

# The need for critical intellectuals: a space for STS

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# **The need for critical intellectuals: a space for STS**

**Contribution to NSF-911 workshop at MIT, 16 March 2002**

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We live in a technological culture. To understand this culture, insights from “science, technology and society studies” (STS) are centrally important. And STS is not only crucial for *understanding* our technological cultures, it is equally important for developing *democratic politics*. I will argue in this paper for one specific aspect of the role of STS in the politics of technological cultures—the role of STS researchers as public intellectuals. The paper grew out of two presentations given, respectively, one and two months after the attacks on New York and Washington at 11<sup>th</sup> September 2001 (“9-11”).<sup>1</sup> I therefore have kept some reference to the 9-11 events in the article, although the basic argument stems from work that had started previously and is quite independent of these specific threats to democratic society.<sup>2</sup>

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 in the deep divides between Christianity and Islam, between the North and the 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

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<sup>1</sup> A first version of this paper was presented in the President’s Plenary at the Annual 4S Meeting in November 2001, Cambridge, MA. That paper extended a contribution given to a panel at the Annual SHOT Meeting in October 2001, San José, CA. The present version was revised for the NSF-MIT workshop “Rethinking Technology after 9-11.” I am grateful for comments by Steve Cutcliff and René Gabriëls.

<sup>2</sup> See for example (Bijker, 1995, 1999; Bijker & Bijsterveld, 2000).

powdered letters in a mail box or using a carton knife in a plane is enough to send the societal system astray?

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

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 since, could only happen in a technological culture. Without modern network technologies for communication and transport, the terrorist actions could not have been prepared and executed; without modern city and aircraft technology, no such devastating damage could have been done in one sweep; without the effective mail 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 will argue that STS needs to make a further step, and actively contribute to *politicizing* this technological culture: to show to a broad array of audiences—politicians, engineers, scientists, 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 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 in their implicit forms, are subject to political debate.<sup>3</sup>

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.<sup>4</sup> 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 ushered 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 this yielded many insights into the detailed processes of scientific knowledge production and technological development. But at the same time, most of this work did not address the normative, political or practical consequences of these insights. To put it strongly: most STS researchers did not raise the question, *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.<sup>5</sup>

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<sup>3</sup> I deliberately use the phrase “politicizing” rather than “democratizing”, because “democracy” is indeed but one of the many objects of politicization. I thus want to flag that “democracy” can have a variety of meanings. There are more models of democracy than the American Jeffersonian democracy or the European representational elitist democracies. The choice of model of democracy itself needs indeed to be politicized: that choice is not self-evident. The question what forms of democracy are most appropriate for our technological cultures, should be part of the agenda’s for politicization of technological culture—both the scholarly and the political agenda.

I do realize that “politicization” does have a negative connotation in (at least American) English: it is associated with politically hijacking an issue, and infusing politics where it does not belong. But I have no alternative word. (Thanks to Rosalind Williams for a discussion of this issue; **but I may need more...**)

<sup>4</sup> **References possible**

<sup>5</sup> This critique sounds similar to, but is different from Langdon Winner’s critique on social constructivism (Winner, 1993). **Elaborate?**

I want to argue that 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 from the sociology of scientific knowledge (SSK) into scientific knowledge and technical machines: the agenda can move from studying the *culture of science and technology* to studying *technological culture*.<sup>6</sup> So, when I argued previously that STS can contribute to the agenda of politicizing technological culture, this really was an understatement. It would be more accurate to say that STS created the basic ingredients of this agenda, and now just should live up to the expectations this implies.

What might this imply—to address an agenda of politicizing technological culture?

These 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 in funding agencies like NSF, or in scholarly societies like SHOT and 4S; and
- second the implications for STS researchers as individuals.

For the institutional and programmatic level, I propose three strategic implications:

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 ICT 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 re-establish close collaboration with the science and engineering communities. This is valuable for the scholarly agenda in itself; but I mean something differently here. I want to argue that STS-ers can contribute to making things, to changing the world. In doing so, they inevitably will dirty their hands—there is no free ride here.

Thirdly I think that in-depth SSK-type of case-studies—at a micro level if you wish—of

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<sup>6</sup> I am not the only one, nor the first, to advocate this. **References.**

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 the detailed insights are 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 make a political intervention.

