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What is This?

Reading *Digital Denmark*: IT Reports as Material-Semiotic Actors

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During the past decade, several governmental reports have discussed how information technology can transform Danish society. Most important among these reports is Digital Denmark *from 1999. In this article, the authors examine how to analyze* Digital Denmark *by considering two strategies for engaging reports. The first aims at uncovering and making explicit hidden assumptions or ideologies in the text. This approach is called "reading against the text." The second approach—inspired by science, technology, and society studies—considers where a text goes and what it does rather than how to critically interpret it. Texts may be read as material-semiotic actors, having effects on their environment that exceed or bypass discussions of content or motivation. This approach is called "reading with the text," and the authors argue that traveling with* Digital Denmark *makes visible the limitations of critical analyses, while adding agency to the report as it moves in between practices.*

Keywords: *reports; material-semiotic actors; reading strategies; information society*

During the past decades, several prophecies have been made about the changes that may result from the increased use of information technology (IT) in most of the Western world. In Denmark, this has happened in various arenas but prominently through pronouncements in a number of public reports, which have aimed at uncovering the positive potential of IT but have also warned about different potentially inexpedient implications of the increased use of such technologies.[1] Such reports vary widely with respect to focus and content, ranging from investigations of specific practices[2] to very general discussions about the possibilities of developing the country as a

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highly networked IT nation. The most well known of these broadly focused reports is the Danish Ministry of Research's 1999 report *Digital Denmark— Conversion to the Network Society.*[3]

In this article, we discuss two ways of relating to reports such as *Digital Denmark* (Danish Ministry of Research 1999): reading and understanding. We describe two ways of understanding the relation between a text and its environment (Bloomfield and Vurdubakis 1994; de Laet 2002). The first way is critical and skeptical. It aims to uncover hidden, forgotten, and/or repressed meanings and make such underlying themes explicit. This broadly defined approach is called "reading against the text." In contemporary cultural theory, the notion of text has expanded such that (almost) everything can be read "as text," thus indicating that strategies of reading against texts clearly open up a broad field of cultural investigation. We illustrate this way of reading with a brief discussion of the way that education and learning is related to IT in *Digital Denmark*.

The second approach is inspired by science, technology, and society (STS) studies. From this perspective, it is less interesting to consider how to interpret and criticize a text (or any other entity) than it is to see where it goes and what it does. This approach is called "reading with the text." From this perspective, texts, if successful, are always on the move, and in that movement, they overflow their textual functions. Therefore, they may advantageously be read as material-semiotic actors, having effects on their environment that exceed or bypass discussions of content and intentionality. This line of thought is exemplified by a reading that shows how *Digital Denmark*'s framing of education and learning in the network society is, at most, partially connected with specific activities. We illustrate such connection by relating the report to a number of local initiatives under the Digital North Denmark project.

The STS reading neither criticizes public IT reports for their narrow definitions or simple-minded goals, although this is certainly possible, nor praises them for their visions. On the contrary, "traveling" with the *Digital Denmark* report makes visible some limitations of both critical and visionary approaches. An STS-inspired approach to reading reports does not render an understanding of the content superfluous, but it does allow the suspension of narrow concerns with textuality and meaning, and it adds more agency to the text as it moves in practices.

Our argument unfolds in the following order: First, we discuss the relationality of texts and specifically relate this idea to Donna Haraway's (1997) notion of material-semiotic actors. Second, we present the general argument of the *Digital Denmark* report. Third, we briefly indicate the difference in interpretive effects of reading with or against the text. Fourth, we schematically outline the shape of a critical reading of the visions of learning

that are presented in the report. Fifth, we delineate and illustrate a strategy for reading the text as a material-semiotic actor rather than as a vehicle for intentions and ideologies. Sixth, we sum up the results of this alternative mode of reading. Seventh, we conclude with a discussion of the politics of this approach, and we consider how it can be understood in terms of the changing informational politics of the contemporary political landscape in Denmark.

The Relationality of Texts: On Material-Semiotic Actors

The idea of "reading" is far from singular. For example, classical hermeneutics was occupied with the reading of biblical texts (i.e., an exegesis) but later included readings of a far broader range of written expressions (Gadamer 1994; Palmer 1969). Contemporaneously, a displacement of the very idea of textuality has taken place, not least within the frame of cultural theory and deconstruction. It is now commonly acknowledged that one can talk about readings not only of written material but also of advertisements, movies, the subconscious, sports activities, or material artifacts (e.g., Balsamo 1996; Fiske 1987; Ortner 1991; Wolmark 1999). A paraphrase of Derrida's (1976) proposition that "everything is text" is often invoked; thus, it follows that everything can be read.[4]

This enormous conceptual extension can be viewed as simultaneously self-limiting and self-differentiating. It is limiting because a notion such as reading easily loses precision and, consequently, analytical merit as it is used in more and more contexts. But for the same reason, it is also differentiating because the notion of text must necessarily be worked over, respecified, and fit to each context (see Hayles 2000; see also Chartier 1997, chaps. 6 and 7).

