ladies and gentlemen! Of course I won't be telling you how to plant and harvest your own marijuana at home, as the phrase "growing your own" might suggest. It has been invented by autonomous cannabis users and has gone around the world. But I will be telling you how this slogan also applies to knowledge and how societies can get naturally high, very creative, productive and robust, when they not only rely on the know-how of the experts but tap into new resources: the knowledge, wisdom, experience and common sense of lay people. We are all concerned about the technological revolution, but it goes hand in hand with a largely unnoticed people's revolution which will be changing our lives as much as electronics, biotech and robots have.

Let me shed some light on this paradigm shift. I will start with a short history of science communication, then define civil society and how it changes knowledge production and communication flow. At the conclusion I shall be showing how "growing our own knowledge" is being put into practice worldwide at the beginning of the new century. You'll notice that my research and examples center very much on Europe and especially England which can be regarded as the global trendsetter in this field.

For a million years our ancestors lived in tribes in the earth's forests and along the plains. Tribal leaders were often witch doctors or shamans, according to the ethnologists, people who cured magically and influenced destiny. Their special type of knowledge which was of course secret kept them in power and elevated them to an almost holy position. With the onset of civilization 10 000 years ago the generation and application of knowledge began to flourish. Rules and laws were discovered which paved the way to breathtaking technical progress. Access to knowledge remained the privilege of small elites however. Knowledge has always been interwoven with politics and strictly controlled by the powerful because scientifically sound ideas had the potential to be explosive.

Remember how Galileo in 1632 had to concede to the Pope and accede to the church dogma that the earth and not the sun was at the center of the universe? That was a period when the language of scientists was highly complex and reminiscent of the magic formulas of the shamans. Of course, the scientific community wrote and spoke Latin so no lay person could understand it.

Then things began to move. In 1667 London's Royal Society published a guide to writing scientific papers: directly and precisely, no bombastic or foggy sentences, using instead the language of farmers, craftsmen and tradesmen instead of the jargon of scholars. This influenced Europe and also eventually my own country. 20 years later the first lecture was held in plain

German at the University of Leipzig - but the message still hasn't reached everyone. Recently I had an appointment with a doctor and, boy, did he confuse me. I didn't understand a word he was saying. It was as if he had been speaking Japanese! Fortunately, my dentist does a much better job of explaining what he is doing in my mouth. I can relax and even painful treatments become bearable since I know what he is doing.

He sticks to the teaching of Alexander von Humboldt who claimed that "to know and to recognize is a general human right". The German natural scientist became famous because of an extensive tour he made through South America at the beginning of the 19th century. In 1827 Humboldt presented his findings in Berlin in addition to an absolutely clear and fascinating rundown of almost the entire knowledge of mankind at that time. His audience included the king as well as masons and maids. If there were a gallery of science popularizers Humboldt would deserve a prominent position.

Then came the Industrial Revolution, It catapulted people into a new world with a flood of technological innovations, ever increasing speed and profound cultural changes. Trains, automobiles, airplanes dreams of mobility came true and lured people into becoming frenetic proponents of progress. For more than a century nobody dared to touch science's truth monopoly, that is, until 1945 when two atomic detonations here in Japan shocked the world. In the aftermath people began realizing that indefinite growth was not possible. Growing poverty, misery and hunger had split the world into a developed and developing world. The realization that natural resources and energy supplies would only last for another 100 years became inescapable and that the environment and the climate were deteriorating. Even nutrition is up for grabs. Mad cow disease BSE worries Europeans and nobody knows how it will affect human life and other regions and this part of the world. The British in particular are upset about their politicians blatantly lying to them when they were claiming just a couple of years ago: Don't worry, no danger for humans and had their children publicly eat beef burgers on television!

What were the reactions? On the political level the Green Party, activist movements like Robin Wood and Green Peace and most recently the globalization adversaries emerged; the experts at the universities had to abandon their ivory towers and present their research at the market place in order to rebuild public confidence. In Germany this is called PUSH, Public Understanding of Science and Humanities and has led to science festivals in major cities. Last August in Berlin research institutes and museums opened until 2 in the morning on a Saturday night. Last but not least as a result of this distrust the news media discovered science, finding a new huge platform in newspapers, magazines, radio, television and in the internet.

