SPECIAL EDITION OF THE FINLAND FUTURES RESEARCH CENTRE'S NEWSLETTER

Neogrowth – the Legacy of Professor Pentti Malaska

The Finland Futures Research Centre has a strong history as a pioneer in multidisciplinary environmental research. In our research projects, we have particularly concentrated on the modelling of sustainable development in addition to the development of indicators.

The lifework of recently deceased Professor (Em.) Pentti Malaska, the previous leader of the Finland Futures Research Centre, was very closely connected to the prevailing discussion on sustainable development and global environmental problems. Already in the beginning of the 1970s, Pentti deliberated the question of the relationship between the nature-based ecosystem and the human induced techno-system, as well as the factors affecting environmental impacts. His conclusions were very similar to those presented in a discussion in the U.S., initiated by John Holdren and Paul Ehrlich in their article in Science in 1971.

Pentti never presented his contemporary ideas in international scientific journals, publishing only a short report titled "Future Prospects of a Technical Man" in 1971 in the series of Turku School of Economics and Business Administration. However, both Pentti and the American discussants stated that global environmental problems are caused by three main factors, i.e. population growth, increasing affluence of that population, and technological change. This is the origin of the content found today in the wellknown IPAT and Kaya identities.

In the 1990s, Pentti started developing a mathematical information system for sustainability evaluation, in collaboration with his students and colleagues. The first version was called a "total environmental stress" (TES) approach. In the EU FP5 project Terra2000 (implemented in 2000–2003), this framework was further developed and renamed as "Advanced Sustainability Analysis" (ASA).

Promoting Sustainable Futures

The ASA approach was based on decomposition of a change in an indicator of sustainable development into contributions of factors identified in an IPAT-type "master equation". Pentti and his team introduced master equations for e.g. dematerialisation of production, immateri-

alisation of consumption, structural change and welfare productivity.

One innovative part of the ASA approach was to divide economic growth into "sustainable" and "unsustainable" parts. It was possible to quantify the share of which percentage of economic growth during a certain time period was sustainable, and the ASA approach also provided scenarios for the future and evaluations of required technological developments, in order to achieve a sustainable future in relative terms.

In public discussion, terms such as dematerialisation, rebound effect and others were – and still are – of-

Neogrowth means cutting down resource use and environmental impact without decreasing service. Photo: Petri Tapio.



Rebound strikes back: Technical development is not enough if material growth exceeds the speed of dematerialisation. The case of carbon dioxide emissions in the USA.

ten used without any exact definitions or quantitative estimates. ASA provided quantitative interpretations for these kinds of terms.

One of Pentti's goals in relation to policymaking in the national and European level was to provide empirical results, taking into account all dimensions of sustainable development. A lot of this work was done in the Terra2000 project, but the policy-level goal was not easy to achieve.

From ASA to a New Concept Called Neogrowth

In his last years, Pentti came back to the ASAbased analysis of unsustainable and sustainable parts of economic growth, and introduced a new concept, which he called neogrowth. Pentti's definition of neogrowth was economic growth without increasing environmental stress and without decreasing welfare in society.

The important elaborations are the distinction between material consumption and GDP, as well as material consumption and environmental impacts. Another goal is to include the effect of international trade to the analysis, since production and consumption are largely separated throughout the globe.

Unfortunately, Pentti did not have chance to finalise his work with the neogrowth concept, and thus it remains as an important future challenge for his colleagues at the Finland Futures Research Centre. \bullet

Jarmo Vehmas, Jyrki Luukkanen and Petri Tapio Colleagues of Professor Pentti Malaska



Re-visioning Futures Studies Education – towards a new mindset



The most valuable assets to a company or an organization are visionary thinkers and futures-oriented minds. The FFRC, and particularly its

Educational Unit, organises various courses and lectures to meet this need.

On the Foundations of Futures Studies Education in Finland

It all began on October 10th, 1995, when a gloomy group was having lunch. Everyone had a shared feeling of troubled waters and the thought that something should be done, in order to continue the good start of the recently organised Finland Futures Research Centre that was clearly facing new challenges. The information society was taking its first steps, networks were offering a new rationale for co-operation, images of the future were in transition, futurists had also done joint projects earlier, and so on... By the time the party was having dessert, their mindset had changed, and the rest is history.