Insights from STS studies are of value in such respecifications. But translating the notion of reading into an STS context brings with it a displacement. As the idea of writing is often used, it has a connotation of an intentional subject putting down more or less transparent textual markers that may be deciphered by an acute reader.[5] The point of analyzing texts is to break the code and find the meaning hidden beneath the surface of expressions.

From an STS point of view, the assumptions about the relationships among texts, readers, and authors that inform this strategy of interpretation are problematic. Such a perspective would stress that human intentions are rarely able to imprint themselves on, connect with, or otherwise affect the material world and still remain unaffected themselves. Thus, this suggests that the interaction between human (reader) and thing (to be read) cannot be understood on the basis of a distribution of agency, which imagines that active people decode passive things that are imbued with the intentions of

other active people. Instead, we want to explore notions such as feminist theorist and historian of science Donna Haraway's (1997) material-semiotic actors can be used to characterize forms of interaction between humans and texts in which both sets of entities are seen as active and transformational.

Subsequently, we evoke Haraway's (1997) understanding of material-semiotic actors in describing an alternative to critical reading—reading with the text. First, however, we specify our understanding and use of this term, because it may be seen as arguing for a so-called nonpolitical reading of a political document, whereas Haraway often works in the opposite direction—unearthing the politicized dimensions of seemingly nonpolitical domains.

In the "Syntactics" section of *Modest_Witness@Second_Millennium*, Haraway (1997) writes, "I learned early that the imaginary and the real figure each other in concrete fact, and so I take the actual and the figural seriously as constitutive of lived material-semiotic worlds" (p. 2). This citation suggests that one of the most important aspects of the material semiotic is the aim to construct a relationship between the empirical and the figurative that is not simple and not naive. Indeed, these two "domains" are not separable at all; they are always intertwined and coconstitutive, as Haraway shows in her analyses and refigurations (such as the cyborg or the vampire).

Among other things, refiguring is about learning to take responsibility for one's productions, intellectual and otherwise, which Haraway (1991, 183-203) characterizes as developing practices of situated knowledges. Such practices of knowledge are alternatives to those that present themselves as neutral, atemporal, and objective and are represented by the modest witnesses of Haraway's (1997) book title.

Because we are presenting an argument based on the limits of criticism, the question of our own position is therefore raised. Do we attain to the position of modest witness in presenting a noncritical reading of what may easily be viewed as a superficial and problematic document? Evidently, we do not think so. However, the question relates to one of the analytical points that we emphasize herein. We suggest that the capacity of contemporary theory for expanding semiotics to everything (i.e., "everything is text") has often had the effect of rendering questions of materialization superfluous in cultural theory. Haraway's (1997) notion of material-semiotic activity balances this situation when the material-semiotic actors one investigates actually are texts, classically conceived, because even reports must then be analyzed in their materiality.

When one does so, critical interpretation of texts becomes less central, or central only in connection with analysis of pragmatic textual efficacy in different practices. This reformulates the critical potential of reading because it now requires "an immersion in worldly material-semiotic practices, where

the analysts, as well as the humans and nonhumans studied, are all at risk—morally, politically, technologically, and epistemologically" (Haraway 1997, 190).

Digital Denmark—Hopes of a Network Society

"I need someone to supervise me: where are we going?"[6] With this motivation, the Danish Minister of Research appointed a two-person committee, consisting of a politician and a businessman, whose purpose was to formulate an IT vision for Denmark. However, at the introduction of the project, the commission of the group was not clear. A newspaper asked the Minister for a short explanation of the aspirations of the committee; he answered as follows:

> The committee means that we are getting an integrated IT-based educational network. A suggestion as to how the citizens can communicate directly with the authorities by means of IT—and follow their cases. Do you want more? This is all we have. So far.[7]

To substantiate the vision of Denmark in the network society, citizens and organizations were invited to contribute their ideas, and after a year of work, the report *Digital Denmark—Conversion to the Network Society* was published in November 1999.

Digital Denmark is organized into a narrative with three parts. There is a diagnosis of the current status of IT in Danish society. The diagnosis makes visible a series of challenges, potentials, and problems. Coming up with solutions for how to effectively handle these problems and possibilities is the aim of the report. As part of the diagnosis, the report states,

> Denmark is heading towards a network society in which incredibly rapid technological development makes it difficult for even the best technicians to see as little as three years ahead. A development in which globalisation is breaking down the boundaries standing in the way of inter-human communication, and in which the digital economy with e-trade and new electronic procedures is changing our views as to how money can be earned. (p. 7)

The challenge follows:

> In short, *Digital Denmark* is about the ways in which Denmark can become an influential IT nation in the network society, while we still uphold the best values of our welfare society. (p. 7)

It took a year to write the report, but "one year is a very long respite in the age of the Internet" (p. 6). Paradoxically, however, a year is also much too little time to be able to survey, much less think through, all the consequences that this new age brings with it. This is especially problematic insofar as IT is expected to intervene in every imaginable practice, from nurseries to administration of the environment to surgery. Thus, there is no naturally delimited focus for the report; the challenge is spread across the entire social sphere.

