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The Ironies of Digital Citizenship: Educational Imaginaries and Digital Losers Across Three Decades

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The ironies of digital citizenship: educational imaginaries and digital losers across three decades

Abstract

Our everyday use of digital technologies, platforms and infrastructures is often portrayed as an autonomous technical development, guided by clever and independent innovations, rather than broad sociotechnical imaginaries that inspire parliamentary support and governance. This article will consequently shed the light on the often-overlooked structural and societal efforts that have historically shaped the digital citizen of today. For the past 70 years or so, non-formal adult education about computers and computing has been a key part of political ambitions to create a desirable future. Over time, digital technologies have also become a precondition for the enactment of citizenship. That is, ‘digital citizenship’ is increasingly positioned as a fundamental requirement for democratic participation. The purpose of this paper is to trace how the digital citizen, and its accompanying problems, has been construed over time, particularly through educational imaginaries. What problems is the digital citizen a solution to? *Who* has been presented as problematic, and who, subsequently, has become the primary target for educational solutions? *What skills* have been described as indispensable for the digital citizen during different periods in history? By using Sweden as a vantage point this paper provides both concrete examples as well as perspectives on transnational discourses. In focus for the study are discourses concerning non-formal adult education, in the form of awareness campaigns, social programmes and adult liberal education about computers aimed at the general citizenry, during three periods in time: the 1950s, the 1980s, and today. The contribution is a critical take on how the citizen has increasingly become connected to digital technologies, and how this convergence has at the same time created digital exclusion.

Keywords: digital citizenship; popular education; participatory engagement; algorithmic governance, computer history; computer policies, educational imaginaries.

Introduction

Over fifty years ago—in 1962—at a lecture at MIT, C. P. Snow predicted three perils of computerization. The first was the establishment of a new elite, which he referred to as ‘the computer boys’. The second, Snow called ‘the gadget charm’, which he described as follows:

Cybernetics, as named by its founder, is a beautiful subject with great intellectual variety, depth and complexity. I suspect, however, that the computer in certain hands could easily become a gadget. Gadgets are the greatest single source of misjudgement that I have ever seen, or that anyone has ever seen in scientific decisions in our time. People get fascinated by gadgets. They love them. They want everything to be explained in terms of their gadget. They think it is the answer to everything on heaven and earth. All the bad decisions I have seen have some elements of gadgetry in them. (Snow, 1962, p. 12)

The third peril of computerization was what Snow described as ‘Society left outside’. This referred to the risk that if broad groups in society were being left out of important decision-making, they would experience that decisions were being taken ‘above their heads’ and opt out.

Despite this criticism of computerization, a future without computers was considered unthinkable. Norbert Wiener (commonly regarded as the father of cybernetics) stressed, in the discussion that followed Snow’s lecture: ‘There is one thing about the machine; the machine habit is like the liquor habit. If we drink enough of it, and we already have, it is an awfully hard thing to stop’ (1962, p. 28). This statement may seem anecdotal, amusing, and perhaps of little importance today, but its significance for this article is that we need to study historical views on the shaping of technologies and society in order to put today’s assumptions into a new light. Often, technologies are described in terms of the functions they can perform and that in order to realize their benefit or impact, we only need to understand these capacities. But computers cannot be reduced to their algorithms or their uses. Neither are they only processors and memories. Admittedly, sociotechnical imaginaries (Jasanoff, 2015) about computers are very much contingent on what specific machines of the specific time could, or could not, do, but even more so, they become a question of what computers could, or could not, potentially realize, and what these visions in turn generate in terms of foreseen possibilities and threats. Having said that, these techno-political negotiations often become artefactual, in that technical artefacts become focal points for promises of freedom, democracy or social justice. Machines and material structures embody particular forms of power and authority, and consequently have political qualities, and fundamentally change the experience of citizenship (Winner, 1980). At the same time, computing is also a question of how to organize, control and govern citizens in a desired *future society*. Today, changing the present conditions is often regarded as a viable political strategy for the future. That is, looking to the future is something that in itself is seen as both desired and necessary (Urry, 2016). Raymond Williams suggested more than 30 years ago that implementation of digital technology is always coloured by a particular vision of the future. However, Williams argues, this vision is increasingly clouded. Instead of looking to positive goals and utopias, socio-technical development has become guided by something he refers to as Plan X (where X is a variable literally referring to the unknown). Plan X envelops a darker future—one where human-made disasters are common. Plan X is well aware of these future crises, but instead of trying to change things for collective improvement, it is characterized by an individual aspiration to escape as unharmed as possible. The single most important goal for Plan X is

thus the gaining of short-sighted, competitive and strategic benefits, so that you are always one step ahead of the competition. The Plan X concept raises questions about what strategies and imaginaries that are at play today. As Susan Leigh Star stresses, “within the realm of human-machine-intermingling, an important question to begin with, is *cui bono?*”¹ (Star, 1991, p. 47). Such a perspective puts emphasis on acts of inclusion and exclusion—what is considered good or bad, sufficient or insufficient, normal or deviant—and what kind of power asymmetries that emerge in such enactments.

