

The Need for Public Intellectuals: A Space for STS

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In this address to the president's plenary at the 2001 annual meeting of the Society for Social Studies of Science in Cambridge, Massachusetts, the author reflected on then recent international events and their possible implications for the research and teaching agendas of the social studies of science, technology, and medicine. He proposed the political engagement of science, technology, and society (STS) institutions and individual STS researchers while maintaining a strong commitment to the scholarly studies of science and technology. Drawing on the work of René Gabriëls, the author elaborated a role for STS scholars as the new generation of "public intellectuals."

We live in a technological culture. To understand this culture, insights from the social studies of science, technology, and medicine (I shall use the acronym *STS*—science, technology, and society studies) are centrally important. And STS is not only crucial for understanding our technological cultures; it is equally important for developing democratic politics. I argue in this article for one specific aspect of the role of STS in the politics of technological cultures: the role of STS researchers as public intellectuals.¹

What is the meaning of 9/11 for today's society? How will historians, in the next decade, interpret this period: as one of discontinuity in the world's history, or as an isolated shock after which the world continued pretty much along the same lines as before? Will leaders abdicate or be dropped in elections because of disillusionment about the lack of effectiveness in the exertion of their power? Will people forget the new and frightening insights into the deep divides between Christianity and Islam, between the North and the

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South, between world masters and world slaves? Will people forget about the risks of living in highly developed and closely knit network societies, where dropping a few powdered letters in a mailbox or using a box cutter knife in a plane is enough to send the societal system astray?

I should not, however, formulate this issue in such a dichotomous form: either continuity or discontinuity. Let us try to answer the question of whether our technological culture is changing because of the events of 9/11 (and perhaps other related developments). And if it is, in what aspects is it changing? I build my argument on the claim that the world before and after 9/11 stayed quite similar in important aspects. But then, I argue that we are seeing some crucial new developments that should lead us to formulate new agendas for STS research and teaching.

We live in a technological culture. We lived in one before 9/11, and we live in one now, although perhaps not quite the same. When I characterize our culture as a *technological culture*, I do so to make the familiar STS point that our modern societies are constituted by science and technology, and that one cannot hope to understand modern societies without taking into account the role of science and technology. Indeed, the events of 9/11 and its aftermath could have happened in only a technological culture. Without modern network technologies for communication and transport, the terrorists' actions could not have been prepared and executed; without modern cities and aircraft technology, such devastating damage could not have been done in one sweep; without an effective postal network, it would not have been so childishly easy to disrupt a whole continent with a few powdered letters.

It is only one step to observe that we live in a technological culture. I am arguing that STS needs to make a further step and actively contribute to democratizing this technological culture: to show to a broad array of audiences—politicians, engineers, scientists, and the general public—that science and technology are value laden, that all aspects of modern culture are infused with science and technology, that science and technology do play key roles in keeping society together, and that they are equally central in all events that threaten its stability. It is therefore necessary that science and technology, in their explicit and implicit forms, be subject to political debate.

My initiation into STS, some twenty-five years ago, was through the Dutch science and society movement, which at that time focused much of its work on peace research: issues of nuclear proliferation, the risks of terrorism in a plutonium economy, the potentialities of biological terrorism on the basis of recombinant DNA technology, the dynamics of a bipartisan world system fueled by reciprocal enemy images that were best described in psychiatric terms. That *science and society movement* fruitfully merged with the *sociological studies of science in society*, roughly at the same moment that the

crucial impulse from the *strong program* and the *sociology of scientific knowledge* (SSK) came. This merger moved the agenda along from studying *science* (as a subsystem or function) *in society* to studying the *culture of science and technology*. Over the past two decades, the resulting research has yielded many insights into the detailed processes of scientific knowledge production and technological development. But at the same time, much of this work has not addressed the normative, political, or practical consequences of these insights. To put it strongly: most STS researchers have not raised the question of what to do with these insights. The STS agenda has been largely agnostic as to the normative and political issues related to the application of STS insights.