It was therefore left to the choice of the authors to decide on five themes with matching challenges that they found particularly pertinent. They proposed that the digital economy had a growth potential of up to 50 percent of the total gross domestic product. Thus, the first challenge was to get Danish businesses quickly established on the net. New technologies were supposed to enable the tailoring of products to individual consumers and offer cheaper goods to be purchased from the Internet. However, the same technologies could make possible unprecedented levels of surveillance. Thus, the second challenge was to establish a high level of consumer information and prevent technological encroachments on personal freedom. Citizens spend increasing amounts of time on the Internet, to shop, to work, and for entertainment; therefore, the third challenge was to shape the technologies to enhance the quality of everyday life. This would also be dependent on the development of abilities such as creative thinking, personal engagement, and the ability to filter large amounts of information. Thus, the fourth challenge was to offer lifelong learning to citizens. Finally, the writers were worried that the globalizing tendencies of the Internet may strengthen very close and very distant communities at the peril of the national community. Therefore, the fifth challenge was to improve the ability of educational institutions to convey common Danish values that ensure the solidarity of society. Overall, the report simultaneously embraces the new technologies with all their possibilities and maintains the position of the guardsman of traditional (social-democratic) values that underpin the crumbling Danish welfare society, which is threatened by rampant neoliberalism.

Reading *Digital Denmark*

How does one read a "boring" text such as *Digital Denmark*? An obvious approach is to read it critically. It could be pointed out, for example, that the report builds on various assumptions about technologies, learning, and education, which become problematic to sustain if carefully reviewed from the point of view of a variety of perspectives in cultural and social theory. Its

dispositions could be roughly characterized as technocratic and deterministic. As we mentioned previously, we refer to such reading as "against the text."

In doing so, we argue specifically with recent developments in cultural theory, often inspired by deconstruction, which surprisingly often retain a highly concrete notion of what counts as a text to analyze or deconstruct. Despite the deconstructive effort to expand the notion of text to everything, texts are still regularly read critically as stand-alone texts. The same cannot be said of all critical social research. The productive argument of the present text is that a strategy of reading with the text makes visible a number of obscured facets of the changing information politics adopted in contemporary governance. These changes often ignore, and sometimes distinctly under-mine, classical categories of social theory. Following reports as they travel is a flexible analytical method for investigating such changes in government and their practical consequences in different settings.

From an STS perspective, it is possible to read with the text by regarding it as active. From this point of view, the report is one material-semiotic technol-ogy among others, which works by associating with and affecting heteroge-neous practices and which is transformed in the process. If this is the case, it becomes less relevant to be able to judge whether the representations and characterizations in a report are true or false and more important to show how reports "travel" to different practices and establish links. Read in this way, *Digital Denmark* becomes an interesting actor of sorts, one of relevance to the media, to the political system, and to different business and academic practices.

We approach *Digital Denmark* with this "double vision," looking at the report from both a "representational" and a "performative" point of view (Pickering 1995). The former enables us to take apart and make explicit some of the various assumptions on which the report is built. Here, we are espe-cially interested in the sections that talk about learning and education. The latter approach enables us to travel with the report to a few of the many places where it has settled and taken effect (e.g., to the Digital North Denmark Pro-ject). By looking at some ways in which the ideas of learning promoted in the *Digital Denmark* report have been transformed as they became practically embedded in local developments in Northern Jutland, we hope to make visi-ble the limits of an approach based on textual criticism.

Visions of Learning in *Digital Denmark*

In *Digital Denmark*, lifelong learning for all citizens is emphasized as a necessary component in converting to the network society. But how is this goal realized? The report answers as follows:

> This objective is to be met through investments in, and initiatives aimed at an adjustment of, the educational system and by ensuring special IT competence. (p. 60)

This broad goal is specified in a section developing a national strategy for lifelong learning. Here, it is explained, for example, that a "strategy should be drawn up for how all Danish citizens can be ensured access to life-long learning" (p. 51). Among other things, this includes a "radical adjustment of the content of training and education, forms of learning and methods of evaluation" (p. 52).

Such a formulation makes it relevant to consider how this radical conversion is conceptualized in *Digital Denmark*. Thus, we now put forth a critical, but in no way exhaustive, reading of the types of explanations that the report offers as to what "development of IT qualifications" are and how they are to be ensured.

According to *Digital Denmark*, conversion to the network society had already begun in 1999. The problem was that this process was driven largely by "moving spirits." Moving spirits are particularly enthusiastic people, who start up local IT-initiatives, get them going, and keep them alive. Because local developments are almost exclusively driven by such initiatives, this becomes problematic because it increases the variation in IT development between what are arguably otherwise similar practices. Therefore, the first recommendation is the construction of a common national strategy for lifelong learning.