As such, “loser” is here to be understood as a figuration (Haraway, 1992) of historical contingencies—groups who, through different governing methods, need to be adapted and regulated. That is, there is a power asymmetry built into the dichotomy of winners and losers, where winners become symbols of the desirable normalcy. When issues of power are individualized and delimited to winners and losers, or the digitally included or excluded, many other issues are obscured. Lani Guinier (2002) illustrates this phenomenon with a story of a number of children competing against each other in a simple game for kids. Boys and girls competed against each other, and the girls repeatedly won. Adults, observing the game, soon began to try to deconstruct the game to find out why the girls were winning; were they really better than the boys? Were they more team-oriented, or did they have better motor skills? What was wrong with the boys? Discussions went on for a while until a grandmother of one of the children interrupted the debate, asking “Who designed the game?” The point of this example is that we tend to focus on who is winning and who is losing (and how to “fix” the losers). Rarely do we ask ourselves, who made the rules of the game we are playing, and even more rarely do we ask what is the story we tell losers, to get them to want to continue playing.

The aim of this article is therefore to explore how the digital citizen has been imagined as someone normal and desirable, while concurrently creating someone anomalous and disqualified. By taking Sweden as a starting point, and looking towards transnational imaginaries, this article seeks to investigate how state-funded, non-formal adult education, in the form of awareness campaigns, social programmes and liberal adult education about computers, has historically been assigned to fix (imagined) problems, and to consequently shape the digital citizen of today. Two main questions are posed: firstly, *who* is historically imagined as in danger of becoming losers in the future, and subsequently, who becomes the primary target for educational solutions; and secondly, *what skills* are described as indispensable for the digital citizen in these different times? Thus, the article will explore how the concept and political reality of the ‘digital citizen’ has emerged through a historical relation between non-formal adult education and sociotechnical imaginaries of an increasingly computerized future.

¹ to whose benefit

Concepts and considerations

Jasanoff (2015) describes how sociotechnical imaginaries is a key dimension of modernity which is gaining theoretical and analytical traction in the social sciences, including anthropology, sociology and political theory. Sociotechnical imaginaries can help us to transcend previous binaries between ‘descriptive and normative, structure and agency, material and mental, local and translocal’ (2015, p. 323), but also between what *is*, and the alternatives that *could have been*. In Jasanoff’s definition, sociotechnical imaginaries are:

[...] collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology. (p. 19)

The notion of sociotechnical imaginaries is related to the concepts of discourse and ideology. However, it also envelops both these concepts by more clearly including a potential for dynamic performance and materialization through technology (or other means). As such, sociotechnical imaginaries propose that societal and social discourses can be seen as an integral part of the development of technical systems (Flichy, 2007). One crucial part of these discourses is the political dialogue with (and between) citizens, and how these debates are organized in society (Felt, 2015). Importantly, these debates emerge in many different places, as the stakeholders can be numerous and diverse. Further, the discourses can appear in several forms, ranging from public debates and TV shows to concrete political initiatives and experimental designs, emphasizing the importance of empirical diversity. Still, to bring focus, Flichy points to two main function of the technical ‘imaginaire’:

[...] building the identity of a social group or a society, and providing resources that can be reinvested in the preparation and implementation of projects. (p. 208).

In the light of these functions, this paper seeks to explore the co-construction of overlaps between technical and, what I will call, *educational imaginaries*.

Sweden, along with the other Nordic countries, has a long tradition of high rates of participation in liberal adult education. In one year, 72 percent of the adult Swedish population take part in some kind of education. This is the highest figure in the EU. Of these 72 percent, 67 percent take part in non-formal adult education (Statistics Sweden, 2014). Swedish liberal adult education has historically been dominated by social movements, where the concept of ‘bildung’ rather than schooling is forefronted. These educational forms are described as participant-centred and aimed at increasing civil participation, inclusion and democratization (Laginder, Nordvall, & Crowther, 2013; Pastuhov & Rusk, 2018). While liberal adult education rests on the notion of being ‘free and voluntary’ (Government Bill, 1990/91:82), it has, in practice, been unquestionably reliant on state support. Consequently, the Swedish government has, from time to time, been able to compel liberal adult education

associations to perform particular political-educational undertakings to ‘shape’ future citizens (Berg & Edquist, 2017; Edquist, 2015).

Citizenship, in turn, is often described as the rights and obligations of living as an adequate member of society in a state (Marshall 1950). Today, citizens are increasingly connected to ‘the digital’. Digital citizenship can thus be regarded as a form of extended citizenship going beyond the national state, and incorporating the individual in a political community, as someone that can be seen and heard. That is, as someone who has proper access to both digital-material resources and abilities to participate in society and its political venues (Lindgren, 2017). As such, digital citizenship has been defined as the overall capacity to participate in online society (Mossberger, Tolbert, & McNeal, 2007). Digital citizenship is also connected to people’s enactments in creating and performing their identity and their role in society via digital technologies (Hintz, Dencik, & Wahl-Jorgensen, 2017; Isin & Ruppert, 2015). Further, digital citizenship is often connected to citizen engagement and participation for change (Mosco, 2017). As such, digital citizenship can be described as a way for governing instances to ‘update democracy’ (Tolbert & Mcneal, 2003). While proponents of technology often make these claims, there is no clear and unifying theory that explains if, and how, digital media technologies actually increase engagement or improve democracy, perhaps because digital citizenship can also be described as a double-edged sword, where citizens’ opinions, levels of engagement, and sites of activism and commitment are more visible, trackable, and easy to analyze. When an increasing amount of decisions are outsourced to algorithms, and when this control is made invisible through an embedding of normalized technology, research is needed to critically review digital citizenship. Not only to explore and explain aspects of current digital citizens, but also to address *how the citizen became digital*, and what role *education* has had (or not had) in this convergence. Furthermore, the question of *who* has been made a target of educational efforts becomes particularly interesting. Education has often been described as the means through which the best possible future can be shaped, and how potential threat scenarios can best be addressed. From this perspective, imaginaries and negotiations around computerization can be understood as a form of governance aimed at *different* parts of the population. This governance construes a desired citizen who is ready to face the future: the digital citizen.