Current societal problems urge a broadening of the STS agenda. The big issues of social order, international peace, local and social security, national and religious identity, and democracy should be addressed again, but now on the basis of detailed insights in scientific knowledge and technical machines: the agenda can shift from studying the *culture of science and technology* to studying *technological culture*. So when I argued previously that STS can contribute to the agenda of democratizing technological culture, this really was an understatement. I would rather observe that STS has created the basic ingredients of this agenda and then propose that it now should work to realize its potential.

What might this imply—to carry out an agenda of democratizing technological culture? Implications can be specified on at least two levels: first, the implications for the STS field and for its institutional programs, whether in universities or funding agencies such as the National Science Foundation or in scholarly societies such as SHOT and the Society for Social Studies of Science; and second, the implications for STS researchers as individuals.

For the institutional and programmatic level, I propose three related strategies:

- First, and most obviously, the scholarly agenda needs to include explicitly such issues as the role of research and technology for developing nations; new forms of deliberation and control in modern democracies; the integration of political values (e.g., sustainability) into the design of technology; the possibilities and limitations of information and communication technology for supporting democracies; or the role of science and technology in shaping religious experiences, identities, and groups.
- Second, and by implication, STS research needs to reestablish close collaboration with the science and engineering communities. This is valuable for the scholarly agenda in itself, but I mean something different here. I argue that STS-ers can contribute to making things, to changing the world. In doing so, they inevitably will dirty their hands, for there is no free ride here.

- Third, I think that in-depth SSK types of case studies, at a micro level if you wish, of science and technology remain necessary, not because the general epistemological and sociological points have not been made convincingly enough by now but because only through such studies are the detailed insights gained that form the necessary basis for addressing the larger issues that I listed above. Also, and this connects the institutional level to the individual level, doing case studies is a way for individual STS researchers to conduct political interventions. I sometimes think of this kind of intervention as “the STS kiss”: the STS researcher in the role of prince, kissing the sleeping beauty (i.e., the scientist, engineer, or other actor being studied) awake with a detailed study of the actor’s behavior. This metaphor stresses that an STS study highlights qualities of the scientific and technological cultures that the actors themselves may not have been aware of but that they will start to employ consciously once they have been alerted to them.² Another metaphor to describe this kind of intervention via a case study could be “the STS mirror”: STS studies present mirrors in which actors see their cultures and actions in new ways. And again, seeing themselves in these new ways may lead to self-conscious changes in behavior.³

It is important to recognize that there is some tension, especially between the second and third roles. The third strategy elaborates a role for STS scholars as observers and commentators. This role implies a certain critical distance from the practices on which they comment. The second strategy elaborates a role as “social engineers” for STS researchers, who directly engage in the practices of engineers, medical doctors, or policy makers. In describing these activities, metaphors such as a kissing prince or a reflecting mirror are better to be avoided because the distance they suggest is exactly opposite to the engagement strived for.

The translation of the previous institutional strategies to the second level suggests that individual STS researchers need to be both scholars and social engineers. To perform this dual function, they need to remember the special strength to be derived from detailed empirical studies. It also suggests that in this capacity, STS researchers are individuals who can act as knowledgeable guides and members of civic society.

Thus, I would argue that STS-ers should be the public intellectuals of the next decade, in a positive sense of the word. The concept of the “intellectual” was born during the Dreyfus affair in France at the end of the nineteenth century. The anti-Dreyfusards used the word to denigrate the defenders of Alfred Dreyfus, a Jewish army officer accused of spying for Germany. For the nationalistic and anti-Semitic anti-Dreyfusards, it was a term of abuse. They associated it with *abstract*, *decadent*, *incompetent*, *Jewish*, and *antinational*. Reacting to this nationalist right wing, the Dreyfusards used *intellectual* as a salutary title, associating it with *democratic*, *politicized*, *scientific*, and

youthful. Since then, intellectuals have played an important, often proud, and sometimes scorned role in the political cultures of various democratic states.⁴

By the end of the 1980s, however, several authors had proclaimed the end of intellectuals. Alain Finkelkraut (1987) argued that consumerism and cultural relativism had so much eroded universal values such as truth, beauty, and goodness that intellectuals had no role to play anymore (as defenders of such universal values). Bernard-Henri Lévy (1987) observed a lack of public political debate, without which intellectuals cannot function as the consciousness of society. Russell Jacoby (1987), in his book *The Last Intellectuals*, figured that intellectuals had been swallowed by academia, where they are obliged to specialize and write for shrinking audiences.

