STRÖMSTAD ACADEMY

Nordic institute for advanced studies

Newsletter, February 2022, international edition

Content

Editor's corner

Editor´s corner

Anders Gustavsson

Surgeon and Chairman of the Board Peter Fritzell reports on important events in Strömstad Academy.

Vice-Chancellor and Information System Scientist Per Flensburg informs about current events in Strömstad Academy. He also discusses the connection between system development and new IT crises within SJ, the police, banks, defense, etc.

February´s chronicle in Strömstads Tidning was written by **physicist Lars Broman**. He warns of the radioactivity of nuclear power.

Educator Åsa Morberg argues against the government's rural policy which has meant the close down of many rural schools. Based on the Government's public investigations SOU 2020: 69 *Older people have never been younger*, Morberg argues against an age-racist way in Sweden in its treatment of senior workers. She further reflects on Prime Minister Magdalena Andersson's sharp criticism of the so-called market school.

Pediatrician Gudmund Bergqvist informs about the value of publishing preprint publications provided by Strömstad Academy. He also reviews the Norwegian historian Terje Tvedt's book on world history.

Redaktör: Anders Gustavsson
Layout: Per Flensburg

Oceanographer Gunnar Kullenberg has published the book Ocean Science and International Cooperation, Historical and Personal Recollections, Paris 2021.

Physicist Lars Broman presented at the digital Solar World Congress 2021 together with physicist Tara Kandpal the article Interactive Solar Energy Exhibition.

Linguists Jens Allwood and Elisabeth Ahlsén gave a digital seminar on 16 February entitled 'Different perspectives on immigration. Positive or negative consequences of immigration? Assimilation or integration?'

In the video series SAV number 44, the Norwegian **Nobel Laureate in Medicine May-Britt Moser** has published her Nobel Prize lecture Grid cells, place cells and memory

In the video series SAV number 45, the **Norwegian Nobel Laureate in Medicine Edward I Moser** has published his Nobel Prize lecture Grid Cells and the Enthorinal Map of Space

In the video series SAV number 46, **Ethnologist Anders Gustavsson** has published 'Cholera epidemics during the 19th century from a popular perspective' http://stromstadakademi.se/SAV/SAV-46.pdf

In the Free Series FFS no 23 **Mathematical historian Alfred Holl** has published 'The earliest printed arithmetic books in 35 European languages focusing in each on the earliest text extant.'

Business economist Rune Wigblad informs that the Scandinavian Magnettågs Group (DSMG), to which he belongs, has acquired an official website https://www.dsmg.se/

The anthology "Pandemics - past and present for the future" has been published and presented through a press release. http://stromstadakademi.se/Pandemierforhand.pdf. The book can be ordered via Strömstads Bokhandel: std.bok@telia.com or Bokus.com. The price is SEK 249. https://www.bokus.com/bok/9789189331006/pandemier/

I want to urge a previous call for all members to verify and complete their personal information on the Academy website. Also try to recruit new members to the Academy, not least young scholars. Please, send suggestions to Vice-Chancellor Per Flensburg per.flensburg@stromstadakademi.se

I wish new contributions to the March issue 2022 of the Newsletter sent to my e-mail address with deadline on 27 March 2022: anders.gustavsson@ikos.uio.no. Send short articles, opinion articles and/or reviews of new scientific literature. Swedish contributions should have an English translation.

Please, also send contributions to the Academy´s publication series Acta Academiae Stromstadiensis, AAS, and the video series SAV to the e-mail address: gudmundbergqvist@hotmail.com

Chairman's report

Colleagues in Strömstad Academy,

Europe has barely just recovered from the Pandemic when we now face a war in which Putin's Russia invades Ukraine. It's really horrible. We “science workers” at Strömstad Academy must regardless continue our efforts to focus on issues that can be beneficial to life and togetherness on our planet, and where we can contribute in various ways with useful knowledge. All thoughts are going, in parallel with this, right now to the people of Ukraine.

In this context, I would like to refer to my January chronicle, where I discussed the idea that we in academia should discuss the individual's responsibility towards society. Then it was with a focus on the pandemic, but now we can also highlight other perspectives.

It feels very positive to see how the local chapters continue to work with external activities, not least in Gothenburg where we can all take part in weekly seminars that address important issues, including immigration and integration.

Gudmund continues the work around Koster and Bode has contacted Bohusläns Museum in Uddevalla who seems to be interested in a collaboration with us in the Academy. In Falun, we are currently discussing with Folkuniversitetet and the Senior Academy about having two Science Saturdays a year, and otherwise one digital meeting a month, with presentations from mainly members of the Academy.

AU has recently had a meeting specifically with the Marketing Group to discuss the group's proposals for the Academy's policy and activities, and this issue will be addressed at the upcoming Board meeting on 15/3, which will take place in a combined physical / digital form at Rune Wigblad's place in Gothenburg. It feels crucial to be able to start meeting physically again after two pandemic years.

Various projects, for example in psychiatry, are underway, and all in all, there is a feeling of exuberant activity in our Academy.

Finally, I would like to welcome new members to the Academy.

All the best, Peter

Vice-Chancellor's report

Vice-Chancellor's report

As you read this, the new website is launched. The marketing team has honed the texts and we are now really happy with them. It remains to search-optimize the site to increase the number of visitors. An important focus group are the people at universities and colleges who risk being forced to retire soon.