Method and material

Drawing on Foucault's genealogical approach (Foucault, 1983, 1984, 1991), sociotechnical imaginaries of digital citizenship are here seen as comprising objects of analysis from which contemporary beliefs can be gleaned. Genealogy is, however, not a method for revealing the historical origin of a phenomenon, rather genealogy (and origin) can be understood ironically, where its purpose is to reveal the multitude of momentary scenes where activities and ideas are shaped. A genealogical approach is a form of critical analysis that asks what forces, connections and articulations make certain things appear natural and inevitable? What processes, procedures and artefacts have laid the foundation for truths and knowledge that we take for granted? A policy can be described as a programme, or a course of action, which is shaped in a specific historical and national (or transnational) context. Policies are often construed in order to fix things, something or someone, and as such, there is a (set of) problem(s) that needs to be addressed and changed. Problem and solution thereby configure each other in that policies can be seen as result of a formation and definition of problems (a problematization process). Problematizations are central to governing forces, and consequently these problematizations become methodological points of entry (Bacchi, 2009). A genealogical analysis of problematizations seeks, like Foucault also suggests, 'to reestablish the various systems of subjection: not the anticipatory power of meaning, but the hazardous play of domination' (Foucault, 1984, p. 83). This paper examines problematizations as the historical co-constitution of imaginaries, knowledges and power-configurations, which still impact on society today.

The article has its starting point in Sweden, but also makes certain transnational outlooks in order to compare problematizations. With Sweden's history of digitization, and its mass educational efforts in computerization, it becomes a particularly interesting starting point when it comes to mapping out the genealogy of the digital citizen. In international comparison, Sweden has been a pioneer in digitization (Lindkvist, 1984). Swedish computer politics has often been compared to the U.S. equivalent, as both governments were early in embracing and promoting computers, often in collaborations with large enterprises (Cortada, 2012). In the 1960s, the Swedish state was the largest buyer of computers and computer peripherals in Europe, and during the 1980s the Swedish population had the highest rating of computer owners per capita in the world (Swedish National Agency for Education, 1985). Even today, Swedes are a highly digitized people with a penetration rate close to 100 percent, as regards internet use (Davidsson & Thoreson, 2017).

Documents from three eras have been selected and studied. The material consists of reports, research documents and policies aimed at governing computerization (13 propositions, action programmes, and reports; 15 paper articles; and 5 conference/congress reports, totalling about

2,600 pages). The analysis involves gradual and careful reading of all the text, and reflection on how the research questions are expressed in the material. The debate about the impact of automation really gets going in the mid 1950s, which limits the study retrospectively. The mid 1950s represents an era where the computer is seen as a catalyst for the good future, and where education is shaped accordingly (Blomkvist, 1999; Blomkvist & Kaijser, 1998; Sandström, 1989). The second time period spans from 1982 to 1985, which also represents a time of deterministic optimism. During this period, the Swedish government decides to make several large-scale efforts to educate *each and every* adult citizen about computers (Glimell, 1989; Kaiserfeld, 1996; Laginder, 1989). The third chosen time period is the present day, again representing a strong optimistic belief in computing and its societal effects. The full study of these three time periods puts particular focus on what skills were seen as necessary for digital citizenship, and who were regarded as (potential) future “losers” in relation to these skillsets.

Imaginarities of the 1950s: automation and the future of society

The 1950s is often described as the second industrial revolution, sometimes seen as characterized by “the three As”: Atomic power; Automation²; and Astronautics (Sandström, 1989). These three fields were described as the cause of a new industrial revolution (and a better future for all). The British Department of Scientific and Industrial Research (1956) declared that in a state of full automation, the human workforce is only required as maintainers of the machines. The threat, as it was described, was not one of computerization as such, but rather one of non-computerization, or of not computerizing fast enough (Dobinson, 1957). The automated future was seen as increasing wealth, decreasing workloads, and creating more spare time for everyone.

This articulation can be seen as a form of pure faith in the technological future. Automation is described as a mighty tool in the service of rationalization. It would increase productivity, and thereby provide a route towards increased well-being, increased consumption, more spare time and a richer personal life for the masses (Velandar, 1956). Automation was said to bring large and fast increases in quality of life, including also increased pay and democratized possibilities for education (Ivre, 1956). Put succinctly, automation would very soon create a better world, for everyone (Swedish Social Democratic Party, 1956; Swedish Social Democratic Party & Swedish Trade Union Confederation, 1956). However, there was one big problem: this new high-tech society would also require more technically knowledgeable people than ever before, because ‘once you move from primitive operation to automation, strength and endurance become less important, and intelligence and specialist skills become more crucial’ (Velandar, 1956). This meant that people needed to be educated (Dobinson, 1957; Swedish Social Democratic Party & Swedish Trade Union Confederation, 1956). At the time, recruitment to education was more contingent on socioeconomic preconditions than on intellectual potential. Consequently, politicians envisioned a certain ‘educational reserve’ among the population. The question was however if the imagined reserve was big enough, both in terms of quantity and quality. Sociological calculations were made, concluding that the reserve would in fact be sufficient to meet the demands of automation (Idenburg, 1957).