My plea now is that the twenty-first century needs a new generation and a new style of public intellectuals and that STS-ers can step forward to fill that vacancy. What profile do we need for these new public intellectuals? In my attempt to answer this question, I follow a recent Dutch book by René Gabriëls (2001), a philosopher and STS researcher himself.

In defining this role of the new intellectual, we need to avoid two extremes, which Gabriëls (2001) characterized as the two classic identities of an intellectual. One extreme is the “modern intellectual,” and the other is the “postmodern intellectual.” The modern intellectual is a generalist and a cosmopolitan who serves the general interest, embraces universal values, and makes verdicts on the basis of these universal values; the modern intellectual lives for ideas. The postmodern intellectual lives of ideas: he or she is a specialist, serves partial interests, takes a relativistic position, and interprets various lifeworlds.

These two extremes need not function solely in a negative way, to be avoided. They also provide elements from which to draw strength when we try to specify a new identity for twenty-first-century intellectuals. The modern intellectual makes accusations, whereas the postmodern intellectual tells stories; the modern intellectual has a polemical style, whereas the postmodern intellectual uses irony; the central concept for the modern intellectual is the “norm,” whereas the key concept for the postmodern intellectual is the “boundary.” As metaphors for the styles of intellectual work, Gabriëls (2001) used the role models of judge and interpreter, respectively, for the modern and postmodern intellectuals (see Table 1).

From these elements I compose, still following Gabriëls (2001), my proposal for the public intellectual of the twenty-first century. First, the new intellectual follows a *pragmatist philosophy*. This builds on the recognition that *learning processes* are inevitable and crucial. It helps pragmatists avoid cynicism as well as utopian moralism. These learning processes are typically

Table 1. Two Ideal-Typical Identities of Intellectuals

	<i>Modern intellectual: The Judge</i>	<i>Postmodern Intellectual: The Interpreter</i>
Key concept	Norm	Boundary
Metaphor	Accusation Procedure Tribunal	Understanding Dialogue Translation
Method	To measure special cases against universal norms	To discover the specificity of lifeworlds
Style	Accusation Polemics	Story Irony
Limitation	Too idealistic Too moralistic	Too cynical Too esthetical

tied to concrete cases or problems such as ecological issues, the North-South divide, or terrorism and democracy. Second, the intellectual draws on STS to provide theoretically informed and empirically grounded insight in the role of science and technology in society. Third, the intellectual embraces a kind of *contextual universalism*.⁵ The key idea here is that universal values or differences between lifeworlds are not the starting point for critical intellectual engagement but that these values and lifeworld differences are the result of learning processes into concrete political cases. Concrete problems, for instance related to ecology, wealth distribution, or political plurality, can thus form the starting points for elaborating new standards to govern the relations between humans—standard that all may endorse. Such universal standards result from searching for a *modus vivendi* to relate different groups with conflicting interests. Consequently, conflicts are inevitable. This also implies that contextual universalism cannot be a synthesis or compromise between modern universalism and postmodern contextualism. On the contrary, contextual universalism stresses that a compromise is not possible; the tension between ideas and contexts cannot be resolved by a synthesis. Intellectuals need continuously to abstract from concrete cases and to contextualize general ideas.

In his analysis of the history of intellectuals, Bourdieu (1991) saw philosophers, artists, and scientists moving between the two poles of the ivory tower and politics: he sketched such pendulum movements from the period of the Enlightenment to the beginning of the twentieth century. The modern intellectual, according to Bourdieu, emerges only when writers, artists, and scientists discover that they can engage in politics without immediately threatening the autonomy of their own worlds (of science and art). An

example is the novelist Emile Zola, who turned his talents and popularity into weapons for the defense of Dreyfus. Thus, historically, intellectuals have succeeded in bridging the classical divides between autonomy and engagement, between distance and commitment, between pure and engaged art. In general terms, I have sketched above how agenda development of STS could mirror Bourdieu's analysis of the history of the intellectual.