Digital Denmark distinguishes between two components of lifelong learning and makes several related recommendations respective to each. There are "basic IT qualifications," which address the "need to be able to handle the most common office applications and the Internet" (p. 60), and there are "derived IT qualifications," which refer to workers' capabilities to continually adapt to new IT environments. For example, it is recommended that teachers on the primary and secondary school levels get better IT support, that they are offered a home personal computer (PC) deal, that all courses become IT integrated, that an Internet connection per ten pupils is made available, and that English, the language of the IT revolution, is taught beginning in nursery school. With respect to higher education, it is recommended that virtual universities should be promoted, that there should be a larger intake of IT-related students at institutions of higher learning and that a larger amount of computer scientists should be produced. Finally, the unemployed should also be offered relevant IT courses.

Broader tendencies and assumptions can be read on the basis of how these recommendations are formulated. Foremost among these tendencies is an

assumption that IT should be the central focus of lifelong learning. Recommendations, such as the home PC deal and the necessary increase in the Internet connection to pupil ratio, suggests that if there are not enough computers, then not enough can be learned. But what is learning then? As the focus of *Digital Denmark* is technology, learning is interpreted in a narrow, concrete, and technology-driven sense, which is related to the definition of basic IT qualifications. In general, it is viewed as a matter of becoming proficient in the use of Microsoft's office pack—that is, to be able to use programs such as Word or Excel rather than, for example, becoming able to work flexibly with many different problem areas by means of a broad array of (IT-based) tools. Within the framework of *Digital Denmark*, such qualifications are viewed as "derived IT qualifications," which are considered irrelevant at first because the explicit primary goal is to meet the assumed commercial demand that everyone become capable of handling a narrow, specified set of programs. At this point, it becomes easy to argue that the putative "radical learning," which was advertised in the previous section of the report, has disappeared: nothing is particularly new or radical in insisting that workers need to learn to use simple and specific types of tools to accommodate the wishes of employers (e.g., see du Gay and Salaman 1992; Miller and O'Leary 1994).

Thus, when read critically, the implied notion of learning is problematic, as is the implied concept of technology. In *Digital Denmark*, technology is the (partly uncontrollable) motor, and Danes need to adapt to its movements. Anthropological studies have repeatedly shown that it is important to take into consideration "the human component," itself a shorthand and quite inadequate term, and that local practices are integral parts of successful technological developments. It has been shown that it makes no sense to talk about the IT revolution independent of difference that it makes to people who are situated in specific practices, with specific problems at hand (e.g., Edwards 1998; Lave and Wenger 1991; Star 1995; Suchman 1987).[8] It seems evident that when the IT revolution becomes concrete to the degree in which specific commercial computer programs are defined as facilitating it, then one is moving quickly toward a highly peculiar notion of revolution.

The point of these comments is not that it is wrong for *Digital Denmark* to focus on IT, education, and learning, but if we read the report critically, its way of analyzing these topics seem superficial. Ensuring access to a PC with a series of office tools, and adequate IT-support, cannot guarantee that lifelong learning will follow. On the contrary, it can be argued that this way of conceptualizing the conditions for learning is extremely limiting because it signals a highly inflexible idea of the types of learning a network society, whatever this might mean, may need.[9] It can also be argued that *Digital Denmark* is interested in a more flexible format of derived IT qualifications. But

this interest remains implicit because the notion can only be given content "as the corporations re-structure organisations and working routines" (pp. 60-61). Thus, the ideas presented as derived IT qualifications suffer from precisely the opposite malady of the ideas of basic IT qualifications: the formulations work on a level of abstraction that makes it exceedingly unclear what their relation to any real working practices would be. Thus, there are no suggestions of what could or should be learned or how IT would facilitate any such learning.

Here, a further point, which does not relate to *Digital Denmark's* (Danish Ministry of Research 1999) treatment of learning as such but does bear on the organization of the document as a whole, deserves notice. We are referring to the blatant tendency of the report to present its arguments in an unspecified and undifferentiated language—that is, to talk to and about what Haraway (1991, 1997) calls the "universal man" in a manner that assumes, or pretends to assume, that one size does indeed fit all.[10]

Digital Denmark as Material-Semiotic Actor

Situated knowledge is . . . not a knowledge that a given group simply "happened" to develop. Rather, situated knowledge is something that is produced through being located in a certain position that allows for a *specifically* partial perspective. (Biagioli 1996, 193)

Previously, we attempted to read parts of the *Digital Denmark* report critically. Although it is important to be able to recognize and analyze the assumptions that are implicit in the text, this is not the only thing that may be done with the report. It is also possible to read it in another register. The previous discussion was about the representations of the report. However, one can also choose to "travel" with the report to see how it "performs" and in what places it finds its "effective domain," that is, where its knowledge becomes situated in a partial way. This second reading, which we carry out subsequently, is not necessarily focused on the textual content of the report. Rather, it is concerned with the relations that the report becomes capable of forging with various practices. From an STS perspective, such an approach to reading reports is more consequential than is the representational perspective.[11]

After the publication of *Digital Denmark*, the press commented on and analyzed it. Some commentators were critical. For example, a number of businessmen and analysts took notice that the report was not sufficiently visionary. Others criticized the defective understanding of technology in the

report. In turn, the authors defended themselves by claiming that nothing would be easier than coming up with unrealistic visions.