Futurists and future-oriented players around Finland started negotiating, persuading, intimidating, and visioning. As a result, the Finland Futures Academy (FFA) was founded. The FFA was constituted as a national network, comprising originally of 17 Finnish universities. Its main task was to establish futures studies as a new academic discipline within Finnish universities. The FFA developed its undergraduate and postgraduate study programs in close connection with its partner universities.

Since the beginning, its educational activities have been based on the following key concepts: interdisciplinarity, internationality, the interaction between theories and practice, and multiform learning methods. Something must have been done right, as the FFA has had more than 4000 students in its courses since 1998.

Interaction between Theory and Practice

Quite soon after the teaching of futures studies was established, it was time to move on. Consolidating the academic base (education, research, publications, etc.) of futures studies and deepening the co-operation between universities were the most important development tasks; Research activities such as the Millennium Project and research projects in the field of learning and education were launched, a wealth of new study materials was published, an annual seminar concept was created, the International Advisory Board (IAB) was founded, international courses were executed, the postgraduate school TULIO was organized, and so on.

Tailor-made Training Programmes

In the beginning of 2005, the Futures Focus (FF) education and development services were established at the Finland Futures Research Centre. Futures themes and lectures are a desired and integral part of the FF's activities and services. The FF is also seen as a multi-skilled and proactive partner, offering functional services for its clients' long-term change and development projects and processes. The FF has also been an active partner in the field of adult education.

Expanding Study Portfolios

After more than ten years of active work in the field of futures studies, it was time to specialise and start a Master's Degree Programme in Futures Studies, together with the School of Economics of the University of Turku. The Master's Degree Programme is designed for students who wish to work as foresight experts, helping organisations harness future opportunities. And for this same practical need, the FFRC also offers an International M.Sc. in Strategic Innovation and Future Creation, together with European partner universities.

In addition to futures studies, we offer study programmes on sustainable development and on responsible business. The sustainable development and responsible business team focuses on future challenges and opportunities of sustainability and responsibility, both in educational and research projects.

The Future of Learning and Education

Among the education unit within the FFRC, an on-going interest is focused on the future of learning and education. Interesting examples of on-going projects related to the theme

are "Get a Life", which is a career counselling simulation for university students, and "Koukku", which is a research and development project focused on secondary school students and their decisions about their future, as well as the roles of different information channels and their significance in the decision-making process.

Futures Glossary

Kondratieff Waves

Economic growth is not linear in the long-term, but appears to follow a wavelike pattern. One of those seeking to explain the duration and reasons of these waves was Russian economist Nikolai Kondratieff (1892–1938).

According to Nikolai Kondratieff, economies develop in cycles that generally last 40-60 years. Each of these cycles has a certain prime mover, a fountain of growth for that particular period. Important "engines" of Kondratieff cycles include e.g. electricity, the internal combustion engine and the chemical industry in the 1890s, transistor technology and the development of consumer electronics in the 1950s, and the widespread application of personal computers and information networks in the 1990s.

The idea of these long cycles is founded upon the notion that technological innovations herald the onset of new Kondratieff waves that reach their peak as technology matures. Gradually, each wave is superseded by the next technological innovation that initiates a new period of growth. However, the idea of Kondratieff's cycles has been criticised for focusing too much on phenomena typical of the Western world. Furthermore, the wave pattern has sometimes been accused of being biased and a result of over-interpretation of statistical data.

Despite the aforementioned criticism, Kondratieff waves are still widely used to explain the cyclical nature of economy. The prime mover of the next, the so-called Kondratieff's Sixth wave (2010–2050) is believed to be resource efficiency. Its catalyst is believed to be the rising energy and raw material prices that currently available technologies are not capable to lower. According to this thought, a sustainable competitive advantage can be found from technologies of scarcity, i.e. technologies that seek to address big global challenges such as climate change and its repercussions to mankind.

Rising to the Challenge

Learning and education seem to be gaining momentum, and we in the FFRC's Education Unit would like to thank all the people around the world who have promoted academic futures studies, and would like to invite you all to join us in the future as well! We still have a lot to do and many new ideas.