The Swedish committee of the social situation of students (Ministry of Education, 1952), showed that the pursuit of a higher education was dependent on factors such as place of residence, economy and social status. In other words, social class ordered recruitment for higher education. The writers of the report identified a reserve of people, potentially suitable for education, but who, for the reasons above, had not been able to get an education.

² Automation was described as an automated process entailing at least one electronic brain, i.e. a notion equivalent to computerization in some form

Consequently, new techniques such as intelligence tests were developed in order to identify individuals appropriate for education. Skill, in combination with personal aptitude, was seen as more important than prior education. Knowledge was described as something that could always be acquired, in contrast to the ability to follow abstract reasoning and survey a great number of separate facts, which required inherent intellectual capacity (Ministry of Education, 1952).

The discourse relating to the importance of recruiting from ‘new’ social classes can also be found in international contexts. In 1957, the scientific journal *International Review of Education*, published by UNESCO, devoted a special issue to automation and education. In the article “The call for men”, statistician and educator P. J. Idenburg calls for a more systematic search for talent in order to ‘add the gifted boys’ to education. The educational reserve approach would allow for twice as many (boys) to be recruited to education compared to previously; again it was just a question of finding the most suitable candidates. Thus, in the 1950s, the future of automation was not only about educating *more* people than before, it was also about changing the shape and form of work. Idenburg predicted that ‘mind-deadening’ and fractioned work would disappear and ‘the debasement of human labor to a function in a mechanical apparatus will come to an end’ (Idenburg, 1957, p. 414). Idenburg advocated that the role of education had to be one which is less culturally conservative, and instead supportive of creativity, fantasy and intuition.

Besides the need to educate more people to handle the sophisticated machines, automation was described at the same time as creating more free time. That is, more tasks would be computerized, which would generate not only an increase in well-being, but a decrease in work hours. However, this creation of free time was also described to suffer from a form of dehumanization, where automated production would require a standardized and automated level of consumption. Schools were construed as having an important role here, to not aim only at ‘Bildung’, but also at ‘Leistung’, at training in the skills needed to ‘master life in nature and in the world of men’ (Idenburg, 1957, p. 418). Consequently, passive citizens were construed as a potential danger, and they needed to be activated through meaningful spare time so that they do not end up being dependent on others or left to the powers of commercial consumption. Commercials from the motor industry, chocolate factories, weekly magazines, and the entertainment industry were seen as potential threats (Ivre, 1956). A potential increase of artificial stimulants, such as painkillers, antidepressants, tobacco and alcohol was also envisioned (Lundquist, 1956). Thus, liberal adult education was construed as important in counteracting the power of commercials and other ‘enticing’ spare-time activities (Heffler, 1956).

Articulations of the need to reshape citizens in the face of an automated society are thus common to, and similar in, both the Swedish material and in transnational discourses. Education had to not only create more appropriately skilled workers, but to also re-educate

them as citizens. In this spirit, Alton S. Householder argued in the paper 'Education for Automation' that education should focus on 'three new Rs'. Instead of Reading, wRiting and aRithmetics, education should now be about "Reliability, Responsibility and Righteousness" (Householder, 1957, p. 51). Because automation relied much on the responsibility of their users, it was also necessary for them to be reliable and righteous as well. Education should therefore also be a process of *character building*; workers should be good citizens, making use of their new affluence in conscientious ways. Further, it had to prepare people for a future that would change at a much higher pace than ever before (Swedish Social Democratic Party, 1956), and citizens needed to maintain their independence from automation. Ambitions went beyond the education of a skilled workforce, and pertained more to a new form of citizen, still noticeably in relation to automation.

The losers of the 1950s

The search for the right individuals, suitable for education, also created a problem in itself – what was supposed to happen to the unsuitable ones, when even the simplest tasks would now be performed by machines? With unmistakable articulations of worry, debates pondered how to handle this tendency. This issue was addressed through 'mental hygiene'. That is, an increasing emphasis was put on personality and temper. The misfits (psychological and physical) between people and automation were seen as increasing. More research on the adaption of workers (instead of having to prescribe an increasing amount of sedatives) was construed as necessary. Psychologists and psychiatrists were employed by industries to assess suitability in relation to different work tasks. Even tasks that are not physically demanding can be psychologically fatiguing for a 'sensitive personality', it was argued. Various assessments were developed to make sure the right job was given to the right individual, which would also prevent 'work life neuroses' (Borg, 1956). These work life neuroses were perceived as a risk since:

[...] the many roles in our complicated society can be stimulating for some and make others neurotic. It was regarded as likely that many were pressured by the chase for success, or social prestige, or by the fear of not being able to demonstrate a sufficient standard of living' (Lindblom, 1956, p. 191).

So, while more psychological science was perceived as necessary for adapting the unsuitable, more progressive general educational reforms were also requested (Biörck, 1956).