Even though the public debate was partly focused on the report itself, many comments also related the report to the IT-political proposal that the Danish government introduced fewer than two weeks after the publication of *Digital Denmark*. The suggestions in this proposal were collected in the *Digital Denmark* action plan, but they were collected selectively, and many had been led out. This led to criticism. Business and trading people accused the government of not putting serious effort into realizing the visions. The government apologized, referring to lack of funds, and countered that some of the formulated proposals were not analyzed well enough to be converted into specific initiatives.

Despite the discussion and criticism, however, the report also became a starting point for a number of activities. Most conspicuous among these was the project called Digital North Denmark, which was one of the two Danish IT "lighthouses" to be established. In *Digital Denmark*, this idea was described in the following way:

> The IT lighthouses should also function as large scale IT-based experiments directed at citizens, the training and education sector, the public administration, trade and industry and the infrastructure. (p. 97)

The idea of making an IT-lighthouse in North Denmark was realized by dedicating money to the project in the action plan, which was proposed shortly after the publication of *Digital Denmark*. Digital North Denmark took off early in 2000. Digital North Denmark's homepage presents the project in a way that is recognizable from the formulations in *Digital Denmark*.

> The general object of The Digital North Denmark is to create the future networked society and try out experiments aimed at tomorrow's IT society.[12]

As means to reach the goal of the project it focused on

- expanding and enhancing the technological infrastructure,
- enhancing the development of qualifications,
- promoting employment and the competitive power of the industrial sector, and
- enhancing service and efficiency within the public sector.[13]

As is indicated in these formulations, a clear connection between *Digital Denmark* and Digital North Denmark is apparent. However, this is not to say that we are witnessing a "top-down" implementation of a finished product:

> It should be made clear that The Digital North Denmark should be considered in context with the development already evolving in North Denmark.[14]

This remark emphasizes an important aspect of the Digital North Denmark: it connects the visions from *Digital Denmark* with already existing regional practices. These practices can now be understood as embryonic expressions of the visions of a Digital North Denmark, which come to stand metonymically for *Digital Denmark*.

Related to the previously mentioned points of focus, Digital North Denmark established experiments (or projects) in four areas: (1) IT infrastructure; (2) IT industrial development, E-business, and IT framework conditions for the industrial sector; (3) qualification and education; and (4) digital administration. It called for applications in each of the four areas, and economic resources were distributed accordingly. Measured by number of projects, qualification and education was the largest area, with thirty-two related projects. Subsequently, we examine further this particular theme, with the aim of clarifying the way competence, learning, and IT are articulated in North Denmark and how these articulations were related to the notions of lifelong learning as propounded in the *Digital Denmark* report.[15]

At the homepage of Digital North Denmark, the following description can be found:

> The main theme of qualification and education is intended to enhance the development of qualifications within the region of North Denmark on IT related fields or fields where IT can contribute to the development of qualifications in general. The object is to create a permanent boost in industrial development, in the services offered by the public sector, in exercising democracy and in the individual citizen's participation in leisure activities, culture, consumption etc. A boost in qualifications is required, covering everyone in North Denmark—from groups possessing none or few IT qualifications, to groups holding spearheading qualifications within one or several fields.[16]

These rather general expressions are concretized in relation to four areas in which special effort is required.

1. IT in education, which covers the idea that educational facilities should offer proper IT-education and broadly integrate IT in their courses.
2. IT in the labor market, which covers the idea that employees need to learn more about IT. "But the development of IT qualifications is not only a question of new capabilities. Private and public workplaces are challenged to use IT in more and more areas and organise work in new ways."
3. IT in leisure and culture, which, among other things, covers "that virtual rooms are created, where citizens can meet, exchange ideas, and show each other what they have to offer".

4. IT as a welfare booster, which prominently covers the notion "that exposed groups are integrated into the network of the welfare society by practically experiencing the possibilities of the new technology."[16]

A further materialization of how qualifications, education, and learning can be handled in the information or network society takes place in the thirty-two projects. But this also brings about a displacement of original ideas and intentions. The first thing to note about these projects is their heterogeneity, even under a single heading such as Qualifications and Education. Project titles are as diverse as The IT Village Package, ICT Qualifying and Virtual Learning in the SOSU-Education, PC Art in Primary School, IT Control of Amenities for the Disabled, and GIS in the School Curriculum.[17]

What is the relation between these mixed initiatives and the *Digital Denmark* report? It seems clear that there are some relations. Obviously, a path can be traced from the report to the IT action plan to the IT lighthouse in North Denmark to each specific project.