P.S. The lunch party that started it all included Professor Pentti Malaska, Dr. Anita Rubin, Dr. Jari Kaivo-oja and M.Sc. Päivi Salonen. Thank you all!



University - Community Interaction - Point of no return



Universities are interacting more and more with surrounding societies. The FFRC wants to be a proactive force for integrating civil society with the

academic world, in order to contribute toward constructive development, both nationally and internationally.

Traditionally within futures studies, participation and dialogue with societies, communities, stakeholders, and individuals are key elements in research processes, as well as in development projects. Interaction with surrounding society comes naturally to futurists, as they try to make sense of something that does not yet exist, but what is to be created together.

In general, the academic world has opened up to society and corporations, in order to co-operate more closely than before. This is, in part, due to research funding instruments that strongly support interaction and research that substantially contribute to the development of society or help tackle shared problems such as climate change, health problems or discrimination.

Promoting Outward-Looking Learning

A modern academic researcher is capable of having egalitarian dialogue with stakeholders, has cultural intelligence, visions for transformation processes, and the ability to create meanings of instrumental uses of research results. What is particularly important for modern academics is the integration of academic concerns with multidisciplinary knowledge, and lively contact points with their surrounding society. All this means facilitating the appropriate preconditions and fostering sufficient space, infrastructure, and confidence for students and new researchers. Universities across Europe are becoming increasingly involved in a range of outward-looking learning: work-based learning, gaining experience of the real world through community service and mentoring initiatives, widening experience within the curriculum through action learning and group problem-solving approaches, developing transferable skills, fostering independent learn-

> ing, and trying to create reflective practitioners.

At the moment, academic achievements or contributions are measured and rewarded mainly on the basis of publications and exams. Interaction with surrounding societies is integrated into research and education, instead of being seen as a separate and equal function of the university.

Even though much has been done to enable and encourage researchers and students to work with surrounding communities, a lot of work remains to be done especially on reward systems and the attitudes of decision makers.

Futures Oriented Processes Create Long Term Co-operation

The Finland Futures Research Centre works with several governmental organisations and is deeply involved in many development projects and processes with public and private organisations. The FFRC specialises in futureoriented strategy creation, especially in multiple actor strategy processes and producing futures insights for RDI processes, as well as fostering radical innovations.

We work with a wide variety of themes like future food consumption, technology foresight including biotechnology, forestry, and ship building industry, among other themes. Our expectations for future co-operation with the outside world are genuine two-way long-term relationships with open-minded people. The FFRC wants to be a proactive force for integrating civil society and the academic world, in order to contribute toward constructive development both nationally and internationally.

For us, community interaction is an ever widening and deepening process, and there is no way back to the academic ivory tower.

> Leena Jokinen Education Manager

New concepts of ships and cruises are created within versatile co-operation networks. Picture: STX Finland.

Futures Column

Greater Importance of Futures Studies today than in the past – and possibly in the future

Future-oriented thinking has been important for human thinking since the beginning of human history. The real interest in futures studies began at the end of the 1960s. It is important to diversify emerging needs as changes become increasingly rapid and important as time passes and new challenges arise in different societal environments. The importance of futures studies at present is linked to the development and the need to follow the opportunities provided by the speed and increase of communications media due to constant technological development.

All these changes require futures studies to look ahead into the future in both the long and short-term. Moreover, futures studies should take a broader view of changes in the present, so that the range of possible scenarios can extend to include more of the possible changes that are awaiting us.

The ties between the different fields that may possibly affect the future are becoming so numerous and interconnected that it is necessary to gain an overview of such ties that become stronger as time passes. It is sufficient to consider the ties emerging among the environment, the population, constantly developing technologies, changing and highly diversified population growth, as well as the rapid change (at different speeds) of social organizations, public or private; ties also based on different ethical, social and religious values, as well as on political and ideological choices and ecological rights.

It is probably understandable that the economic and managerial areas are those

chosen mainly in the countries that consider themselves more advanced, such as the US, Europe, and also China in recent years. It can be concluded that as changes have occurred in different times and in different parts of the world, this may be occurring through times in the future as well?