The magazine Curie, which is published by the Swedish Research Council, reports on 15 February about the Pufendorf Institute in Lund, which is an interdisciplinary institute funded by the Wallenberg Foundation, among others. A research group can apply for getting established there. If the application is granted, they will receive 20% of their service for one year. In practice, they meet once a week at the institute to read, write, giving lectures and above all, for discussions. One of those who has been there, Jessica Abott, known from TV, says this:

- The work has not lifted my publication list yet, although we have a couple of publications in progress. But it has been valuable from many other aspects. I got a lot of contacts from all over the university because our group was so wide. And I have learned how to problematize in different ways based on different starting points and now have a better understanding that there can be different solutions.

According to Ann-Katrin Bäcklund (Head of the Institute), the investment has paid off for Lund University. An evaluation has shown that researchers, after being at the institute, have raised a lot of funding that can be clearly linked to the theme they have worked with.

I am struck by both similarities and differences with Strömstad Academy. The similarity is that the participants in both cases formulate their project themselves and that they come from dif-

ferent areas of expertise/disciplines; the difference is that the Pufendorf Institute is local and physical while Strömstad Academy is mainly virtual. An important difference is also that the Pufendorf Institute is paying those who are admitted. But it is perhaps possible to find a similar form where Strömstad Academy can be involved.

One area where we can all contribute is career planning. On LinkedIn, I got in touch with an old student from Ghana who had completed his doctorate and who wrote on LinkedIn about how he combined his work in a bank with PhD studies. He received a lot of appreciation and when I mixed in with comments from the supervisor, it ended with him saying that he would apply for membership in Strömstad Academy. Just being visible on LinkedIn, I think, is very important, because many jobs are advertised and applied for there. The place is much more serious than Facebook and Twitter.

Anders and I have started the planning of the science festival. This is roughly how we think:

1) Monday a) Board meeting at 1-2.30 pm. b) Annual meeting 3-4.30 pm c) Everyone arranges their own dinner. d) Mingle in the City Hall at 6-8 pm. Possibly the board meeting can be held one day earlier, because I suspect there is a lot to discuss at the annual meeting. We did so last year.

2) Tuesday a) 9-noon and 1.30-4.30 pm lectures / project discussions. You have to arrange your own lunch b) Tuesday evening: free activities. c) Possibly working groups could meet at 6-8 pm.

3) Wednesday a) lectures / project discussions 9-noon and 1.30-3 pm. b) 4.00-5.30 pm installation of new members and mingle c) 7.00 pm Dinner (optional)

4) Thursday a) 9-noon Lectures / discussions about the Academy's future b) Noon-3 pm Excursion (with lunch) to the sea laboratory on Tjärnö, which was planned for 2020 but which did not happen.

We will try to keep the costs of participation down as much as possible to hopefully get more participants.

Two new members of the Editorial Committee are needed. They should preferably live near Gothenburg so that we can easily arrange physical meetings. Gudmund no longer wants to be convener, so a new one needs to be appointed in the group. Speaking of the Editorial Committee: A number of new articles and videos have been added, including the Moser's Nobel Lectures.

I would also like to welcome two new members:

- Adebowale Owoseni, assistant professor in information systems
- Pontus Stjernfeldt, Supporting member

For some of you, this is the last newsletter you will receive. It is you who hasn't paid the fee for 2021. Indeed, some of you haven't paid even for 2020. Speaking of payment, I remind you that it is time to pay the membership fee (SEK 600) for 2022. According to the statutes, it must be paid before 30/4 2022.