Furthermore, many of the above-mentioned initiatives refer explicitly to high-profile ideas from *Digital Denmark*. Take the ICT Qualification and Virtual Learning Under the SOSU Education project, which aims at teaching social and health care assistants how to use modern ICTs. "The basis will be a 'classroom on the Internet,' a virtual room for learning allowing the trainees to develop skills and proficiency in using the technology."[18] Furthermore, it is explicit about the importance of learning:

> Using the technology will make each trainee more proactive in his or her own learning process. This way the project with its one year lifetime will contribute to the furthering of the concepts and ideas underlying the principle of lifelong learning, based on e.g. the readiness and ability to adapt to an existing labour market.[19]

These goals and formulations are clearly inspired by the discourse on virtual learning that is promoted by *Digital Denmark*.

However, it seems equally clear that the relationship is complicated. The practical initiatives do not simply take over ideas or formulations. Rather, they specify and transform them. This might even be seen as a consequence of materializing the visions: they can only become more material, concrete, local, and real by becoming more mundane and compromised in contrast to "grand ideas."

The ICT Qualification and Virtual Learning Under the SOSU Education project was quite vocal about its own potential as creating an implementation of lifelong learning. It offered portable PCs to 50 new students at Hammer Bakker School, sponsored by local regions as well as private companies. The

PCs were to be used both for teaching at the school (theory) and student trainee periods (practice), but practical exigencies quickly altered the project format. For example, a week of workshops had to be dropped because not enough PCs had been made available. Likewise, the project experienced continual unspecified problems with the education platform Quickplace:

> The problems have not delayed the project but made it twist a bit. Instead of working full-time on the Quickplace the students had to work in Word and use the facilities available there.[20]

Thus, the Quickplace environment, specifically chosen to facilitate an integrated learning process, had to be (temporarily) scrapped and exchanged with the generic Word program, which presumably offers no particular incentive for lifelong learning.

We are interested in how to characterize the relationship between an authoritative text and its practical efficacy. The short discussion of the ICT Qualification and Virtual Learning Under the SOSU Education project suggests that though the *Digital Denmark* report certainly has had an influence on the concrete outcome at Hammer Bakke School, it is hard to see its formulations as more than loosely related to this practice. This "looseness" is limiting for approaches that focus on and criticize content. A report such as *Digital Denmark* works rather like a relay between certain administrative and political practices and a diversity of local initiatives. Subsequently, we discuss this idea in more detail.

Reading With or Against the Text

> What I would like to do, however, is to reveal a *positive unconscious* of knowledge: a level that eludes the consciousness of the scientist and yet is part of scientific discourse, instead of disputing its validity and seeking to diminish its scientific nature. (Foucault 1994, xi)

Throughout this article we have approached the reading of reports from two perspectives. First, reading against the text, we have read the report critically, with the purpose of evaluating its textual value. Secondly, reading with the text, we have examined the partial connections that the report may or may not facilitate in an array of practices. We want to argue that the first sort of reading of *Digital Denmark* is a (bad) representation of reality, offering only a limited understanding of the report's function. It is not that such an approach has no value in decoding cultural expressions; it has enabled us to show how the *Digital Denmark* report builds on problematic assumptions

about learning, technologies, and their relations, and it demonstrates that the report presents a rather low degree of trustworthiness, if trust is established by a large amount of neutral facts about the referent of the report—if, in other words, the criterion of trust is representational truth. When viewed as one material-semiotic actor among many others, however, the report is different: its aim is not primarily to be a statement of correct, factual representations or possibilities, nor does its representational faults diminish its ability to become effective in diverse and heterogeneous locations. How might we go about reading reports if the text is not a passive representative but an active traveler?[21] Rather than concentrating on the representational facade of the report, we consider its productivity (de Laet 2002; Latour 1993; Miller and Rose 1988; Mol and Berg 1994). If numerous business, educational, administrative, or medical practices are associated with the visions that are presented in *Digital Denmark*, then the vague and contradictory formulations on the level of the written text become the very strength that makes the report flexible and robust as it becomes linked with other practices (Jensen and Winthereik 2002). In an actor-network theory (ANT) phrase, the report facilitates "displacement without transformation" of the "formal" content of the report, but in a paradoxical way because the loose quality of the text renders ambiguous the determination of whether the text has been transformed in its displacement (Latour 1996). In this way, the effective domain of the report depends on textual flexibility as the property, which ensures that the report can partially connect with many heterogeneous practices (Granovetter 1973; Strathern 1995). If one considers *Digital Denmark* as a project aimed at engaging a very heterogeneous audience, this "impressionistic" information strategy becomes understandable, a point that we return to in the final section.

Reports travel between practices, and in doing so, they may partially link them. They establish effective domains that are only indirectly related to their formal, representational content. This indirect efficacy can be characterized as the positive unconscious of reports, and it is this aspect of textual efficacy that critiques of the representational (conscious, intentional) content of a text fail to grasp.

In this example, the world constructed in *Digital Denmark* is at first unrelated not only to the "real Denmark" in the abstract but also to specific local practices. However, it does not have to remain unrelated or incommensurable. As more work goes into constructing links between its vision and local practices, the *Digital Denmark* report becomes connected to a diversity of localities; we have only briefly discussed only one.

