Discussion Forum

Green Skills and Justice

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This paper is written from within a series of concurrent discourses and dialogues over the last 50 years, when I have been a researcher, research manager, writer and editor. This meant starting from a UK perspective of Skill and Justice, with the work of John Bellers, then moving to Scandinavia, and ending with a European synthesis and international systematisation, where we can regard our ongoing differences as a crucial resource for sustainable development.

Introduction

Over the last 50 years I have moved between different disciplines and countries, at each stage reflecting, writing and publishing. I have had to engage with diverse partners and use the vocabulary and concepts of the specialist fields. My own focus throughout has been on people rather than technology, on collaboration rather than competition. I write and publish in order to explain myself to myself and to others.

John Bellers

The ideas, writings and practical work of John Bellers provide my overall framework. He was a late seventeenth century English Quaker economist, whose work preceded current discussion of "Industry 4.0" etc. by over 300 years. He was cited by both Adam Smith and Karl Marx. He emphasised the importance of Skill in 1695, argued the case for a European state in 1710, and proposed a National Health Service in 1714 (Bellers 1695, 1710, 1714). He opposed slavery and empire and located work in the context of the needs of society.

Bellers recognised the changes in society in his day and argued for just ways of handling transitions in working life, with a central role for work. His principles are applicable today in the context of economic and social turbulence. Bellers brings a British flavour, albeit with

publications from 1695 and 1710, and I take it as a point of departure for my own work over the last five decades with a series of international partners.

Bellers wrote before the Industrial Revolution, and developments which gave undue emphasis to market forces at the expense of what Smith called "Moral Sentiments" (Smith 1759). Together with Adam Smith and Karl Marx, Bellers provides a European perspective which has been unjustly neglected. In this paper I appeal to a European intellectual past in which the UK played a central role. The intervening centuries could be seen as based on mistaken capitalist views of the economy and society. We might want to present Bellers as an early pioneer of Workplace Innovation, with principles such as co-ownership, partnership, respect for skill, and commitment to social equality.

I began my working life in 1973, managing a cardboard recycling project in North London with John Bellers Ltd, employing people who were officially regarded as unemployable. They were treated with respect, earned a wage, and paid rent as tenants of the Peter Bedford Housing Association. I was engaged in Action Research fifty years ago.

Bellers founded a "College of Industry" in 1695 (Bellers 1695), which influenced Robert Owen in 1817 (Owen 1817). In 1710 Bellers published a constitution for a European Parliament (Bellers 1710), and in 1714 he advocated a national system of hospitals: the basis for a National Health Service (Bellers 1714). He was ahead of his time, with a concern for skill, Europe and just transition! We are addressing long-standing questions.

Advanced Information Technology in the UK

I undertook teacher training, became a teacher of history and social studies in the UK and Nigeria, and used computers in the classroom from 1978 (Ennals 1979, 1980, 1981). This led me to research on computers in education, using "Logic as a Computer Language for Children" (Kowalski 1979). I worked at Imperial College London from 1980 and launched collaborative projects around the world (Ennals 1983, 1985).

In 1983 I worked with SRI International on an international conference in Cambridge which was intended to lay foundations for a new research laboratory with intellectual leadership from SRI (Benson 1986). I decided that I preferred to work with European partners, and a Human-Centred approach to technology.

In 1984 I was managing research at Imperial College Department of Computing, building a programme of research and development with government and business partners, with a focus on a new generation of computing technology. This was in line with the Japanese Fifth Generation Computing Programme (Fuchi 1981), which was intended to develop applications for use by ordinary citizens. Innovation was to be driven primarily by a managed "technology

push" in computer science, rather than "industry pull". Companies and universities needed to learn to "collaborate or die". Many UK IT companies died.

In 1985 I managed part of the UK National Alvey Programme in Advanced Information Technology, with a focus on Intelligent Knowledge Based Systems (Oakley & Owens 1989). The programme was based on a report edited by John Alvey of the Post Office. I was responsible for designing and managing the UK Logic Programming Initiative, a set of eight projects which was part of a collaborative programme concerned with the hardware and software of Declarative Systems, central to the Japanese Fifth Generation agenda. Our work was linked with the ESPRIT programme of the European Union. This reflected the strong European collaborative context of our research in logic programming.

The programme was criticised by researchers in the tradition of socio-technical systems thinking. For example, a "large demonstrator project" concerned with the administration of welfare benefits was technology driven and had only limited trade union involvement. The leading UK company in the Alvey Programme was ICL, which is now owned by Fujitsu of Japan. The current crisis in the Post Office caused by Fujitsu Horizon software demonstrates how little has been learned: deficiencies in the software were covered up, and 900 postmasters were prosecuted for apparent fraud.

The technology which I was managing was sought by the US Department of Defense, as part of their 1983 Strategic Defense Initiative (SDI), which was intended to protect the USA and their allies from attack by Inter-Continental Ballistic Missiles. This application would directly threaten the research which I was managing in the UK. Having been advised by senior colleagues, I resigned my posts, and I campaigned against UK participation in SDI, speaking and writing (Ennals 1986). In 1986 I was a co-founder of the journal *AI &Society: Knowledge, Culture, Communication*. I went on to edit six special issues of the journal, which continues today.