At a Swedish Trade Union conference, the role of women is also discussed: 'A long-term issue is what will happen to women in a technology-permeated society. Female personnel might have to be re-educated as engineers' (Adamsson, 1956, p. 98). What the scenario envisioned as most likely, however, was that there would be a future for low-skilled work, even in a fully automated society. Still, even if this would not be the case, some claimed that this might still be beneficial to society, since the number of young, married and working

mothers with latchkey children would diminish (Dobinson, 1957). In a Swedish context, aspects of egalitarianism and equality were still stressed. Even though women were regarded as (more or less) intellectually equal to men, they were still often relegated to simpler and more monotonous tasks. One way to remedy this was to make legal room for part-time and distance work (Svensson, 1956). As such, women were conditionally included in the automated future – they were often not included in the groups most suitable for further education, but at the same time they could rest assured that automation would still retain more simple and undemanding tasks, suitable for women.

To conclude, in the 1950s there was a strong optimism about technology. Although a growing need for an educated labour force was depicted in order to secure a better future, differences in talent, capacity and intelligence were described as influencing opportunities in the future. Through scientific methods the most suitable could be found, and this would be fairer than if economic conditions determined an individual's opportunities. The educational reserve of the 1950s was already 'computerized' by being subjected to (technological) measures of aptitude. This view, that aptitude and ability should determine the prospects of the individual, was, of course, deeply intersectionally structured (based on an able-bodied male hegemony). Even though there was great coherence in terms of hopes for technology and automated society, there was also a certain concern regarding the adaptation of workers. The fears were mostly centred on the ability to educate the necessary amount, and right types, of people. Liberal adult education should also act to foster citizens and as a way of dealing with increased spare time, in order to preserve morale, sympathy and stability in the computerized future. Women and "low-talented" people were problematized as others, but in different ways. Through computerization women were described as having increased opportunities to combine work and care and thus (conditionally) take part in the better future. The 'losers' of deindustrialization were specially targeted for 'adjustment' via social reforms and political actions. The mission of the welfare state was to make sure that individuals can reach their full potential, while simultaneously realizing the good future for the nation as a whole. Everyone was seen as being in need of some adjustment once the future arrived, but the end goal of automation and new technologies was described as creating happier citizens and a more prosperous society for all.

Imagines of the 1980s: computerization and citizen education

The combined techno-determinist and techno-optimist views that coloured the 1950s returned in new forms during the 1980s. For example, the streamlining-friendly techno-politics of the Swedish Trade Union Confederation in the 1950s were re-used as a benchmark for the direction and content of the computer politics of the 1980s. It was imagined that very soon, computers would become so small, inexpensive and powerful that they would completely

permeate people's everyday lives. Computing power would be integrated in all home electronics, and searching for information in online databases would become very common (Government Bill, 1984).

In Britain, the Conservative government played, throughout the 1980s, an important part in introducing both youth and adults to the microcomputer (Selwyn, 2002). In a way, government initiatives of the time also became efforts to re-establish Britain's place as a computer-technological innovator on the global market. In 1981, newly appointed Minister of State for Industry and Information Technology, Kenneth Baker, began producing an outline for a National Strategy for Information Technology:

As well as revitalising the British IT industry, the other strand of the emerging Conservative policy agenda was focused on 're-educating' the British population about the potential of IT. Here, the young (or 'the keyboard generation', as they were often referred to in government rhetoric) were seen as primary target. (Selwyn, 2002, p. 431)

However, the main effort, directed at both young and adult learners, was the BBC Computer Literacy Project, which ran from 1979 to 1983:

The success of the Computer Literacy Project is manifest. Twenty television programs have been shown both to adults at home and schools, and seen by millions of people of all ages. An array of books and computer programs have been published, which have sold in hundreds of thousands. Over two hundred thousand British Broadcasting Corporation Microcomputers soon found their way into homes, schools and businesses, and many thousands of people joined computer classes and clubs (Singer, 1983).

One year later, and with similar ambitions, the Swedish Social Democratic government initiated an educational effort intended to reach the entire adult population: the *Broad Computer Training in EDP* (electronic data processing). The broad computer education was (at the time) the largest educational reform ever implemented in Sweden. This effort included a basic orientation comprising 80 hours of effective training. That the state organized this form of computer education was seen as an effective method of governance. Also, computer education was imagined as too important to be left in hands of commercial actors (Abrahamsson, 1985). At the same time, it was described as important from an equality and democracy perspective, where 'all citizens in society must be given equal opportunities to make use of the benefits of new technologies' (Commission for Informatics Policy [Datadelegationen], 1985, p. 9). The future was described as belonging to computer-savvy young people, and if adults did not also learn about computers, they ran the risk of becoming a lost generation (Ministry of Labour, 1985). The entire citizenry was thus described as in dire need of computer education. While this form of mass education was supposed to take place in people's spare time (as well as being free and voluntary) it was also imagined as firmly integrated in working life.