I work at a monthly publication, "P.M. magazine knowledge matters", a magazine with a circulation of almost 500 000 copies. Here you see the first issue about the dinosaurs and their heritage in humans almost 20 years before Hollywood cranked out "Jurassic Park": P.M. was founded in 1978 and became an immediate success because it presented science and knowledge for lay people without directly saying that it was dealing with science, a fact that might have driven away a lot of potential readers who were still digesting traumatic school experiences with physics, chemistry etc. Under various names P.M. has been appearing in major European countries, even South America. Worldwide it sells 2,5 million copies a month you will find the various national editions in the exhibition section of this conference.

In contrast to many other publications and formats which focus on specialized and highly scientific fields or take a critical stance on research and technology, P.M. selects the most intriguing and exciting pieces from the flood of scientific news and breakthroughs and packages them into a story in which human beings play a key role. Complying with Humboldt's tradition we explain thoroughly and very descriptively the facts at the same time sparing dry details and formulas. We are at the entrance level of a process which turns people into scientifically literate citizens.

P.M. compensates for what the public school system fails to achieve: to get people interested and

maybe a bit excited about an intellectual process called science. Once their minds are ignited, people look for more information at their own initiative. They can assess and judge the pros and cons of a particular research project and its technological applications. Finally these knowledge seekers might even get involved as active and concerned citizens in order to enhance, divert or even stop certain scientific developments. Our approach matches an observation made by the great French mathematician Jules Henri Poincaré: "Give people facts and you feed their minds for an hour, but awaken their curiosity and they feed their own minds for a lifetime." In other words: Don't look at people as if they were bottles which just need to be filled view them instead as candles and illuminate them!

Here you see the cover of the current October edition of P.M. The cover story presents new evidence on an ancient civilization which may have extended from the Antarctic to Egypt 12 000 years ago. In the course of 130 pages you find stories about new intelligent automobiles which automatically avoid accidents; you see how the brain works and how its functions are transferred to robots; you can take a ride in a new generation of safer and much faster airplanes just below the sound speed saving two hours on the flight from Europe to the United States; you get information about how the California tourist hot spot, Yosemite Park, will be returned to its original state; and you find out that there would be no life on earth without the moon.

I'm responsible for P.M's science news section. If you have eight pages available how do you cut through the avalanche of science news available and concentrate on what the magazine stands for?

The first two pages explain a new technique which allows the space shuttle to produce its own fuel a fact that will almost make the enormously costly tickets for space tourism affordable ; page three shows a new radar system which enables radar experts to look far beyond the horizon; page four introduces a robot which creates itself; page five demonstrates a new technology in tunnel construction which replaces tunnels with an underwater bridge; and this mobile washing machine, a sort of laptop, is made in Japan and has been researched by our Tokyo correspondent Edwin Karmiol who provides us with a stream of highly interesting hightech projects (!); page six highlights a DNA-technique which can be compared to a fingerprint and tells you everything about the origin of the meat you eat as well as other foods; page seven focuses on genetic engineering and how to get goats to produce proteins in their milk which can be assembled into threads as strong as steel; the last page features a piece about the capacity of plants to absorb poisons and even radioactive materials; by the way I didn't find a bed like this in my Tokyo hotel it's earthquake proof and made for seismic risk areas.

The message of these articles: Visions can become reality without having to remain foggy. On the contrary, they illuminate what I call the "black box" the hidden and often never revealed essential of a technology or scientific question. "Your writing must be clear and realistic enough for the reader to draw conclusions about how the system works and be able to visualize it", I keep telling my apprentices - or: KISS me, Keep It Simple and Stupid for me and to underline this point I have made the drawings which express the key statements of this lecture!

While entertaining we both infuse and diffuse valuable new knowledge, the raw material of the 21st century. Until our times, access to knowledge was the privilege of an elite, as I pointed out, and there was little transparency and public accountability. Magazines like P.M. help to democratize knowledge, to disseminate it so that everybody can participate and get on top of the information flow. With this type of knowledge empowerment we contribute to building the civil society in which citizens gain access to major developments. They can decide for themselves whether these developments suit them or not, make their voice heard and pursue an active role in public life. During the last years we've been exposed to an inflationary use of civil society. Definitions are compared with a pudding which has been nailed to the wall. So let's look into it, find out the facts about how civil society relates to science.

