

Information requirements for political science, sociology and public law

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Introduction

In this presentation I will reflect upon my understanding of how to use information technology in some of the scientific fields I have background from, political science, sociology and public law.

I am not a scientist, my work has been in the public sector after graduation in 1976, with a master degree in political science, with sociology and public law as side degrees, and studies in the US in international systems, UN etc.

My main years have been within regional government in Troms, Norway, working to develop Troms, Northern Norway, from 1981–2000. After that working to promote KSC and improve cross-border projects under the Barents Program.

1. Outline

I will present my background, my training with technology and my reflections around how this was done, what was not done, how life became more easy.

Then I will discuss some options available within political science and sociology and with respect particularly to organizational development, learning within organizations.

2. Technical development. New statistical studies

When I started working in a bank in Tromsø in June 1966, I came from gymnasium. In the banks in Tromsø, computerized accounting was introduced,

Troms Datasentral AS was one of the biggest private in Norway with modern technology. Later in the beginning of the 70'ies all loans, contracts were computerized, giving a full range and picture for taxation systems, IRS, Internal Revenue System, overlooking tax for all people, every customer in the banks and insurance systems. This had to do with tax deductions. At that time all people had to declare their income, deductions from interest paid on loans etc.

10 years ago a new system was introduced ready-made forms from IRS, (Internal Revenue Service), all we have to do is to check the figures and sign if correct, if not, correct them and submit. From 2008 this system is also enlarged to declarations for business companies of small and medium size.

This new system is saving time and worries for most people, only for bigger companies tougher requirements are needed.

It also saves enormous time for the IRS, opening up for better scrutiny of more complicated matters like black money, white-washing of money, currency control etc.

All this material is ready for studies, in the sense that it is available and can be used for statistical and scientific surveys. The data are on operational levels and forms. They are used for financial planning in government and private sector, like banks, insurance companies and others, and for research, like sociology: How is wealth and poverty distributed?

3. The change of technology and new dimensions

In 1981 I came to the regional offices in Troms fylkeskommune, — computers were used only for financial budgeting and revisor work. In all management and developmental work, things had not changed, maps and archives were not digital, typing was on electrical typewriters. During the 80' this changed, faxes replaced telex machines, typing were done by all caseworkers by using pc.

During the 90'ies the Internet and mail systems came, opening up for a new world. All incoming/outgoing letters were handled by computers giving new methods for overlook and insight.

This has opened up for a new world for people studying decision-making, such as political scientists, students of public law. But also for journalists and media-people looking for mistakes in public management, delays, dysfunctional decisions, etc.

Earlier in the beginning of the 80'ies all telephone systems, also long distance, were automated, creating flexibility. Some of the people becoming obsolete, got work in regional museums, transferring material from historical statistics, church books, birth registers into digital systems.

Today we can study history in a very different way, using all this material, dating back to the 1600 hundreds or so. More will be done opening up for

historical studies, and cross-disciplinary studies never thought feasible. The same is done in most countries probably, opening up for new, comparative studies never feasible before: Why was Europe the first to develop new technology, ships, guns? Why not other countries? And why Portugal, Netherlands and England, why not France, the country with a surplus agriculture and hence money?

In political science and history these questions have been studied again and again. Max Weber wrote about Protestant Ethics and Modern Capitalism 100 years ago, Herbert Wallenstein discussed the same questions, during the 60' and 70'. This was long before available datas like today.

But it also required a trained mind, and an overview that few individuals could master. Questions on a macrolevel require enormous amounts of data, data that are available on an aggregate level to do comparative studies. This is now open to a broader number of scientists than ever before.

4. Inter- and intra-disciplinary studies

But still, we need training in such studies. This training is needed when young to be able to handle questions relevant and to follow them and in bigger teams, teams that are cross-national and cross- and intra-disciplinary. In many universities this is not how things are done.

In many countries we see the growth of Tink Tanks, mostly we find them in capitals, but also regionally. They might favor another policy than the government, but usually keep a high professional level, that requires training. A common development now seem to be gathering for a shorter period, 2–3–6 months, people with varied professional training, not only from academia, but also from business and management — and to present tasks there and then to be discussed and solved. Such interactions is tough, but can be very useful for societies to get maximum and snappy solutions to questions under development and discussion. Model Security Councils are another type of practical training systems used in universities and in diplomatic training arenas. Leadership training programs, modern project administration are today a growing business, and very useful for people entering new jobs or getting extra mid-life training. Such programs will require IT systems able to simulate issues, decisions, or crisis management.