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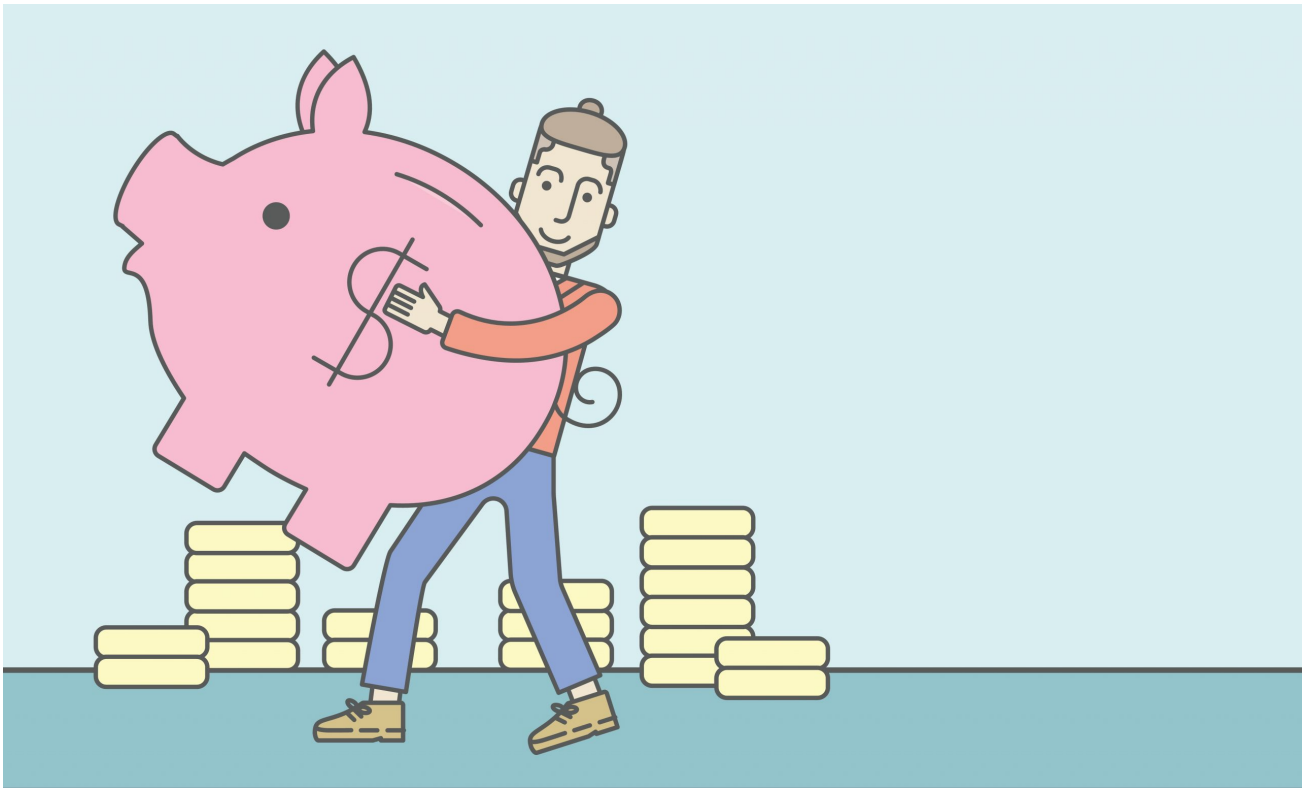


Per Flensburg, Vice-Chancellor

Per Flensburg: New IT-crisis

New IT crisis

Per Flensburg

SJ introduced a new planning system and 30% of all trains were canceled. The defense invested SEK1 billion in a new basic system, but had to give it up. All four major banks have invested about SEK1 billion each in replacing their cash systems, but had to give it up. The police introduced Pust-Siebel to be able to report crimes more easily and quickly but discovered that it took much longer to use than the old one. There are many similar cases and the question is how this can be so.

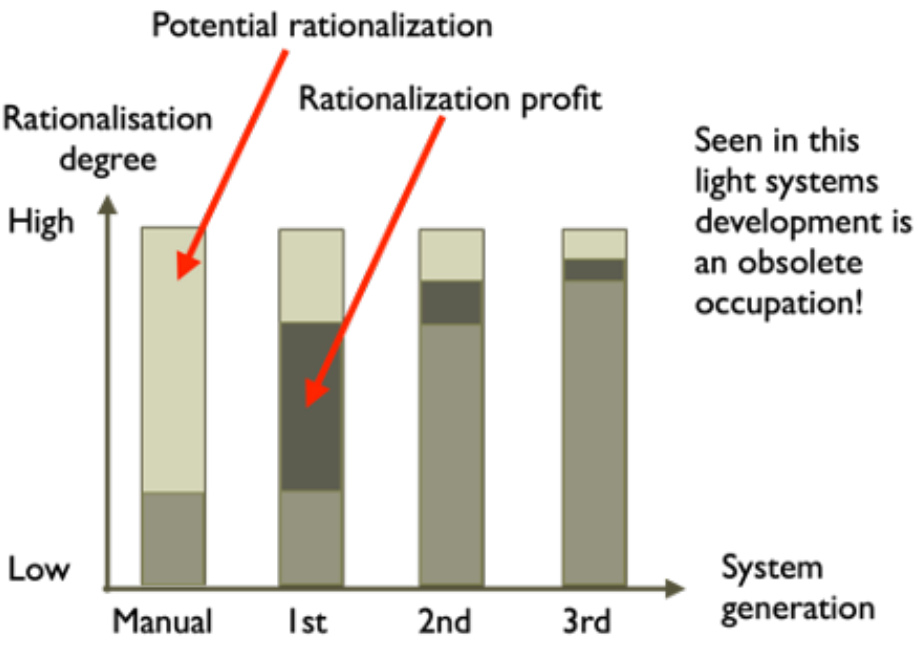
It depends on how the original system was developed. The systems were developed during the 70s and 80s for large organizations and was tailor-made and adapted to them. It required an extensive effort to map out how the organization worked in detail and then translate this into computer programs. This cost a lot. It was called system development and was a main area in the subject which was then called ADB but which is now called informatics. System development models were designed to be used as a guide in this system development work and a

large part of the teaching was about training with these models. A lot of research was put into developing the best system development model, with the result that the models became more and more complicated.

But the basic functions such as order receipt, inventory management, invoicing, payroll systems and accounting are fairly similar in most companies and therefore standard systems were developed that could be bought and introduced significantly cheaper than making a tailor-made development. System development and system development models became only an academic matter and during the 2000s it disappeared more and more from education. This meant that only those who were educated in the 70s and 90s master the knowledge of developing tailor-made systems. Most of these individuals are now either retired or have senior positions.