The pillars of modern society are government, political parties, the business community, scientific

institutions, labor unions and churches. The main pillar, though consists of the citizens who have the vote and decide who gets elected, who shall represent his or her views and concerns. Citizens pay taxes and the salary of elected politicians as well as civil servants. Moreover, it is they who largely foot the bill for the scientific community. Furthermore, citizens are also clients, consumers, users and stockholders. They buy the products which scientists have researched with tax money and which are put on the market by companies which citizens partially own. Whereas in the 17th century king Louis 14th proclaimed "I am the state," citizens in the 21st century legitimately and rightfully insist: "We are the state."

In other words, throughout history societies were constructed like Egyptian pyramids, steep and with a few leaders on top who made decisions for the people below. The advent of democratic constitutions have leveled the pyramids and hierarchies and have introduced participation by the lay people. Nevertheless, there remains a lot of discontent and more and more voters and consumers, at least in Europe, feel excluded from power.

Civil society means that not institutions, but individuals constitute the center of society. They are the sun around which the institutions revolve - like in my diagram, dubbed the "Galileo-Model". At the center you find associations of all kinds like Lions Clubs and parents-teachers organizations, non-governmental and citizen action groups, self-help groups like Alcoholics Anonymous. They organize on local and regional levels, define their interests and form bodies to express their concerns, communicate with one another, build networks and solve their problems in conjunction with social institutions and the professionals attached to them.

You may notice that this is a profound change compared to the pyramid. Paternalistic communication from the top down is enriched and supplemented by bottom-up flows which provide urgently needed feedback to decision makers. Of course, this creates much more conflict - but isn't this what democracy is all about and isn't that its strength? "You have to allow controversy before confidence can develop", says Sir Robert May, scientific advisor of the British Prime Minister. Struggles over contrary positions integrate society, pull in the dissidents as well as the indifferent people, break their isolation, give them a voice and build consensus among conflicting groups.

Or to put it in the words of the political philosophers and godfathers of democracy: "Informal networks of citizens help to balance central authorities as a kind of counterweight", said Charles Louis Montesquieu; "Citizen associations protect the individual from the state", claimed John Locke; and Alexis de Tocqueville who visited the United States in 1830 and admired the grassroots involvement of the Americans, called these local cells "schools of democracy", training camps which teach democratic behaviour, tolerance as well as the skills for settling disputes, compromising and get along with each other.

To summarize: Civil society forms the fabric, the web of society and produces its social capital which is equal to or perhaps more important than the financial and natural resources of a nation.

A good example of how this works can be observed here, in Japan, according to Robert D. Putnam, Professor of international affairs at Harvard University. He became famous for his book "Bowling alone" which deals with America's declining social capital. In his new book "Society and Common Ground" (a translation of the German title published by Bertelsmann Foundation) he compares the social capital in the leading industrial nations. Whereas citizens in many countries drop out of civic organizations and refrain from civic engagement, the Japanese are more and more civic-minded, engage in public cleanup parties, patrol their neighborhoods voluntarily and donate considerable amounts of money to non-profit organizations.

Putnam's explanation: Japanese trust their political institutions and identify with them, a fact which leads to a high commitment to their communities and their country. That all has contributed to making Japan the second largest economy with the highest income per capita of the world. Are you involved in a big bowling party? Perhaps Japanese participants will want to comment on this

and on other ways of interaction in your society during the discussion later. In Europe by contrast public trust in institutions is pretty much declining.

Last March I attended an international seminar sponsored by the British Council, a government organization dedicated to improving relationships between science and society. The title: "Towards a democratic science". One of the key speakers was Brian Wynne, Professor of Science Studies at the University of Lancaster and the inventor of the deficit and democratic model of communication. He argued that "the communication from science to the public has been a one-way process in which scientists assumed that they could find answers say to the question of consequences of nuclear power or GM (genetically modified) agriculture, and then merely educate the public about the scientific determination of the issue".

This in fact has provoked the crisis of lack of public confidence in science. He complains that scientists either don't know how to communicate or refuse to communicate their work, although many of them are funded by the public and accountable to it. Many scientists seem to take the attitude: Love it or leave it if you're not bright enough! Wynne's solution is a two-way process or democratic model in which scientists actively listen to the public and vice versa.