We have seen how the visions from *Digital Denmark* were appropriated and modified. They were translated in the process of becoming a material

part of the Danish infrastructure, and in this way, the report has worked as a partial building block in the network society.[22]

From this point of view, the idea and function of texts and textuality are displaced relative to cultural theory, not only because not everything is text but also because even texts are not merely texts. Even more surprising, texts are also virtual links between practices.

The Politics of Reading Strategies

In cultural theory, texts and reports are often carefully read and deciphered. However, these readings often remain on the level of content, and equal care is not taken to understand how and why texts are able to function pragmatically as links between practices. In such readings, the textual expression is taken seriously, but the written word is viewed skeptically, implying that there is something lacking. This lack may then be filled by a critical humanistic or social scientific analysis, which adds depth to the surface of the text. This often uncovers a text that is built on faulty assumptions or doubtful metaphysical or political commitments. The job of the analyst is to write an explication or commentary to the text, and "radicalness" is often measured by the depth of the critique that is offered.

As we have shown, an STS perspective moves in a different direction in which the text is viewed as a vehicle for traveling in practices. There is no depth to ascertain behind this principle; it is purely "superficial" or immanent. The text, as other actors, cannot get beyond the fact that it can survive only by multiplying links with others in material-semiotic networks.

From critical perspectives, it is easy to point to the naïveté of this reading strategy because it fails to uncover any of the motives and ideologies expected and sought in such theories. A defensive response to this line of attack would be to suggest that the argument presented here has been developed with the purpose of offering an alternative account of the efficacy of reports in the construction of political reality, not to make a complete theory of sociopolitical change.

But one could go further and emphasize (along with Bruno Latour 1987, 62) that it is not the result of ignorance that issues such as class or gender are not immediately raised in this reading:

> But I'd rather anticipate the objection of my (semiotic) reader. . . . "Where is capitalism, the proletarian classes, the battle of the sexes, the struggle for the emancipation of the races, Western culture, the strategies of wicked multinational corporations, the military establishment, the devious interests of

professional lobbies, the race for prestige and rewards among scientists? All these elements are social and this is what you did *not show* with all our texts, rhetorical tricks and technicalities!" I agree that we saw nothing of the kind. What I showed, however, was something much more obvious, much less far-fetched, much more pervasive than any of these traditional social actors. (Latour 1987, 62)

In this approach, it just might turn out to be the case that classically acknowledged actors (as listed by Latour) are responsible for the problems in the emerging network society.

Starting out with such a delimited set of relevant categories, however, makes inquiry particularly vulnerable to merely finding the same categories at play in practice. For this reason we view the analytical strategy of reading with rather than against texts, and suspending classical categories of social theory rather than looking for them, as a way of enhancing the possibility of becoming surprised by practice (as advocated in the earlier citation by Donna Haraway [1997, 190]). Obviously the attendant risk is our deprivation of off-the-shelf critical responses to observed situations.

We would like to venture another formulation as to the effect of reading with rather than against *Digital Denmark*. In this report, as in many other recent reports, there is a package, shiny in its vagueness, of ideas—balls thrown into the air, in the hope that someone will catch them—and formulations that are yet unfilled with any practical or even ideal content. Aside from any interest in esoteric debates on reading strategies in cultural and social theory, this way of presenting and organizing political argumentation seems to indicate a situation of radical change in contrast with the information politics of recent decades in which reports are presented as substantial, factual, neutral, and properly backed by scientific indicators.

Furthermore, contemporary reports such as *Digital Denmark* do not respect older categories and divisions; they (shamelessly) combine and mix the human and the technical, as when the new ITs are openly (albeit paradoxically) viewed as supporting and facilitating the free-standing individual—the universal man—in a celebratory manner that would make many a cyborg theorist pale in comparison.

If our observations are accurate and we are indeed witnessing a slippage in the style of policy documents and a change in information politics, then perhaps developing new analytical tools, with legacies that are not tied to understanding an earlier genre of political writing and manifestation, would seem legitimate. Indeed, a central aim of reading with the text is to facilitate the following of such processes of change in the construction of the Danish political and practical reality. As we have seen, this understanding of the report takes away some of its strength because it cannot be read as manifesting the

ideological structures of capitalism and sexism, or other such grand figures, but this does not render it powerless. Our reading of *Digital Denmark* suggests that texts add power to specific networks by allowing them to connect easily and durably. As politicians and their supervisors have noticed, such reports may paradoxically be good allies precisely because they are so flexible as to enable vastly different sets of actors and agendas to be connected through them.

When a goal is simultaneously as all-encompassing and as vague as moving toward the IT society, reports are good allies because they are so loose and abstract in content, but for the same reason, they are recoverable in innumerable settings. Thus, it makes sense to suggest that the agency responsible for the (painstaking) Danish conversion to the network society, not wholly human, must be located at the interface between humans and nonhumans, practices and texts.[23] It remains a large job to clarify such relationships and their stakes to facilitate their creative reformulation rather than to repeat a set of well-worn critical gestures. This would be a job for a score of Haraway's (1997) "mutated modest witnesses," among which we hope to be included.