Manufacturing companies have a more complicated business than a regular sales company and require more complicated systems. But also these are available as standard systems and are then called MRP systems (Material Resource Planning). Finally, all systems are connected in a company-wide system called Enterprise Re-source Planning (ERP). From the beginning, there were many suppliers of these standard systems, but they have been reduced over the years and most deliver ERP systems today or modules that can be connected to ERP systems.

When this computer system industry took off in the 70s and 80s, it was imagined that the systems would be replaced after not too many years. In teaching we expected a standard depreciation of 5 years. However, the technical development has gone fast and the technical life of a laptop is now 2 years. However, the lifespan of the computer system itself, the programs, turned out to be significantly longer. Many of the systems developed in the 70's and 80's are still in operation and several attempts to replace them have failed. One of the explanations is the Pareto distribution, also known as the 80/20 rule. It is a general principle that says that 80% of the effects account for 20% of the resources. For example. 20% of the goods account for 80% of the income. It is a very general principle formulated by the Italian mathematician Vilfredo Pareto (1848 - 1923). In the diagram below, I show the result of this in terms of system development.



The first system generation handled simple routine transactions according to the 80-20 rule. As you can see, the rationalization potential is very high. They paid off very quickly. But when the next generation is to be introduced, the rationalization potential is much smaller, the difficulty and the costs are higher. It's even worse in the 3rd generation. One can question whether the se-

cond and third generation systems ever pay off and this has proven to be the case for many large companies and especially for public organizations.

This is another aspect, in fact the most important but probably the least considered. The standard systems were made for commercial companies and process financial transactions. In these cases there are no uncertainty, it is quite clear what is meant. In the 2000s, most of the public administration, the government, the regions and the municipalities, also began to be computerized. In these cases, most transactions are assessments made by people in relation to a set of rules, which must first be interpreted and about which there is thus no full certainty. No standard systems existed in this area, but the systems were developed by public organizations such as “Statskontoret” and “Kommundata”. The same system development model was followed as for commercial organizations, which was based on a commercial worldview.

You now realize what is happening. After a few decades, a new system needs to be developed. According to current practice, a standard system is sought and introduced with catastrophic results, such as 30% of canceled trains. Lack of adaptation to the business means that the systems do not give the expected results and in some cases (banks, defense) you give up, in other cases (SJ, the police) you implement the deficient systems and discovers their shortcomings. *In the long run, this means that we in public administration can expect a number of failed system implementations*. This is because the knowledge of how to correctly develop a tailor-made system has more or less been lost!

Åsa Morberg: Village school close down

Does the government's rural policy lead to nationwide village school close downs? That's not the point, is it?

Åsa Morberg

How is the government's rural development program actually applied in practice? Village schools are closed down on assembly lines and the countryside is depopulated as a consequence of this. The countryside is not given the conditions to remain alive and thus an attractive living environment for families with children is lost.

School close downs is a strange national trend. Sweden is unique internationally with the trend of systematically closing down smaller schools and, above all, village schools in order to invest in large mammoth schools in central cities. In Germany, for example, closed village schools are being reopened to create a vibrant countryside. Sweden should learn from other EU members, but also from non-EU members such as Norway. In Norway, it is unthinkable to close down a village school.

The closures are preceded by the principals' investigations and the investigations appear to be commissioned work and they are not made unconditionally. What the principals want to achieve is legitimized by selected disparate research results. Large sweeping formulations such as "Research shows that" and then conclusions are drawn that support the purpose of the investigation.

Small schools are not generally more expensive than large schools, as is often emphasized. Small schools can achieve as good results in knowledge measurements as large schools. The size of the school is never the only decisive quality factor. Small schools offer a safe environment for students and a good working environment for the staff. Teachers, for example, are

said to thrive better in large schools, but no such statement is unequivocally substantiated in current research.

The small schools are important for the whole surrounding area. If the school "in the middle of the village" is closed, it can be the first step towards the dismantling of the whole community. A school is central to many different areas in the countryside, for example for association life, for cultural activities, for parent collaboration, for libraries, for sports and for the transmission of knowledge between the generations in society.

School closures are often about the principals' view of finances. It is about saving money, without this being linked to a broader socio-economic analysis and broader socio-economic measures. It is also about the fact that the forecasts of population development often are deficient and a consequence of one, two, three children appearing who have never been counted on.

An increase in student base through immigration can also accelerate restructuring. Large schools are frankly said to solve the problems of segregation. Integration does not start in school, it starts in community planning. It's about building a different society. Segregation begins in housing. When the principals talk about segregated districts, they are talking about the residential areas having a high proportion of socio-economically weak inhabitants. Areas where a clear majority are socio-economically strong are also segregated. The segregated municipality consists of areas isolated from each other. A problem that needs to be addressed. To prevent segregation, the municipality needs to study housing segregation and see how these areas relate to each other and in turn what they mean for segregation in society. Schools, whether large or small, can never solve problems of segregation alone.

Many municipalities have a tough economy and need support from the government. The Government and the Swedish parliament (Riksdag) need to give clear signals about the application of a new, innovative and sustainable rural policy. The school is the hub and the basis for the service that must be available throughout the country. Use the schools as village centers and give them tasks to serve the surrounding community.

Sweden seems to have a good rural policy, but its application in the country is problematic through the closure of village schools. School closures cause the governing party to lose many members and the governing party is likely to lose the majority after the next election.