"Recent experiments in public participation have falsified the idea that the public cannot be trusted to respond wisely", states Wynne. He refers to a citizens' jury conducted with poor and illiterate Indian farmers on the issue of GM crops in the state of Bangalore. Nevertheless, the jury demonstrated a sophisticated knowledge of the way new types of crops can impact on their lives. They saw interlinkages that scientists often miss and proposed practical conditions for improving food security for their people.

Now listen to this beautiful example of indigenous wisdom and cleverness: Farmers in Kenya invented the "push pull method" to get rid of harmful moths. Around their corn fields they cultivate a belt of a reed type grass which attracts or pulls the insects; on the field itself they grow a special type of weed from South America which drives or pushes the moths away to the periphery. The result: a fivefold increase of corn without applying chemicals or GM techniques!

The conclusion: Contrary to existing stereotypes, the public has something important to contribute. This is both political, in terms of enhancing democratic legitimacy, and also intellectual, in terms of providing important intellectual input to the scientific process. Wynne asks: Whose knowledge is counted as valid abstract genetic science accompanied by a strong prescriptive moral which was not respectful of the life-worlds it proposed to overthrow? or the life-world practical expertises? Knowledge is clearly more than one-dimensional.

Wynne's investigations and assessment carry more weight insofar as the British House of Lords Science and Technology Select Committee in March 2000 made clear that scientists must learn about public concerns and values and also learn to listen to the public. Even the British government has recognized that "the public's opinion has to be brought into the government's process of deciding which areas of science should be funded".

At the British Council seminar Wynne stressed the importance of what he called non-expert knowledge or "lay knowledgeability" which does not correspond to official research. He quoted people saying to scientists: "It's not that I don't believe you, but what you say isn't true in my particular circumstance. Wynne: "People are not anti-science, they are pro-better science!" His colleague, Ulrike Felt from Vienna University, supports Wynne's view and his open call for "lay experts". Bruno Latour from the Paris Ecole des Mines is a step ahead. He raises the question whether the representative democracy needs to be supplemented by a technical democracy and he proposes to call lay experts "co-researchers". The battle cry of the Boston Tea Party "No Taxation without Representation" led the American colonists to seek freedom and independence from the British crown. Will citizen groups stop an artificial human being with "No innovation without representation"?

The outlined paradigm shift is putting science in a tight spot and shaking up its authority and credibility. "There is no objective science", argues my German colleague Ulrich Schnabel from the liberal weekly "Zeit". Researchers and big business are joining together to do the marketing of bio-patents and independent experts in this field have become "as rare as unselfish insurance salesmen", Schnabel writes. In the same publication the German social democrat Michael Müller attacks the "scientific industrial complex", a small elite of stock exchange experts, attorneys, scientists and start-up firms that want to maximize their profits.

"New concepts of exchange between producers and consumers of knowledge have to be found", demands Hazel Rosenstrauch, editor with the prestigious Berlin-Brandenburg Academy of Science. It's not just a matter of scientific literacy, the whole relationship of science and society has to be newly defined. Science journalism only succeeds if it creates intellectual exchange between the actors and the audience, maybe even turns the audience into actors. These novel forms of dialogue ([#29](#)) and roles are the "heartbeat of civil society", observes political scientist Ansgar Klein.

Let me close my second part with Michael Gibbons, Secretary General of the Association of Commonwealth Universities. He is proposing a new social contract which ensures that scientific knowledge be "socially robust", and that its production be seen by society to be both transparent and participative. The traditional autocratic science in which problems are set and solved in ivory towers by the academic community he calls "mode 1". "Mode 2" works by contrast transdisciplinarily with a wide set of practitioners on problems defined in localized contexts. Mode 2 addresses the needs of society more thoroughly. It is more democratic, permeable. It provides lifelong learning, breaks down hierarchies, shares resources and reinforces common sense.

On the basis of Gibbons mode 2, the 30 participants of the British Council seminar endorsed the creation of a "democratic science collective" with the objective of encouraging dialogue between all groups of society. Accordingly, if I may add this, a "democratic political collective" might prevent the clash of civilizations which the September 11 tragedy and its consequences could trigger.

If we agree that this world needs an updated communication model to meet the challenges and risks of the new millennium, then what can be done what can you possibly do in your daily life and work to put it into practice?