The content of the education initiative was described as a mixture of citizen education and computer skills. An explicit requirement by the government declared that any educational efforts regarding computers must also discuss potential *societal* effects of computers. Apart from dealing with societal effects of computerization, it was also imagined as important that the course material included examples of democratic uses of computers. It was emphasized how ‘it is possible that the generation of an idea (or a utopia) constitutes an important driving force in the development of different computer applications. From that perspective, the material contains too few, rather than too many, utopias.’ (Commission for Informatics Policy [Datadelegationen], 1985, p. 76). A simple course in (the programming language) BASIC, for example, was described as not providing enough grounds to build an informed position on computerization—questioning that ‘zeroes/ones, bits, chips and simple code snippets would provide an insight into what computers and computerization is’ (Commission for Informatics Policy [Datadelegationen], 1985, p. 106). Specific technical insights (i.e. depth) were not seen as important as broad knowledge about computers in society. The question of providing meaningful spare time, as a compensation for potentially mind-numbing jobs, was now rejected, and the need for meaningful *jobs* was instead stressed. The increasingly computerized future was imagined as consisting of more new tasks, and more surveillance, which required increased internal work motivation. Computer education thus had to bolster new characteristics such as a sense of order, calmness, intuitivism and stability (Ministry of Employment, 1984).

In both the Swedish and British initiatives, the notion of ‘not falling behind’ was prevalent, and arguments that microcomputers should be accepted into all walks of life were common. It was described as important to be educated about computers, in order to counteract the potentially overwhelming power of computing, as well as making sure that citizens and the nation as a whole did not lag behind. Even at a transnational policy level, the risk of (Europe) lagging behind in a computerized future world was stressed. The Commission of the European Communities concluded that its member states were already far behind Japan and the United States, and now had to quickly catch up. Standardization, increased competition and education were imagined as the most important means of achieving this goal (Ramsey, 1981). Similarly, UNESCO stressed that the impending major impact on society and adult education of rapid technological change requires retraining and the acquisition of ‘new forms of literacy’, especially ‘computer literacy’ (UNESCO, 1985, p. 29).

In 1986, the UNESCO journal *International Review of Education* again published a special issue on computers. The message in this issue was that media technology in education could only be successful if it is accepted by the users. It further detailed that computers and media now pervaded most educational setting around the world. New information technology was described as offering new perspectives on old problems, but the most important effect of digital media technology in education was that it forced people to stop and think: ‘Is there a better way?’ (Plomp & Ely, 1986, p. 230). Digital media technology was also described as

requiring new organizational structures in order to meet more sophisticated 'data-handling' (Dichanz, 1986). Notably, one of the articles highlighted the BBC computer literacy project as an educational effort that 'makes distinctions between formal, non-formal and informal education meaningless for most purposes' (Twining, 1986, p. 295). The author of the BBC course book *Inside Information*, Jacquetta Megarry, also illustrated a possible future scenario where computer technology would make lifelong learning easy:

While at school, each student is given an individualised 'lifelong' learning record. Robust and tamper-proof, it is the size of a credit card and is unique to the individual encoded with digitised photograph or fingerprints, for example. In conjunction with a Personal Identification Number (which can be changed or withdrawn in case of loss or misuse) this unlocks a universal system of open- access vocational education. Each student can choose to present this card on each occasion of taking any kind of assessment (or can elect not to). The date and result (pass/fail or profile) of the assessment would be added to the individual's cumulative record which is stored on the card. (A copy of the details is also retained on a central archive and updated whenever an assessment is made. If necessary a portion of the assessment fee finances the retention of these records in case of loss or destruction of the card.) Directories of opportunities are available in schools, colleges, community centres and homes, perhaps through Prestel (the UK viewdata system) and/or cable TV. (Twining, 1986, p. 309)

Drawing from the BBC computer literacy project and the above future scenario, it was imagined that information technology would have the potential to provide virtually any educational requirement that the human mind could imagine, since 'technology will look after itself' (Twining, 1986, p. 310).

The losers of the 1980s

The educational efforts described above were many times aimed towards the entire population. The British BBC project targeted youth, but with its wide broadcasting and market ambitions it also included adults. The Swedish government stressed the need to quickly educate the entire body of citizens, but particularly important were the groups who showed the least interest in computerization, as well as those who were less educated in general (Government Bill, 1981). The groups imagined were women (especially blue-collar and migrant women), but also people with special needs. Women, if they were not provided with real influence in computerization processes, were specifically imagined as in the risk zone of becoming the 'computer illiterates' of the future (Commission for Informatics Policy [Datadelegationen], 1985, p. 66).

Broad computer education was a voluntary initiative aimed at all citizens, something which was seen as necessary for grounding the effort with the common man. At the same time, this was seen as a problem since the education may then not reach those most targeted. The government decided to initiate a special computer course, where low-skilled workers were offered to take the course during work hours, with kept pay. Low-skilled women were

especially pin-pointed and recruited by outreach strategies, and in certain workplaces *all* women participated in the course. The fact that the Swedish government especially targeted low-skilled women for computer education could be connected to a study visit to the United States, organized by the Swedish Data Commission. One of the delegates from the Swedish Trade Union reported:

We got to see much more advanced applications than we are used to at home. We were shown refined technology networks, including powerful micro computers as well as colossal data giants, pushing information between people and locations, so that a small elite got more milk and honey, in the form of better knowledge, better overview and more power (Swedish Trade Union Confederation, 1983, p. 21).