Sweden must be able to afford a living countryside. Cherish and defend questions about school closures! School closures are first and foremost about children and young people and their right to a safe and inclusive school environment.

Åsa Morberg: Strömstad Academy in the front line against ageism

SOU 2020: 69: Strömstad Academy in the front line against ageism - for senior researchers who can and want to continue doing research

Åsa Morberg

Taking part in SOU 2020: 69 'Older people have never been younger – more and more individuals can and want to work longer', has been very positive. One of the best reports presented. Sweden has almost had and still has an age-racist way of treating senior colleagues in working life.

The report SOU 2020: 69 is comprehensive and deals with facts and research on seniors' opportunities in working life, the view of seniors in the labor market, prejudices against seniors

and the importance of a longer working life for society as well as for the individual and the final pension. The report is one of the few documents that the reader can largely agree with both regarding reported documents and drafted conclusions. It is also a solid investigative work with as many as 23 background reports.

Reports contain both obstacles and the conditions for being able to make use of the knowledge and experience of senior colleagues. The delegation has also submitted constitutional proposals. That more people unconditionally need to work longer is a fact that has been known both in Europe and in the rest of the world, but Sweden has not taken the consequences of this. During my long professional life in higher education, I have really seen how Sweden has stood out internationally in the approach to senior teachers and researchers.

In Sweden, all seniors in higher education are "declared senile" at the age of 67. Stories about how colleagues at several universities were thrown out are hair-raising. In America, for example, seniors at universities work basically until they themselves choose to leave their position. To my knowledge, there is no country that throws out seniors the way that has happened and is happening in Sweden. The stories are many and extremely sad to read. There are colleagues who had large sums of research funding at the age of 67 and who were still abruptly thrown out. A colleague could not enter his university, the office was empty and the research funds were confiscated. The money left over from the granted external funds had been confiscated by the university. In summary, Sweden has an age-racist way of treating senior colleagues. There is a need for countermeasures against such an outdated view of age and work capacity.

Life expectancy has increased significantly, but the retirement age has hardly changed at all. Sweden must stop age racism and, in addition, an elderly ombudsman who can monitor age-related issues needs to be installed. Our current anti-discrimination ombudsman does not work at all in terms of age racism. In our country, seniors can be discriminated against, without anything happening!

It is really strange that Sweden has been able to afford to expel researchers from universities. Sweden can be seen as a small duckpond in the world that really does not have much research, so much so that we can throw out researchers who are active and contribute to increased knowledge development. A researcher can really reach the peak of his career late in life. That Sweden has not taken advantage of the knowledge and know-how that senior researchers possess is very strange. It is a waste of research competence that is unparalleled. Those who choose to continue working, do so mainly because they enjoy their work, have the skills and believe that social contact with colleagues is important and generally revitalizing.

Seniors today are healthier than seniors before, they are more well-educated compared to previous generations, and they usually enjoy their work tasks. The conditions for a longer working life are really good. Seniors who really want and can work longer should be allowed to do this and not be hindered by an outdated view of seniors. Why have a final retirement age for the career at all? There are no objective reasons for that. The report highlights three things: Firstly, that the individual can continue to work, ie. has a sufficiently good working ability, in relation to set requirements. Secondly, that the individual wants to work longer and thirdly that the senior worker may continue.

First, that individuals can work, ie. have enough physical and mental strength. It is important then that seniors' work, withdrawal of pensions and contributions to tax revenues are highlighted as a major impact on society. The view of senior labor is outdated and deeply flawed and it is that view that must change immediately. There are big differences between different groups in society. There are differences between the low-skilled and the highly-educated.

Between workers and white-collar workers. Between men and women. If more people contribute to the financing of the common, no one loses. Seniors should be treated with dignity. Individualized opportunities to end one's professional life are of course preferable.

Today's seniors have a higher level of education than previous generations, which has a positive effect on the conditions for a longer working life. Lifelong learning is of crucial importance for being able to stay in working life. All restrictions on studying at all levels must be removed immediately. That everyone can learn high up in the years is no problem. You must be able to learn and develop throughout life. Continuous competence development throughout life is crucial for the opportunity to be able to work.

In the report, the delegation proposes that a permanent function for the promotion of a longer working life be set up, and this is an excellent proposal. In the report, the delegation assesses that there is a need for a research initiative that bridges the areas of working life and elderly research. Funding for this area needs to be provided by the Swedish Research Council. The research investment should focus on different aspects of seniors' working life from the perspective of society, the workplace and the individual, as well as on the reasons why employers opt out of older workers and how aging has changed. 75 years today different from 75 years in the 50s, for example.

In summary, the delegation report points out a number of considerations and assessments with the aim of: achieving a more inclusive and age-independent approach to working life, counteracting ageism and age discrimination, and being able to better utilize the knowledge and experience of older people. The report is extremely worth reading and gives hope for a future view of seniors.

Åsa Morberg: The Prime Minister's words about schools

The Prime Minister's words about the Swedish municipal school, the private independent school and the future school policy – where is this heading?

Reflections by Åsa Morberg, associate professor of didactics

Sweden has many good schools, not least we have many good teachers doing a fantastic job, says the Prime Minister, and adds that we also have schools that are afflicted by chaos and, in the worst case, violence. We all know that, too. This is nothing new in the school debate. These are opinions expressed by virtually everyone who criticizes the Swedish school.