If you are a science journalist, start with local networking, reach out to your colleagues in various media and shape your agenda. No matter whether you are connected to the print or electronic media, science sells well these days and there is a great demand for innovative approaches and formats to reach audiences. If you want to get involved on an international level you will find plenty of contacts here at the conference for example the Presidents of the International Science Writers Association (ISWA) and the European Union of Science Journalists' Association (EUSJA), moreover representatives from South American and Asian organizations.

Let me point out two activities: During this conference we will talk about how to proceed to establish a World Federation of Science Writers (WFSJ) which is supposed to become active worldwide in promoting a new culture of science journalism. At the 2nd World Conference of Science Journalists (WCSJ) 1999 in Budapest, 146 delegates from 29 countries passed the "Budapest Declaration" which demanded that science reporting achieve both, clarify the social and political context of research and address the daily life of ordinary people. Furthermore, science journalists from all over the world have formed under the auspices of the World Federation of Science (WFS) a Permanent Monitoring Committee (PMP) on science and journalism and will set up a workshop to train journalists in developing countries in science journalism. .

If you are a scientist or researcher you might like to get involved in Public Understanding of Science (PUS), also dubbed Public Understanding of Science & Humanities (PUSH) or Public

Understanding of Science & Technology (PUST). That can be a lot of fun for both, actor and audience. An English physics professor has specialized in what he calls "Science in the Pub". He presents quiz shows and asks the pub visitors questions about how beers and liquors are produced and the chemistry behind it. Meet the people where they are and deliver your science through various events dealing with food, gardening, cooking, sport...! Professor John Durant, Director of the Science Museum in London and a worldwide acknowledged expert on PUSH, can give you ideas.

If you are a plain citizen or a lay expert, get organized to feed your lay knowledge into the scientific pipeline. Join the civil society groups and set up your strategy. UNESCO has registered almost 30 000 organizations, unofficially more than a million are in operation. The Danish Board of Technology has invented so-called consensus conferences and citizens' juries. A randomly selected group of people designed to represent the public is impaneled to study a local and regional public policy issue. They invite experts, ask questions as to the risks and benefits of a proposed project or technique and cross-examine them. After the lay panel has reached a consensus, a press conference is held which has a significant impact on the opinion of the public and the policy makers.

Another approach: The US-American Loka Institute educates lay people in community-based research. This way, they can carry on their own investigations when confronted with traffic problems or environmental hazards and convince the authorities by means of facts in order to get problems solved. Last July Loka's annual conference was convened under the motto: "Re-Shaping the Culture of Research". The conclusion stands fully in line with the findings of Brian Wynne: "Community-based research is about altering the idea that only formalized or institutionalized scientific knowledge is valid." The shift in the research process leads us to understand "that community-based knowledge brought together with science creates well-balanced information" and a new partnership of stakeholders.

Let me finish with six theses:

- Only when we constantly reinvent ourselves civically and democratically can we meet the scientific and socio-economic challenges of this century.
- Knowledge in our era belongs to everyone. We need "research of the people, by the people, for the people" to paraphrase US president Abraham Lincoln's Gettysburg Address.
- "Expertocracy" is out "radical knowledge creation thrives in a society where authority can be challenged" (Charles Leadbeater, British science author).
- Civil society calls for civic science (scientists who go public), civic journalism (journalists who reach the people), civic engagement (active citizens who care and do more than merely go to the polls on election day).
- We shall have reached this state when "access to science is as natural as access to art, literature, music" (John Durant) and when "science news is as feverishly discussed as the latest soccer and football scores" (Edelgard Bulmahn, Germany's Federal Minister of Science and Technology).
- According to the US computer expert Bill Joy, the GNR technologies (gene, nano, robotics) can cure our earth but they also can turn out to be more destructive than all weapons on earth!
- Heaven or hell - Aren't we journalists supposed to be the gatekeepers?

Thank you very much "Domo Arigato Gozaimashita!"

---

Wolfgang C. Goede, born in 1951, has a masters degree in political science and communication. He is a graduate of the Bosch Foundation which in the 1980's launched a highly recognized training program for science journalists. Goede has been working as a science writer for the past 17 years. He is science news editor at P.M. magazine - Knowledge matters, Germany's leading popular science publication. As a science communicator he contributes regularly to the PCST conferences. He is a member of the Forum Community Organizing (Foco) which engages in the implementation of civil society concepts (<http://www.casa-luz.de/co>).