Notes

1. As can be ascertained at the homepage of the Ministry of Science, Technology, and Development, there is an enormous amount of material (see http://www.fsk.dk/).

2. For example, see Dansk Institut for Sundhedsvæsen (1996) for a discussion of the implementation of an electronic patient record at Hvidovre Hospital.

3. This was published November 29, 1999 (available at http://www.fsk.dk/ [English translation was published February 11, 2000]).

4. In addition from Derrida's (1976; see also his elaboration in Derrida 1986) (in)famous statement, Lacan's (2001) theories of the structure of the unconscious as a language, Julia Kristeva's (1984) analyses of the relation between the symbolic and semiotic levels of language, and Roland Barthes's (1990) work on writing often serve as background for such approaches.

5. This is not so often the case in studies interested in taking deconstruction seriously as an analytical strategy, but this mode of reading is regularly encountered in the work of scholars who want to deconstruct with the ultimate purpose of getting a (classically) critical purchase on what they investigate.

6. See Rehling (1998).

7. See Rehling (1998).

8. "Magical properties" are often ascribed to the information technologies; here, it is assumed that more information technology (IT) equals more learning. This builds on a misunderstanding of how technologies spread and how they work as they do so (Bowker 1995; Latour 1986; Markussen and Olesen 2001).

9. To use feminist sociologist Leigh Star's (1994) phrase (which was adapted from A. N. Whitehead), we can talk of this conceptualization as a matter of "misplaced concretism."

10. Given the Scandinavian environment, which historically has encouraged activism and criticism, not least in the shape of feminist interventions, it may seem surprising that such

universalizing gestures have been allowed to pass without much more than a slight public buzz, but contextual Danish features clarify the situation. It is especially noteworthy that though gender politics has been a legitimate item for deliberation in the public and political spaces of other Scandinavian countries, it has not been so in Denmark, where debates on gender have come to be structured almost exclusively around the question of equal rights and opportunities. Danish feminists currently struggle to change this unfortunate situation. For instance, the question of how to do so was high on the agenda at recent meetings, such as Gender Makes a Difference—Gender Studies at the Cutting Edge of Europe (held in November 2002 in Copenhagen), which featured both international and local feminists and Danish women politicians.

11. One important reason is that critical readings implicitly locate the cultural theorist above the practices investigated. This implies a claim to know better than the local agents what is of concern and what is not in a setting where the researcher is externally situated (Stengers 1999). It is to assume that the authors of *Digital Denmark* (Danish Ministry of Research 1999) are "cultural dopes" (Garfinkel 1967). An STS reading works against this movement.

12. See The Lighthouse Centre (2005) at http://www.detdigitalenordjylland.dk/en/info__background/framework/.

13. See The Lighthouse Centre (2005) at http://www.detdigitalenordjylland.dk/en/info__background/framework/.

14. See The Lighthouse Centre (2005) at http://www.detdigitalenordjylland.dk/en/info__background/framework/.

15. Parts of the presentation we analyze are only available in Danish. When possible, we quote from the English version.

16. See The Lighthouse Centre (2005) at http://www.detdigitalenordjylland.dk/en/themes/education/the_theme_of_qualification_and_education_01.htm.

17. See The Lighthouse Centre (2005) at http://www.detdigitalenordjylland.dk/en/info__background/projects/education/qualification_and_education.htm. ICT is an acronym for information and communication technologies, and SOSU stands for health and social welfare trainees (social og sundhedshjælper).

18. See The Lighthouse Centre (2005) at http://www.detdigitalenordjylland.dk/en/info__background/projects/education/ict_qualifying_and_virtual_learning_in_the_sosu_education.htm.

19. See The Lighthouse Centre (2005) at http://www.detdigitalenordjylland.dk/en/info__background/projects/education/ict_qualifying_and_virtual_learning_in_the_sosu_education.htm.

20. Our translation. See The Lighthouse Centre (2005) at http://www.detdigitalenordjylland.dk/dk/projektpartnere/dagbogs_indlaeg.htm?iProjectID=1032100497853&iProjectDiaryID=1032100006299.

21. For a classical critique of the representational belief in the "glassy essence" of subjects and objects, see Rorty (1979). The view presented herein is inspired by Deleuze (1994). For an STS angle, see Berg (1996).

22. For a further discussion of the construction of complicated infrastructural ecologies see, Star (1989) and Bowker and Star (1999).

23. This formulation is inspired by Andrew Pickering (forthcoming, 45): "The historical actions in this story . . . is centred neither within nature itself, nor within society, but at the interface of the social and the nonsocial, the human and the nonhuman." Of course, we are not claiming that texts are the only nonhumans involved in these transformation processes. Rather, we propose more research into the many different ways in which humans and nonhumans share and distribute agency.

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