The translation of the previous institutional strategies to the second level implies that STS researchers need to be (1) scholars *and* (2) social engineers; and that they can do that better if (3) they do not forget the specific strength of detailed empirical studies. To continue the analysis of the implications for individual STS-ers and for citizens in a technological culture, I will argue for a role of STS-ers as intellectuals of the next decade.

The concept of “intellectual” was coined during the Dreyfus affaire in France at the end of the 19<sup>th</sup> century.<sup>7</sup> The anti-Dreyfusards used this word to make the defenders of Dreyfus appear in a bad light. For the nationalistic and anti-Semitic anti-Dreyfusards it was a term of abuse. They did associate it with “abstract”, “decadent”, “incompetent”, “Jewish”, “anti-national.” As a reaction, and in contrast, the Dreyfusards used “intellectual” as a title to be proud of, associating it with: “democratic”, “politicized”, “scientific”, “youthful.” Since then, “intellectuals” have played an important, often proud, and sometimes scorned role in the various political cultures of democratic states.

By the end of the 1980’s, however, several authors proclaimed the end of the intellectuals. Alain Finkelkraut 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 observed a lack of public political debate, without which intellectuals cannot function as the consciousness of politics and society. Russel Jacoby, in his 1987 book *The Last Intellectuals*, figured that the intellectuals have been swallowed by academia and have

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<sup>7</sup> **More details possible.**

been obliged to specialize and to write for an increasingly smaller audience.

My plea now is that the 21<sup>st</sup> century needs a new generation and a new style of intellectuals, and that STS-ers can step forward to fill that vacancy. What profile do we need for these new intellectuals? In my attempt to answer this question, I follow a recent Dutch book by René Gabriëls—a philosopher and STS researcher himself.<sup>8</sup>

In defining this role of the new intellectual, we need to avoid two extremes, which Gabriëls characterizes as the two classic identities for an intellectual. The one extreme is the “modern intellectual”, the other extreme the “postmodern intellectual.” The modern intellectual is a generalist and a cosmopolitan, 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 *off* ideas: she or he is a specialist and a patriot, serves partial interests, embraces relativism and interprets various life worlds.

These two extremes need not only function in a negative way: to be avoided. They also provide elements on which to draw when we try to specify a new identity for the 21<sup>st</sup> century intellectual. The modern intellectual makes accusations, where the post-modern tells stories; the modern has a polemical style, the post-modern uses irony; the central concept for the modern intellectual is “norm”, the key concept for the post-modern intellectual is “boundary.” As metaphors for the styles of intellectual work, Gabriëls used the role models of judge and interpreter respectively for the modern and for the postmodern intellectual (see table 1).

	<b>Modern intellectual: the <i>Judge</i></b>	<b>Postmodern intellectual: the <i>Interpreter</i></b>
<b>Crucial symbol</b>	<i>Norm</i>	<i>Boundary</i>
<b>Metaphors</b>	<i>Accusation</i> <i>Procedure</i>	<i>Understanding</i> <i>Dialogue</i>

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<sup>8</sup> Gabriëls (Gabriëls, 2001).

	<i>Tribunal</i>	<i>Translation</i>
<b>Methods</b>	<i>To measure special cases against universal norms</i>	<i>To discover the specificity of life worlds</i>
<b>Style</b>	<i>Accusation Polemics</i>	<i>Story Irony</i>
<b>Limitations</b>	<i>Too idealistic Too moralistic</i>	<i>Too cynical Too esthetical</i>

**Table 1 Two identities of intellectuals**

From these elements I compose, still following Gabriëls, my proposal for the intellectual for the 21<sup>st</sup> century. First the new intellectual follows a pragmatist philosophy. This builds on the recognition that *learning processes* are inevitable and crucial. It helps the pragmatists to avoid cynicism as well as utopian moralism. These learning processes are typically tied to concrete cases or problems—ecological issues, the north-south divide, 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. The key idea here is that universal values or differences between lifeworlds are not the *starting point* for critical intellectual engagement—these values and lifeworld differences are the *result* of learning processes into concrete political cases.<sup>9</sup> This contextual universalism is no synthesis and compromise between modern universalism and postmodern contextualism. On the contrary: contextual universalism stresses that a compromise and synthesis 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 sees philosophers, artists and scientists moving between the two poles of the ivory tower and the politics: he sketches