---

### References, sources, literature

Aktive Bürgerschaft e.V.  
(active citizenship)  
<http://www.aktive-buergerschaft.de>

British Council  
"Science and Society: towards a democratic science"  
A report of the the British Council seminar held at Moonfleet Manor, Fleet, Dorset  
(written by SPRU technology policy researcher Jenny Gristock)  
11-16 March 2001  
<http://www.britishcouncil.org/science/science/pubs.htm>  
<[jen@britishlibrary.net](mailto:jen@britishlibrary.net) <<mailto:jen@britishlibrary.net>> >

Budapest Declaration: Declaration of the Second World Conference of Science Journalists,  
Budapest 1999  
[http://www.absw.org.uk/WCSJ\\_declaration.htm](http://www.absw.org.uk/WCSJ_declaration.htm)

Civicus  
World Alliance for Citizen Participation and Citizen Action  
<http://www.civicus.org>

Colombian Association of Science Journalism  
Lisbeth Fog  
<[elefog@colomsat.net.co](mailto:elefog@colomsat.net.co)>

Danish Board of Technology  
"Citizen Juries"  
Mette Bom  
[mb@tekno.dk](mailto:mb@tekno.dk) <<mailto:mb@tekno.dk>>

Dickson, David / Nature  
"Science, the press and the public:  
from Enlightenment to empowerment"  
Plenary address at the 6th PCST conference in Geneva Feb. 2001  
<http://visitservice.web.cern.ch/VisitsService/pcst2001/>  
<[D.Dickson@nature.com](mailto:D.Dickson@nature.com)>

Durant, John  
PUS expert and author of many publications  
Asst. Director of the Science Museum / London  
<http://www.sciencemuseum.org.uk/publications/overview.asp?subsection=1>  
<j.durant@nmsi.ac.uk>

European Union of Science Journalists Association / EUSJA  
Werner Hadorn  
Istvan Paluguay  
<http://www.esf.org/eusja/EUSJA.htm>  
<Palugyai@Nepszabadsag.Hu>

Gegenworte  
Zeitschrift für den Disput über Wissen  
1999: Muss Wissenschaft hinein ins Leben?  
2001: Wissenschaftssprache Sprache der Wissenschaftler  
(periodical for dispute about knowledge)  
<http://www.bbaw.de>  
<gegenworte@bbaw.de>

Greenpeace Magazin  
Push-Pull-Methode (5/01)  
<http://www.greenpeace-magazin.de>

Gristock, Jenny  
Systems of Innovation are Systems of Mediation:  
A discussion of the critical role of science communication in innovation and knowledge-based  
development  
SPRU Science and Technology Policy Research  
University of Sussex, UK  
<http://www.sussex.ac.uk/Users/prpk1/mediation.htm>  
<jen@britishlibrary.net>

Institute for Civil Society  
<http://instituteforcivilsociety.org/left.html>

International Science Writers Association / ISWA  
James Cornell  
<http://www.eurekaalert.org/static.php?view=iswa>  
<cornelljc@earthlink.net>

Japanese Association of Science and Technology Journalists / JASTJ  
Kenji Makino  
<makino@rs.kagu.sut.ac.jp>

Klein, Ansgar  
"Der Diskurs der Zivilgesellschaft.  
Politische Hintergründe und demokratietheoretische Folgerungen"  
Leske + Budrich  
Aktive Bürgerschaft e.V.  
(new German publication about civil society)

Kultur & Technik  
Zeitschrift des Deutschen Museum, München  
"PUS Wissenschaft für alle"  
Ausgabe 4/5/6 2001  
(periodical of the German Museum/Munich on Public Understanding of Science / Science for everyone)  
<http://www.deutsches-museum.de>  
<http://www.beck.de/lsw/Zeitschriften/Themen/kutec.htm>  
<[m.weitze@deutsches-museum.de](mailto:m.weitze@deutsches-museum.de)>

Loka Alert Newsletter on the democratic politics of research, science and technology  
<http://www.Loka.org>

Maecenata Institut für Dritter-Sektor-Forschung  
(German periodical for 3rd sector research)  
<http://www.maecenata.de/centrum/newsletter.htm>