And now the circle can be closed. Having started on the basis of a marriage between the academic studies of science and the politically inspired science and society movement, STS now has three distinct routes to the future. First, there is the *Academic Highway*, with scholarly journals, monograph series, chairs, undergraduate programs, and graduate schools. Second, there is *Policy Street*, with potentially income-generating STS work, directly useful to the public and private sectors. Third, I make a plea for *Democratization Boulevard*, on which studies are carried out that combine long-term academic agendas with clear political and societal engagement. This route leads to less immediately applicable studies than work on Policy Street, but the studies are more directly inspired by political concerns than work on the Academic Highway.

Although individual STS-ers will often have preferences for one or two of these routes, all three routes need to be maintained at the institutional level in the field of STS, including professional societies and university-based research institutes. Only in that way can institutions provide the infrastructure to nourish individual STS-ers so that they may play their roles of public intellectuals for the next decade.

Notes

1. For this publication, the original address has been modified to an article format. The address was given two months after the attacks on New York and Washington on 11 September 2001 ("9/11"). I therefore kept some references to the events of 9/11 in the article, although the basic argument stems from work that had started previously and is quite independent of these specific threats to democracy. I am grateful to Steve Cutcliffe for helpful comments and for organizing a session at the 2001 Society for the History of Technology (SHOT) meeting in San Jose, California, where some of these ideas were also presented.

2. One example is the article that Karin Bijsterveld and I wrote about Dutch women's advisory committees on housing (Bijker and Bijsterveld 2000). The study did not have an explicit political goal, but reading our work made these women become more conscious of their skills, strategies, and styles. As a result, they started to explicitly reflect on them. In that respect, the study also was a political intervention.

3. Another example is the Health Council study by Roland Bal, Ruud Hendriks, and myself (Bal, Bijker, and Hendriks 2002). This anthropological study of the boundary work that members of the Health Council continuously perform, relating science to politics to public and vice versa, was not committed as a policy or assessment study. It nevertheless became an intervention

when the staff of the Health Council read the book as though looking into a mirror and became conscious of the various types of boundary work in which they were engaged according to our STS analysis. Presenting this study to Beatrix, Queen of the Netherlands, on 8 April 2003, probably added to the book's status as a mirror for (self) studying the Health Council.

4. For more details on the Dreyfus affair, see Winock (1997), Bredin (1986), and Bering (1978).

5. Here, Gabriëls draws on Nussbaum and Sen (1993).

References

- Bal, R., W. E. Bijker, and R. Hendriks. 2002. *Paradox van wetenschappelijk gezag. Over de maatschappelijke invloed van adviezen van de Gezondheidsraad, 1985-2001*. The Hague, the Netherlands: Gezondheidsraad.
- Bering, D. 1978. *Die Intellektuellen: Geschichte eines Schimpfwortes*. Stuttgart, Germany: Klett-Cotta.
- Bijker, W. E., and K. Bijsterveld. 2000. Women walking through plans—Technology, democracy and gender identity. *Technology & Culture* 41 (3): 485-515.
- Bourdieu, P. 1991. *Die Intellektuellen und die Macht*. Hamburg, Germany: VSA.
- Bredin, J.-D. 1986. *The affair: The case of Alfred Dreyfus*. New York: G. Braziller.
- Finkelkraut, A. 1987. *La défaite de la pensée*. Paris: Gallimard.
- Gabriëls, R. 2001. *Intellectuelen in Nederland: Publieke controversen over kernenergie, armoede en Rushdie*. Amsterdam, the Netherlands: Boom.
- Jacoby, R. 1987. *The last intellectuals: American culture in the age of academe*. New York: Basic Books.
- Lévy, B.-H. 1987. *Eloge des intellectuels, figures*. Paris: B. Grasset.
- Nussbaum, M. C., and A. K. Sen, eds. 1993. *The quality of life*. Oxford, UK: Clarendon.
- Winock, M. 1997. *Le siècle des intellectuels*. Paris: Seuil.

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