In the report from the study visit, the U.S. was described as a high-tech nation, but also as a nation where a minority of people are knowledgeable about computers and have access to all information. Delegates expressed that in McDonald's restaurants, the girls (sic) no longer had to know how to read or write, they just pressed icons on a keyboard. The report raised the question that if computers increased knowledge, whose knowledge was it? The U.S. was consequently not regarded as a good role model for Sweden. Instead, a model where everyone had a right to knowledge and information was promoted (Swedish Trade Union Confederation, 1983).

To summarize, during the 1980s education about computers (and in computing), as well as about societal effect of computers, was the imagined solution for increased future prosperity for all citizens, as well as the nation as a whole. As will be illustrated in the next chapter, adult liberal education was still described as a silver bullet solution to problems caused by digitalization, although the general citizenry was no longer the target, but the few "left behind".

Imaginations of today: framing non-users as non-citizens

Today there is a large political consensus concerning the necessity of digitalization. One exception seems to be American President Donald Trump, who in 2016 told reporters 'I think that computers have complicated lives very greatly', and continued 'The whole age of [the] computer has made it where nobody knows exactly what's going on'. (Hincks, 2016). Trump's statements quickly went viral and rather effectively illustrate what Michel Foucault has depicted as a 'monster in the discourse' (Foucault, 1996). Donald Trump's statement can be described as a discourse monster because the statement was met with strong accusations of absurdity, and seen as a Luddite attempt to discredit technology. The statement was also framed as a way to illustrate how wacky and incongruous president Trump is. At the same time, the public response, pointing to the attributed absurdity of the statement, shows how strong the digital imperative is in current global discourses. Despite societal debates of so-

called fictitious facts, filter bubbles, or how private data is used without our consent and sold to companies seeking to market products and influence our opinions, there is much confidence that digital is a solution to almost anything.

One example is how the British Digital Skills Committee recently argued that internet access should be regarded as a fundamental human need, much like water or electricity, because digital skills will ‘make or break’ the UK (House of Lords, 2015, p. 1). Today, access to the internet is, in fact, considered a fundamental human right (United Nations, 2016). Some studies even suggest that the use of digital media has measurable effects on citizens’ living benefits, health and economic well-being (Tinder Foundation, 2016).

Similar reasoning can be found in the ‘Digital agenda’ of the European Union, where ‘lagging behind’ is (again) described as a serious problem since the digital economy is presented as growing exponentially, and that, in the future, nine out of ten jobs will require digital skills (European Commission, 2014). The (notion of) digital progress seems to result in a societal “skill lag”. Thus, lagging behind is problematized in terms of (potential) negative economic effects. However, the digital is not only put forward as a way to increase economic growth, but also as the best (and many times, only) solution to other future, and contemporary, problems. For example, due to the growing aging population, and due to new and more expensive medical treatments, health and social care costs will rise sharply in the coming years. Therefore, the Commission stresses that e-health initiatives will be critical to keep healthcare affordable and accessible. Robots are also described as a solution to an increasingly older (and more expensive) population. Social robots are depicted as a help in managing everyday chores, but also, through cameras and alarms, they increase both surveillance and security.

Digitization is thus described as a solution to both current and future problems. The biggest worry in realizing this vision, is (again) described as the lack of digital knowledge. The reason for this is that digital skills are required in order to participate in society. Still, only about 50% of Europeans are seen as reaching sufficient levels of digital skills (OECD, 2016). Thus, the overall aim of the agenda is to get every European sufficiently skilled, often through something generally described as ‘digital inclusion’. Digital inclusion will allegedly lead to personal improvement on social, educational, political and financial levels. Digital skills are also described as one of eight key competencies for lifelong learning (The European Parliament and The Council of the European Union, 2006) and as a prioritized knowledge that everyone (in Europe) should acquire in an information society where “people are the most important capital”. The EU particularly emphasizes competencies such as entrepreneurship, learning-to-learn, and digital skills as necessary for participation, growth and innovation. Computational thinking is seen as a key skill, along with numeracy and literacy.

Another example is the EU's General Data Protection Regulation that went into force on 25 May 2018, and which, for example, gives citizens extended rights to question the decision of automated or artificially algorithmic systems. However, the law is articulated such that in practice it only gives the right to obtain *information* regarding the grounds on which automated decisions are taken (Wachter, Mittelstadt, & Floridi, 2017), something that might require extensive skills (and time) in decoding. It is one thing to have the right to say no, quite another to have the right to information, because information requires knowledge to be understood or contested.

Losers of today

Today, we are digital citizens because we interact with our social and our political data-driven environment, but also, many aspects of citizenship are being framed as already digital. Digital citizenship has become the default mode. Therefore the non-user of digital technologies is positioned as outside society, unable to enact citizenship. The corresponding political goal becomes to get everyone digitally included. As such, non-formal education efforts show an almost reverse logic: the people targeted for such efforts are people who are already on the edge of society, they just need to be reshaped as digital to become citizens (again). Efforts are directed towards what is often described as the most vulnerable people: newly arrived, homeless, people with mental health needs, carers and the elderly. The rest of the population does not need to learn computer skills (any more). They are already digital. However, with increased use new problems arise and new kinds of skills are required.