It should be kept in mind that changes are becoming increasingly rapid and interrelated, and this may also be true for futures studies as well. \bullet

Eleonora Barbieri Masini

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Latest Publications

Finel, N. & Tapio, P. (2012) Decoupling Transport CO₂ from GDP. FFRC eBOOK 1/2012. Finland Futures Research Centre. 41 p.
Ståhle, P., Ståhle, S. & Aho, S. (2011) Value Added Intellectual Coefficient (VAIC): a critical analysis. Journal of Intellectual Capital. Vol 12, issue 4, 531–551. Outstanding Paper Award Winner at the Literati Network Awards for Excellence 2012.

• EIO (2012) Closing the Eco-innovation Gap – An Economic Opportunity for Business. Eco-Innovation Observatory. Funded by the European Commission, DG Environment, Brussels. www.eco-innovation.eu/reports.

• Laakso, K. – Rubin, A. & Linturi, H. (2012) The role of regulation in the mobile operator business in Finland. Foresight Vol. 14, issue 2, 154–167.

• Vinnari, M. & Tapio, P. (2012) Sustainability of diets: From concepts to governance. Ecological Economics 74: 46–54.

• Kaisti, H. & Käkönen, M. (2012) Actors, Interests and Forces Shaping the Energyscape of the Mekong Region. Forum for Development Studies, 39(2), 147–158.

• Hietanen, O. et al. (2011) How to Create National Foresight Culture and Capacity: Case Study South Africa. Ekonomiaz N.° 76, 1.er cuatrimestre, 2011.

Upcoming Events

 6-7 June 2013: FUTURES OF FOOD.
15th International Futures Conference of Finland Futures Research Centre, Turku.

• 5–6 June 2014: SUSTAINABLE FU-TURES IN CHANGING CLIMATE. 16th International Futures Conference of Finland Futures Research Centre, Tampere.

Further information on our conferences: www.futuresconference.fi and other events: www.utu.fi/ffrc.

The Finland Futures Research Centre was established in 1992 as an auxiliary unit of the Turku School of Economics. Since the beginning of 2010, the FFRC has been a special unit of the University of Turku.

The FFRC specialises in futures research and foresight. It refines visionary knowledge regarding alternative futures and the challenges and possibilities included in them.

The FFRC has offices in Turku, Helsinki and Tampere, and employs more than 50 experts.

Professor **Pentti Malaska** (1934–2012)



Professor Pentti Malaska, Visionary and Futures Researcher, passed away on March 15th 2012, due to illness.

Professor Malaska was the founding father of the Finland Futures Research Centre, and one of the best-known developers of futures research on a global scale.

He was appointed Professor of Statistics and Mathematics at the Turku School of Economics in 1966. His dissertation topic was related to energy production. Issues related to nuclear energy became an important part of his expertise and critical research.

Pentti Malaska's life-long interest, however, was futures research. He was elected as the first Finnish member to the Club of Rome in the 1970s, and he created contacts and long-term friendships with a number of significant experts from different countries. Through this network, a groundbreaking idea came to Professor Malaska; futures research has the potential to find new kinds of procedures and decision-making models, providing alternative solutions to complex problems in the rapidly changing and globalising world.

Pentti Malaska was the founder of the Finnish Society for Futures Studies. He acted as its first long-term President and, later, Honorary Member. The work of the society, as well as Malaska's longterm personal efforts and commitment, gradually developed Finland's futures research into its internationally high level today.

As recognition for his outstanding work, Malaska was elected Secretary General of the World Futures Studies Federation (WFSF), and later the President of the WFSF during 1994–1997.

As futures research gained a firmer scientific footing amongst other sciences, the Finland Futures Research Centre was founded in 1992 as an auxiliary unit at the Turku School of Economics, with Malaska as its director. Malaska kept his post until his retirement at the end of 1997.

Pentti Malaska was by nature a Socratic thinker who enjoyed intellectual dialogue. He was an easily enthused and warm-hearted person. Working with him was extremely rewarding. He is remembered fondly and will be dearly missed. ●

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