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<sup>9</sup> This is very similar to the classic constructivist point, first made by Latour and Woolgar in their “splitting and inversion” model (Latour & Woolgar, 1979 (1986)). **Elaborate or drop?**

such pendulum movements from the period of Enlightenment to the beginning of the 20<sup>th</sup> century.<sup>10</sup> The modern intellectual, according to Bourdieu, only emerges when writers, artists, scientists discover that they can engage in politics without immediately threatening the autonomy of their own world (of science or art). In his fight for Dreyfus, Emile Zola thus deliberately used his standing as a literary writer. Thus the intellectuals succeeded to bridge the classical divide between autonomy and engagement, between distance and commitment, between pure and engaged art. And now the circle can be closed. The history of STS mirrors Bourdieu's analysis of the history of the intellectual.<sup>11</sup>

Having started on the basis of a marriage between academic studies of science and the politically inspired science & society movement, I now see the development of 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 the *Policy Street*, since some of the results of STS are so directly useful and applicable that they can be sold to make some money. Thirdly, I want to plea for the *Politicization Boulevard*: academic studies with a long-term agenda and thus less directly useful than work on the policy street, but with more direct political inspiration: than work on the academic highway.

Although I can imagine that individual STS-ers will have a preference for one or two of these routes, I want to propose that at the institutional level—the field STS, societies such as 4S, and university institutes—all three routes need to be maintained. Only in that way the institutions can provide the infrastructure to nourish individual STS-ers so that they can play their roles of intellectuals for the next decade.

To conclude, I will briefly sketch some of the implications of this argument for 4S as a scholarly society. An intellectual is by definition an individual with a name, not someone anonymous or hiding in a group or a society. In that sense, 4S can only play a limited role

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<sup>10</sup> **References**

<sup>11</sup> **Elaborate? Refs to my old “detour” argument? Use example of science shops?**

as a home base for such critical intellectuals, and my argument cannot—so it seems—be applied to the 4S as a society. 4S has been developing from a mere meeting organizing body into a scholarly society that hosts many more activities and thus increasingly and self-consciously shapes the field: a journal, Handbooks, an outreach to Asia, South America, Eastern Europe, Africa, and strategic collaboration with other scholarly societies and the AAAS.

But also the societies' role of "home base for intellectuals" takes further shape. In Vienna the Presidents of 4S and EASST provided a carefully designed platform for individual members to take a stance against extremist right developments in Austria. In 2001 the 4S herself took on a more direct political role to further the case of critical intellectuals. An NSF workshop, organized by 4S' President, Sheila Jasanoff, was explicitly a 4S action: the Society takes an initiative, creates a politically relevant forum (in this case that of the Deans of leading liberal arts schools in the US), and brings individual 4S members to this forum. They, then, engage as critical intellectuals—moving out of their scholarly confines and translating their experiences and insights into politically relevant interventions to enhance the teaching of STS in broad education.

## References

- Bijker, W. E. (1995). *Democratisering van de Technologische Cultuur (Inaugurele Rede)*. Maastricht: University of Maastricht.
- Bijker, W. E. (1999). Towards Politicization of Technological Culture: Constructivist STS Studies and Democracy. In H. Ansal & D. Çalisir (Eds.), *Science, Technology and Society: International Symposium / Uluslararası Bilim, Teknoloji ve: Toplum Sempozyumu* (pp. 5-16). Istanbul: Istanbul Technical University.
- Bijker, W. E., & Bijsterveld, K. (2000). Women Walking through Plans—Technology, democracy and gender identity. *Technology & Culture*, 41(3), 485-515.
- Gabriëls, R. (2001). *Intellectuelen in Nederland : publieke controversen over kernenergie, armoede en Rushdie*. Amsterdam: Boom.
- Latour, B., & Woolgar, S. (1979 (1986)). *Laboratory Life: The Construction of Scientific Facts*. Princeton: Princeton University Press.
- Winner, L. (1993). Upon Opening the Black Box and Finding it Empty: Social Constructivism and the Philosophy of Technology. *Science, Technology, & Human Values*, 18(3), 362-378.