5. Comparative Macro-level Studies

Questions related to development of the BRIC countries, (Brazil, Russia, India, China), are today of new interest: How can development become longtime and not only for a small segment of the population? During the 70'ies computerized macro-level data were available, in some sectors, but much material was hidden in documents and archives, regional statistics were not so

well studied because it was scarce and lacking. Today we have data from regions in Brazil and Russia, making macro level statistics relevant and reliable.

In the early 70' new technical equipment such as bigger computer, opened up for comparative studies within budgeting: The often asked question was how to explain differences within similar towns, cities in a country and between countries. This was when I studied and we had to use the old-time cards with holes: Don't spindle, fold or mutilate, because if you do, the cards are ruined.

Such studies were used widely, today international studies within UN or OECD countries, or by the World Bank or the IMF, are published to find the best school systems or hospitals, or national, regional or local administration, compared by expenditures per capita.

6. Spurious relationship or valid correlation

But many relationships may be spurious, like between economic development and political systems, democratic in the traditional sense or authoritarian?

This brings us to the important questions: What are we really studying, relationships or correlations that are real or spurious. All studies have to start with the methods and the hypothesis.

Is Brazil going towards democracy, will people get a better life? What about China, and Russia, the economic growth has been enormous, but what is behind the figures, and how is the income divided?

Do we have a real economic growth or is it spurious? Does Russia and China require their own ways of political system to develop their countries? Why and how so?

In others words, could China, Brazil and Russia have a better economic growth with a more democratic system?

How about Cuba, a one-party state with a good educational and health systems, but what about the rest, the income level, the technology etc., everything related to the future. How to study Cuba without ideological biases, because we like Castro and his fight for Cuba against America — a favorite game for many people — Samson and David. We have to compare Cuba with Cuba, but still comparative studies are very useful. What could the North Koreans had if not closed, similar to South Korea or even better maybe?

We cannot study apples and oranges at the same time, and if we mix, we get fruit salad. How to avoid that, in the midst of enormous datas in our time?

7. Information Acts and Acts for Openness

Not only datas are necessary, they have to be available to people, there and then, not in 50 years. All countries stive with this, to attain a level productive to

society and to science and the public. No country can afford in a global time to stay out of the information process needed for international investment and organization.

The basis for all studies in cross-country projects rest on minimum openness, and access to data on a level that is attainable for research. Not all countries allow that, and some datas are not free to science until 50 or 100 years after.

8. New paradigm and how to develop them

Is it possible today to go against the UN Climate Panel and the model understanding that we have global warming and due to human activity? How can science modify or change that understanding? Is it possible to finance studies with another angle? How can science go against a wide spread sentiment?

These are relevant questions also in our time, computerized datas or not. This brings me to a discussion on how to confornt new issues.

9. Dangers and challenges to modern societies

What about the dangers in our time, such as trafficking, drugproduction and dealing, prostitution on a mass scale. How can these dangers be controlled and minimized without breaking democratic rules? Today too little attention on the response side is given by science. We live in a time of liberal ideas, but we have seen a scaring development we cannot let happen. I feel from my own studies and practise that science had too little response to give to some of the most essential and controversial questions. Maybe it is related to the fact that scientific life is so competitive that it demands a full time academic life. Outside the academia life has it own speedy way and requires quicker responses.

10. Future prospects

What will be important in the future?

More historical material wil be available due to digitalization, and new ways of publishing. This will probably change many historical thruths. Studies in decision-making is a growing field, usually based on cases and biographies, compared to interviews and studies of documents. New ways of management and decision-making based on new technology will give new decisions, f.inst. within taxation, granting of loans — like for large scale housing programs. Since the bases will be digitalized, decisions could be much faster, reducing the number of people and levels involved. Today we can ask for credit/loans from home, from our own computer. We can ask the government about information and request service never attained before. The important questions would then be what will

happen to people, will there be many drop-outs, people lagging behind, due to illiteracy or because they are not able to use new technology? How shall society find ways to guarantee more justice and even-spread advantages?

New techniques will be very helpful, but he old questions remain, how to develop justice and welfare for all people?

11. Summary

IT has to be easy to use for people with no hang up for IT, we need to use it like a radio or tv, we do not want to spend too much time reading what the computer program runs thru while opening, or what to do in case of this or that. Most people want to use their pc when necessary and in an easy way.