The Prime Minister adds that teachers do not have time to support students' learning or take on students who interfere. She sees the problems as due to lack of time. That may not be the whole truth, in my opinion. There are many other factors that contribute to the mess. How can the school today act against messy and violent students? The system of rules and the teachers' lack of opportunities to prevent chaos and violence also contribute to a chaotic situation.

The Prime Minister also believes that we in Sweden have schools that are careless with the knowledge requirements and are setting joy grades. This is the stated wish and aims, a tough statement by our new Prime Minister! Prime ministers do not usually paticipate in the school debate. It's unusual. The Government's ministers in the Ministry of Education should comment on this, in my opinion. This is where the so-called the expertise is.

The Prime Minister is now launching a tough school offensive to take back democratic control over the school and do away with all the mess and, last but not least, with the so-called mar-

ket school. The market school is due to be a major issue for the government in the Prime Minister's appeal. The marketing school follows a previously decided system of rules.

Today's rules were created in the so-called independent school reform that appeared in 1992. It then stated that the same conditions should apply to independent schools and municipal schools. This means that the school fees, which each student has, can finance schooling in either a municipal or an independent school. The independent school reform has been around for a full 30 years and now changes are expected. Exactly what the changes will be cannot really be predicted. The government says that the school's money should now be distributed more fairly, based on the responsibility that the schools actually have. Matthew's thesis: To those who have, be given! should therefore be stopped. This has been a leading thesis for a long time in the Swedish school system.

It is now about the for-profit school groups that make big money on our children's future and where municipal schools do not get paid for the statutory responsibility for the school that they actually take. We cannot have that situation, says the Prime Minister and the government. It damages Sweden and creates large gaps between children and young people. There will be a change, according to the Prime Minister. These problems may not have appeared now? The free school reform is 30 years old.

The Prime Minister believes that the way things are today, Sweden risks a collective punishment of children who go to municipal schools, while those who own independent schools receive a financial bonus. The Prime Minister makes a tough outcome against an entire industry. Many parents have placed their children in independent schools because the municipal school does not measure up. What consequences will a changed school policy have for the market school? Obviously, the market school cannot continue to withdraw financial bonuses, but at the same time the Prime Minister says that it is not a matter of course for our Riksdag/Parliament. There is a political disagreement here.

This is because the for-profit school groups have ensured this, she points out. They have used tax money to pay so-called lobbyists for our parliament to safeguard the profits in school, even though the Swedish people do not want it. How can the Prime Minister know that? What research has been done? Lobbyists mean that people are using political pressure, i.e. that professional representatives of special interests present their opinions in an organized form to those in political power. Lobbying is common in both the US and the EU. It has become more common in Sweden as well.

The result is a no-say parliament that wants to protect the Swedish marketing school, basically at any price. The Prime Minister says that today there are parties in the Riksdag/Parliament that prefer to look to the interests of lobbyists, school groups and well-paid PR consultants, rather than children's learning and their future. Large sweeping formulations.

Now it is up to evidence for the Riksdag/Parliament, says the Prime Minister. She says she knows that support for the government's proposal is strong, even among many liberals and conservatives. They see that order and order in classrooms and in school systems is Sweden's long-term national interest. Everyone wants order and order in the school, not just liberals and conservatives. It is a mantra that everyone can sign.

It is literally Sweden's future that is at stake - and it is a battle the Prime Minister is prepared to take every day of the week. What will the battle ultimately lead to for the Swedish school and for the marketing school? Less profits and more education? A changed system of rules for independent schools? Stop for rogue actors? Closing schools with major shortcomings?

In summary, the Prime Minister now speaks on school issues. It is, of course, a matter of curbing chaos and violence, but above all of settling with the market school run by for-profit school groups.

Gudmund Bergqvist: Review - With the past as a mirror

Review: History of the World - With the past as a mirror

Terje Tvedt. Bazar publishing house 2020

Gudmund Bergqvist

Terje Tvedt is a Norwegian historian currently professor of geography, former professor of global history and professor of political science.

The First Civilizations

He begins by describing the former civilizations around the Nile, Tigris and Indus. They emerged a number of thousands of years after the first transition from hunter society to agricultural society. What they have in common is that they were farming which was largely due to irrigation of the Nile in the form of flooding and with Tigris irrigation with canals. The need to control these, distributing harvests led to the need for administration and to the use of writing, In both their religions water had a central role. In Egypt an autocratic pharaoh with rather dictatorial power and among the Sumerians more a king and a ruling class.

The collapse of the Sumerian Empire has been attributed to poorer harvests due to increasing salt content in the soil.

The Indus civilization covered a large area around the Indus and its tributaries. Water came partly from melting glaciers in the Himalayas and partly from large monsoon rains. Indus culture is different because it lacks monuments and was probably much more egalitarian and decentralized. This is where the wheel, bath and sewage system were first used. Changes in the monsoon led to less rainfall and changed river depths, causing the cities to slowly depopulate.

For some reason he has not described the Roman Empire where water engineering was prominent with the construction of many long aqueducts for leading water to cities.

The Era of Asia

He describes two great medieval empires of various kinds: in what he calls the Asian era; the Ottoman and the Chinese empires (especially during the Ming Dynasty 1368 1644). They were by their very nature different. The Ottomans were built on an expansive war, effective administration and large trade.