Mohn, Reinhard  
"Menschlichkeit gewinnt"  
Hörbuch, ISBN CD 3-89830-133-8, ISBN MC 3-89830-134-6  
("Humanity wins"/ publication by the chairman of German Bertelsmann Foundation)  
<http://www.bertelsmann-stiftung.de/index.cfm>  
<http://www.bertelsmann-stiftung.de/reformwerkstatt/home/html/index.html>

Neue Zürcher Zeitung  
"Die Wissenschaft verlässt ihre Mauern"  
Sonderbeilage Festival Science et cite, 2.5.2001  
(supplemental of the Zurich daily on science festivals)  
<http://www.nzz.ch/>

PUSH  
Public Understanding of Science and Humanities  
German term: Wissenschaft im Dialog  
<http://www.wissenschaftimdialog.de>  
<http://www.stifterverband.de>  
<http://www.wissenschaftssommer2001.de>  
<http://www.lange-nacht-der-wissenschaften.de>  
<http://www.futur.de>

Putnam, Robert D.  
"The prosperous Community.  
Social Capital and Public Life"  
<http://www.prospect.org/print/V4/13/putnam-r.html>

Putnam, Robert D. (Hg.)  
"Gesellschaft und Gemeinsinn.  
Sozialkapital im internationalen Vergleich"  
Verlag Bertelsmann Stiftung  
(German Bertelsmann Foundation's new publication on social capital)  
<http://www.bertelsmann-stiftung.de/index.cfm>

River Path Associates

The knowledge consultancy ran in the fall 2000 an e-conference "Towards a Democratic Science". The talks, summaries and delegates contribution can be downloaded at the site below. It also contains Brian Wynnes "Public Consultation".

<http://www.riverpath.com/library/indexcard.asp?IndexID=69>

<[mick@riverpath.com](mailto:mick@riverpath.com)>

Science in the Pub

Frank Burnet and Ben Johnson

<http://www.uwe.ac.uk/fas/graphicscience>

<[Frank.Burnet@uwe.ac.uk](mailto:Frank.Burnet@uwe.ac.uk)>

Slove, Richard E.

Democracy and Technology

Guilford Press

[loka@amherst.edu](mailto:loka@amherst.edu) <<mailto:loka@amherst.edu>>

Die Woche

"Expedition ins 21. Jahrhundert:

So lebt der neue Mensch"

#52-01/2001

(German weekly "Die Woche": Expedition into the 21st century

<http://www.woche.de>

Wynne, Brian

[http://www.lancs.ac.uk/depts/csec/staff/BW\\_first.html](http://www.lancs.ac.uk/depts/csec/staff/BW_first.html)

World Federation of Scientists

Permanent Monitoring Panel Science and Journalism

<http://193.247.87.214/PMPanels/Sci&Journal.asp>

<[pmp@urtheory.dircon.co.uk](mailto:pmp@urtheory.dircon.co.uk)>

ZEIT - Reformwerkstatt

(online reform section of the German weekly "Die Zeit")

<http://www.zeit.de/>

---

#### **Other lectures and publications of W.C. Goede on science, science reporting, civil society:**

5th International Conference on Public Communication of Science and Technology PCST Berlin  
1998: Science without Frontiers

"Be a checkered violet if you want to get out of the scientific ghetto!"

<http://www.kommwiss.fu-berlin.de/pcst98/>

<http://www.fu-berlin.de/pcst98/seiteconf.htm>

6th International Conference on Public Communication of Science and Technology Geneva 2001:  
Trends in Science Communication today: bridging the gap between Theory and Practice

"Why we need a new and more democratic culture of science journalism and how to put it into practice. A plea for dialogue, public involvement, social empowerment"

<http://visitservice.web.cern.ch/VisitsService/pcst2001/>

The Pantaneto Forum - Online Platform to promote debate on how scientists are coping with the increasingly important role of science within society / issue:

"Empowering underdogs"

<http://www.pantaneto.co.uk/>

Forum Sozial 1 / 2001: Zeitschrift des Deutschen Berufsverbands für Sozialarbeit, Sozialpädagogik und Heilpädagogik e.V. (DBSH)

"Herausforderung des 21. Jahrhunderts: Vom Staatsbürger zum Zivilbürger"

[http://www.dbsh.de/html/hauptteil\\_1\\_2001.html](http://www.dbsh.de/html/hauptteil_1_2001.html)

<http://www.casa-luz.de/co/presse-02.htm>