The programs have to be simple enough to use without too much further study. data available have to be on a useful level of presentation and/or context.

In the end, the scientist or another user, has to rely upon the data, and as such then, on the people who collected it. In other words, the classic demands for reliability and validity.

But then we are back to the beginning, to how data are gathered, compiled, refined, interpreted and presented.

In social sciences we use soft or hard data, soft data are collected in a way different from the hard. Also, did we collect it by ourself or use it from second hand sources? Did we use official rawdata or were the data processed in any way?

These are the crucial questions, and most frequent questions we have to make and go thru in any scientific study, big or small.

In the final analysis, the questions we make, the definitions we use, have to be our own, and no matter how much data we use. Most complicated questions are multi-dimensional, and require analysis base don that, multivariate analysis.

Only now we can use that for estimating resources in the sea, like the cod in the Barents Sea. A long cooperation between Russian and Norwegian scientists exist from the 70'ies, but still the crucial qestion is how to interpret the figures and the estimates.

In political analysis, it is easy to get people's response to what kind of washing detergence they use, but more difficult to get correct answers to what people have voted, will vote and why. The technique for making such analysis were devloped from the 1930' in US elections from 1932 by Lazardseid and his teams. People doubted all his results, but today we have an entire industry around elections, people's preferences in spending money etc.

In this paper I have chosen to be personal in my approach.

I try to follow the discussion about future requirements and prospects by general reading, newspapers, journals. Most of what is presented is often good, it stimulates the thinking and feeling that so much will be possible. Like the new

technology developed by US companies to take care of those coming back from Afghanistan and and Iraque with lost limbs or with severe disabilities. The goal is to give a full life by using not only the best technology, but by creating it, and to train the unfortunates to be able to live their new lives to the fullest degree.

This is important because it reflect the philosophy inherent in human mind, to create society and to shape the future and push the frontier forward.

The awful worry is that conflicts and wars seem to be the very best innovative forces, leaving us with an even worse question: Do we need wars to renew our technology, or do the systems work for wars?

Technology is not free of charge, it requires change and resources, resources in the fullest extent of the word.

And it requires people with training, not a handful, but a critical mass, enough to implement ideas and products and put them to the market.

New technology is today making change in the most remote places, and linking people together in a way never foreseen. When great accidents or catastrophs happened 150 years ago, people did not know and could not do anything. Today we can, we know immediately, and relief systems can be operational within hours. Such logistical operations require massive use of IT and reliable and valid datas.

New ways to make statistical data operational and fit for scientific work will come and change science also. Above all, to make it possible not only to descibe the past, some of the present, but also to describe future ways and future scenarios. Today some of the litterature within social sciences do not come up with the best solutions, the best options. Science is too often too slow to push forward new solutions, new practises, not only because of lack of relevant and sufficient data, but because the courage and relevant understanding is lacking.

In short: Even if we lack data, we know what is reality, what is good and not good, what is just, and not just, what is a good distribution of wealth and opportunities and what is not. Science does not exist for itself and for the people lucky enough to make a living of it, it has a defined role in any society.

Новый подход к устойчивости дискретных систем

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1. Введение

Теория дискретных систем находит применение в таких областях техники, как системы с ЭВМ в контуре управления и импульсные системы с различными типами модуляции. Исторически эта теория развивалась как отражение теории непрерывных систем, поскольку наблюдалась параллельность в развитии понятий и подходов в решении традиционных задач автоматического управления. При достаточно малом периоде временного квантования свойства дискретных и непрерывных систем одинаковы, что и утверждает известная теорема Котельникова. Однако никакая аналогия не бывает полной.

Действительно, в дискретных системах наблюдаются виды движения, которые не существуют в непрерывных системах: процессы конечной длительности, скрытые колебания, почти периодические колебания. Частотная характеристика линейной дискретной системы периодична, что связано со стробоскопическим эффектом.

В области теории абсолютной устойчивости нелинейных дискретных систем широко известный критерий Попова—Цыпкина полностью аналогичен круговому критерию. Однако усиление этого критерия на базе квадратичного преобразования [1, 2] приводит уже к результату, не повторяющему в новых терминах круговой критерий.

В настоящей работе рассматривается модернизация критерия абсолютной устойчивости дискретных систем [1, 2], использующего метод квадратичного преобразования вектора состояния. Цель модернизации состоит в получении формы критерия, которая не зависит явно от понятий