During the period 1500-1799, China was the world's largest economy with a well-developed technology and farming of great scale, Society was largely affected by their large rivers that had regular flooding causing large numbers of fatalities. To prevent this, extensive work on embankments was required, as well as the construction of canals that also moved water to dry parts of the country, but they were also of great importance for transport of different kinds of goods. In order to function, a centralized system was required when decisions on embankments, etc. had to be made for large areas.

The victory of the West.

Around the year 1500, the Americas and the shipping lanes around Africa to Asia were discovered. This brought about a resurgence in trade and transport that laid the foundation for today's global trade. For this to develop, access to adequate goods was required, not only raw materials such as gold, silver and spices. With the advent of new technologies the Industrial Revolution created the conditions for the dominance of the West until now.

He describes the Great Industrial Revolution and why it started in England (which had good access to transport routes via a large network of small rivers with calm and even flows and which ended in areas suitable for large ports. Around 1800, there was some technological progress such as water wheel, the steam engine and improvements in the production of high-quality iron. These are backgrounds to the construction of weaving machines which was the engine of the initial industrial revolution. China did not have the same premise hydrologically for this, which he believes was the background to the fact that it took place in Western Europe and not in the in many areas.prominent China.

European colonialism

Colonialism is usually interpreted as European, but there have previously been colonies in for instance the Ottoman Empire. The general attitude nowadays is very negative towards colonialism which is more or less equated with exploitation. However, the subject is complex.

The European colonialism started around the 16th century with the great geographical discoveries. The actions of the British in Egypt are examples of the complexity. The English occupied Egypt at the end of the 19th century, in order to secure communications with India via the Suez Canal, but also made regulations and dams in the Nile in order to increase cotton production in Egypt, something that was of value to the British manufacture industry. These regulations of the Nile were of great value to local people who could increase agricultural production.

From the U.S. century to China's dominance?

At the beginning of the 20th century, the United States was the world's largest economy and after World War II a dominant superpower, even more so after the collapse of the Soviet Union. In recent decades, however, there have been problems with internal divisions both among politicians and the general population. China describes the 19th century as ”the century of humiliation ”and it was in the middle of the 20th century a poor country badly affected by World War II, civil war and the chaotic Mao years. In recent history, after a new political direction, the last few decades have shown a very rapid development economically and technologically. They are now the "factory of the world". and is now one of the world's 3 major economies, and according to the “PPP method “it has the largest economy already. Technological innovations and development are fast-growing.

The United States now has the world's leading universities in research. He doubts that China will become dominant, especially as the US has the ability to use smart power i.e. alliances with other developed democracies.

Climate change and the demise of civilizations

In a final chapter the author discusses how changes in climate, temperature etc. have led to major changes in and disappearance of societies. This from Stone Age communities in Doggerland, now under 10-20 m of water to the disappearance of the Tigris and Indus civilizations. Changing water relations were also behind the fall of various Chinese dynasties as well as the fall of the Mayan Empire in the Middle Americas and the Khmer Empire with the capital Angkor in Cambodia.

He believes that will happen in the future as well. Both China and India are working to construct new water management channels. The Himalayas are central and account for water for at least 2 billion people. Population growth in Africa from 1 to 4 billion has been predicted.

The population of the Nile Valley might increase from 0.5 billion to 1.5 billion, which is not sustainable. Drought periods have been recurring in many parts of Africa and are expected to increase with global warming hindering an increased food production.

In conclusion, an easy-to-read, exciting and different view of history where he constantly points out how natural conditions and especially water conditions are crucial for the development of cultures and their persistence.

Gudmund Bergqvist: On preprint

On preprint

Gudmund Bergqvist

The time between submitting an article to a well-known science journal and publication is often several years. One solution to get a quick publication is to submit the MS to preprint journals. (online journals) Preprint has been used for a relatively long time in mathematics and physics and has now been widely used in life sciences in connection with the COVID-19 pandemic.

It has been questioned how correct conclusions that emerged in prepublications are compared with the final publication in an ordinary scientific journal.

In the issue of February 5th 2022, 'The Economist' describes a recent study comparing 184 preprint articles with the conclusion-result they showed compared to that when the study later was published in a regular international scientific journal. In only one case, a completely different result, i.e. reversed conclusion, was obtained.

In some cases, different gradations were reached, but the author's conclusion is that preprint articles are generally reliable. It seems, then, that the usual scientific journals provide little extra value compared to the first manuscript. This is also pointed out in light of their high subscription fees.

Strömstad Academy has since the fall of 2020 a special serie for pre-publications. Please consider the possibility of using that option and spread the message especially to colleagues in life sciences and other natural sciences.