When digital media technologies become increasingly ubiquitous, focus often shifts towards *how* technologies are used, rather than *if* they are used. That is, if digital divides and knowledge gaps were in focus previously, usage patterns are more in focus today. Recent studies suggest that less educated people, and people with functional variations, use the internet for more hours per day in their spare time than employed and well-educated people (Deursen & Dijk, 2014), but also in a more *shallow* way (for example in the form of games, gambling or purchasing of consumer goods) (Dijk, 2005). Children who are extensive users of digital technologies tend to perform poorer in school, compared to peers who are moderate to low users (OECD, 2015). Thus, access is increasingly seen as an insufficient measure when studying how power asymmetries are reproduced. As such, internet reproduces, or even accelerates (Witte & Mannon, 2010), social and economic inequalities and power asymmetries in society at large, where those with good digital skills will enjoy more political influence as digital citizens (DiMaggio & Hargittai, 2001). Digital competencies are increasingly defined as a continuum of various ways of making use of digital technologies. Digital competencies thereby also describe a desired, or *proper*, use of digital artefacts. Inscribed in these descriptions of digital competencies are differentiations between deeper (better) and shallower (worse) use. The exact details of such competencies are rarely spelled out. In a Swedish context, digital competency is described as 'the extent to which and

individual is confident with digital tools and services, and is capable of following digital developments and of assessing their impact on his or her life' (Ministry of Enterprise and Innovation, 2015a). Groups targeted for digital skills upgrade initiatives are thus seen as incapable of keeping up with the development (i.e non-users) or as using digital technologies too much or too superficially (i.e. wrong-users), and who need to be corrected.

Discussion: digital losers over time

This paper has shown how the governance of the digital citizen has changed across history. The change can be described as a shift from governmental control relying on specific imaginaries of techno-utopianism towards commercially driven, and abstract, digital inclusion. The ambition has always been to bring all citizens on board for the creation of the desirable future. However, the notion of ‘all citizens’ has also enveloped conceptualizations of the normal, and the ‘othered’, of those who need to be adjusted, and those who do not. That is, computerization has been construed as requiring certain skill- and mindsets, so much so that a new type of (desired) citizen has been construed. Everyone who ends up outside this new type effectively also ends up in the ‘upside down’ of digital citizenship. What these groups of people have in common is that they were already vulnerable groups, who were regarded as marginalized, problematic, or different. In other words, it is the already excluded who need to be included through new technologies. Already exposed groups are construed as in need of digital skills. Non-formal adult computer education, in the form of awareness campaigns, social programmes, and liberal education, has been political forms of governance, because computers have been seen as much too powerful to be allowed entrance into society without considering their consequences. Thus, the (imagined) effects of computerization have been problematized and governed, in changing ways, throughout modern history.

Today, the digital citizen can be described as an important part of the digital imperative, the idea that anything (and everyone) is better as digital. The implementation of technologies is often described in terms of push and pull, but the digitalization discourses of today are perhaps better illustrated through the empty Google search box (Snickars, 2014). The digital citizen of today is construed as an active, informed and engaged citizen, who through digital technologies effectively interacts with public authorities, takes active responsibility for their health, and makes informed and independent decisions. These citizen activities are described as important for the maintenance of a democratic society, and for securing future options for the individual. Entrepreneurial skills and computational thinking are seen as strengths. Computational thinking can be described as the ability to rephrase a problem so that a computer can help you solve it. Thinking *within* the digital imperative is encouraged. The danger(s) foreseen by Snow, and that society is left outside, can today be seen as reversed; the digital envelops society. The promise of digital inclusion is a promise of societal inclusion. The story we tell the losers to keep them wanting to play the game is a story of inclusion. But when competencies are conceptualized as ‘keeping up with development’, these skillsets are constantly changing. Digital competencies are connected to citizenship, and this citizenship becomes conditional upon keeping up with (technical) development. The governance of the digital citizen also becomes a governance striving for increased self-governance. The individual becomes responsible for continuously updating herself, to manoeuvre and adapt to

the algorithmic preconditions for her citizenship, to escape her filter bubble, to learn how to separate fictitious facts from 'real news', and to control and administer the (over- and mis-) use of digital technologies. The (desirable) digital citizen of today is the one who uses technologies 'just enough', and in ways that her participatory engagement makes her competitive and attractive on the market.

Contemporary imaginaries emphasize the digital imperative in order to secure financially grounded rationality and to not lag behind. The 1950s were characterized by a similar utopian view, but with the difference that technologies were also construed as something that would increase welfare for all, and reduce physical labour and cognitive fatigue. In the 1980s, fear of lagging behind was also prevalent but, computerization was also construed as creating the good information society, that would be beneficial to everyone through increased equality (provided everyone was properly educated).

Today, digital technological development is not imagined in the same way. The society-improving changes, in the form of improved allocation of global resources, economical justice or freedom from labour, are rarely discussed (and if they are, they are often ridiculed). The digital is a silver-bullet solution, but without clear social, political or economic visions about what exactly is going to improve (and for whom). Public debates about the threats of computerization are also present, but do not seem to influence the educational imaginaries. The digital imperative can instead be described as a cold calculation of the competitive advantages that each respective player holds, much in line with William's Plan X. Thus, the benefits of digitization are expressed in terms of national advantages, the importance of staying ahead (or at least not lagging behind), or through the ways in which the citizen is conditioned by their capacity to 'keep up with development'. The ones who cannot, or will not, keep up, are described as the losers of the future. The ones who actually benefit from this logic are rarely in focus.

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