Gunnar Kullenberg: Ocean Science and International Cooperation; Historical and Personal Recollections

Newsletter abstract: Book title: Ocean Science and International Cooperation; Historical and Personal Recollections, by Gunnar Kullenberg, (IOC/UNESCO, Paris 2021)

(Extended) Abstract

Cooperation is fundamental for pursuit of knowledge. The aim of the present book is to highlight the role of international cooperation, together with social and environmental developments and needs, in our efforts to understand the most important realm of our planet: the ocean. The content presents the development and role of cooperation in ocean exploration and

science, coupled with new technology, over more than two centuries. Regional divisions and motivations for specific actions, including social needs and environmental concerns, are examined to demonstrate this development. The reflections are also linked to the creation, development and strengthening of the Intergovernmental Oceanographic Commission of UNESCO and its role in facilitating cooperation. Since the mid-nineteenth century, the development of oceanography through exploration and scientific observation has been coupled with industrialization and is indivisible from scientific, technological and social change. It has been driven by revolutions and wars as well as globalizations, reflecting developments in trade, transportation and economic growth. All have increased the need for governments and industry for greater knowledge of the ocean conditions and resources. Results of the research have provided the basis for an integrated interpretation in a number of assessments with respect to the conditions in the ocean and shelf seas. These have demonstrated the necessity for proper governance and management of the ocean as a whole including the marine resources.

The content in 30 chapters, with my personal experiences given in 8 separate boxes, initially includes overviews of cooperative data collections through systematic, agreed regular observations from ships with data exchange which was initiated in the mid 1800`s; of some earlier explorations with collection of samples of material and data involving several nations and scientists; several subsequent chapters for the period up until WW II consider the mounting of global and regional ocean science expeditions in light of major infrastructure and industrial developments, with the Challenger Expedition 1872-76 as a leading example. The discussion also includes considerations of concerns for limitations of fisheries resources on a regional level, resulting in the creation of the International Council for the Exploration of the Sea, ICES, in 1902 (chapters 1-8).

Directly after WW II, scientific cooperation was motivated by the desire to bring technologies developed during the war into ocean science and observation, and attract leading scientists from other disciplines. This was combined with new ideas not so far fully tested and technological developments. The section illustrates the process by highlighting two global expeditions by Sweden in the Albatross 1947-48 and by Denmark in the Galathea 1950-52, and by several new technologies for ocean observations such as recording current meters, satellite navigation and observations, and diving technology (chapters 9, 10, 11).

The next section identifies the need for ocean governance and management in cooperation, brought out by extensions of national jurisdictions together with discoveries of many resources on and in the ocean floor. This development triggered the UN Conferences on the Law of the Sea, with the third one 1973-82 resulting in the current UN Convention on the Law of the Sea, UNCLOS, which entered into force in November 1994. This also stimulated the development of the International Decade of Ocean Exploration 1971-80, that enabled and stimulated increasing ocean scientific cooperation at global, regional and sub-regional levels with inclusion of several additional countries (chapters 12, 13). The subsequent section considers the increasing concerns regarding the degradation of the marine environment, overfishing, coastal erosion, levels of waste disposal and pollution, global changes in demography, nutrition and political tensions. The whole development relates to the Stockholm Conference on the Human Environment 1972 with the creation of UNEP, the UN Conference on Environment and Development 1992, and increasing applications of agreed cooperative management processes together with creation of regional conventions (chapters 14-22).

The following section traces the notion of the sustainable development paradigm, climate change and multi-stressor issues, including ocean acidification, warming and decreasing oxygen content, plastic pollution, sea level change and decreasing organic production. All of this

triggers the idea of the Ocean Science Decade for Sustainable Development 2021-2030, as an element of the UN Agenda 2030 (chapters 23, 24, 25).

The final section examines the developments up to about 2015, including modalities of interdisciplinary cooperation, increasing need for integration with involvement of social and economic sciences, for instance in relation to the strong, competitive development of ocean (blue) economy. Trends in ocean research and industrial applications are elucidated, together with some results of the cooperative research efforts, being gradually applied in services of society.

The executive summary is given in the form of five Executive messages highlighting: the ocean imperative-without the ocean we would not be here; the need for ocean governance; the need for knowledge, understanding and cooperation; the funding requirements; and the institutional development needs.

Lars Broman: Interactive Solar Energy Exhibition

Lars Broman: In October 2021, I presented the paper 'Interactive Solar Energy Exhibition' as an oral presentation at the virtual Solar World Congress. The paper, co-authored with Tara Kandpal, has now been accepted for publication in the (refereed) SWC 2021 Proceedings.

Here is the abstract:

Public understanding of science (PUS) is a central concept among science communicators. In 2011 we introduced the acronym PURE, Public understanding of renewable energy. PURE is proposed as an important sub-concept of PUS. Four reasons for the importance of public understanding of renewable energy are: (i) The earth is a lonely planet in a vast space, (ii) The earth is a planet alive with a dead sister and a dead brother. (iii) Anthropogenic influence on the world's climate. (iv) One major source of greenhouse gases is combustion of fossil fuels, which has to be replaced by increased energy efficiency and renewable sources of energy. There are many channels that can be and are tried to achieve PURE, among them interactive exhibits in science centers. We have over the years built a number of interactive solar energy exhibitions and we suggest that an interactive exhibition could both be part of the newly established digital ISES Solar Energy Museum and a Science Center IRL in Strömstad or elsewhere.

Presently, I have become a member of the International Solar Energy Society's Solar Museum Committee with members from countries in many parts of the world. We will have our first (virtual) meeting on Wednesday 2 March 2022. Academy Fellows interested in participating in the development of a world-wide (mostly virtual) solar energy museum are welcome to contact me at lars.broman@stromstadakademi.se .