The UK government closed down the Alvey Programme in 1987, and there was no follow-on programme. Evaluators from the Treasury concluded that the programme was not profitable: this could not be expected of a research programme!

UK Bad Practice Case Studies

Having resigned my government funded research management posts in December 1985, I was able to adopt a more critical position, and I worked with a series of international partners. I have identified several UK "bad practice cases" over the years and explored what could be learned from overseas experience (Ennals 1995). The UK government has consistently declared that it had nothing to learn from experience in Europe, thus paving the way for the 2016 Referendum in which a majority voted to leave the European Union.

Amid the general atmosphere of European consensus in papers for this special issue, I can see a case for outlining some details of policy approaches which are markedly different. I could regard the UK as a rich store of "bad practice cases". Here are some current examples.

The manufacture of steel is fundamental to a modern economy. On 19th January 2024 it was announced that Tata Steel (owned in India) will close their two blast furnaces at Port Talbot (Wales), at the cost of some 2800 jobs. They will build new electric arc furnaces to process scrap metal but will no longer have the capacity to make steel from iron ore. Instead, such steel will be imported from India: offshoring the carbon emissions. The sudden forced transition is thus neither green, circular nor just. The views of the trade unions have been disregarded. Unemployment at the steelworks and through the supply chain will be considerable. There is an absence of alternative local employment. The UK previously reduced carbon emissions by closing almost all coal mines and outsourcing most manufacturing to the Far East.

Tata also owns Jaguar Land Rover, building luxury cars. As part of their move to electric vehicles, they will need to build a new battery gigafactory. A previously planned gigafactory project in Blyth was recently abandoned due to lack of investment. Nissan in nearby Sunderland currently operates the only battery gigafactory. The former British owned UK automobile manufacturing sector has shrunk and depends on foreign ownership. Electric vehicles also have the problem of a very limited infrastructure to support recharging. Investment has been far behind targets. It is not clear that British EVs will be sustainable.

Following Brexit, the UK withdrew from the European Horizon Programme, thus losing vital funding for collaborative research involving universities and companies. When I recently reviewed collaborative human-centred manufacturing project proposals for Vinnova, I encountered creative plans for future green developments and just transitions. Rather than being European and collaborative, the UK places more emphasis on links with the USA, including in defence technologies.

Despite commitments made at COP26 and COP28, the UK is opening a major new coal mine in Cumbria and issuing new licenses for drilling for oil and gas in the North Sea. Deadlines for stages towards net zero are being relaxed by the present government.

This generally parlous situation helps to explain why, since leaving my roles as a research manager with the UK government in December 1985, I have worked with partners in Scandinavia and Europe, as well as in Africa and Asia. My autobiographical account in this paper highlights the presence of sustainable alternatives, with roles for active government and new development coalitions. I have hoped to encounter alternative approaches which could be applied in the UK and present them to an incoming government following the imminent General Election. I have explored contributions from the Quality tradition (Ainger, Kaura & Ennals 1995; Ennals 1995; Hutchins 2006, 2019, 2023).

Working Life Research in Scandinavia

From 1986 I moved my research base to Sweden, while retaining an academic base in Kingston, at Kingston College and then Kingston University. I worked with Bo Göranzon at the Royal Institute of Technology (KTH), who was interested in "What Computers cannot do" (Dreyfus 1972), and the role of "Tacit Knowledge" (Polanyi 2972). He led the Dialogue Seminar at the Royal Dramatic Theatre from 1986, and hosted the conference "Culture, Language and Artificial Intelligence" in Stockholm in 1988. His approach was based on reflections on Professional Skill, with case studies in "Practical Knowledge", resulting in a PhD programme "Skill and Technology", which was linked to a series of six books published by Springer (Göranzon & Josefson 1988; Göranzon & Florin 1990; Göranzon & Florin 1991; Göranzon & Florin 1992; Göranzon 1992; Göranzon 1995) This emphasis could be contrasted with the British focus on observed "Competence", in new initiatives in Vocational Qualifications. Göranzon applied his Dialogue Seminars approach through consultancy with Saab Combitech, and with Vattenfall nuclear power (Göranzon, Hammaren & Ennals 2006). His student Johan Berglund applied the approach to nuclear safety and studied the Fukushima nuclear disaster: his theme was "Formalisation and Skill" (Berglund 2016). Göranzon's colleague Björn Nelson at Linnaeus University applied the approach to education and training in the Swedish construction industry, with a project in which workplace supervisors became vocational trainers.

From 1988 I also worked with Björn Gustavsen, in Sweden and Norway, as well as across Europe. With an initial background as a lawyer, drafting the 1977 Norwegian Work Environment Act as an action research project (Gustavsen & Hunnius 1981), he was a leading thinker in organisational development, with a pattern of organising Dialogue Conferences. He presented a central concept of "development coalitions", in which disparate partners could collaborate to achieve common objectives. This provided a locomotive for regional development (Gustavsen, Hofmaier, Ekman Philips & Wikman 1996; Gustavsen, Colbjornsen & Pålshaugen 1997; Gustavsen, Finne & Oscarsson 2001; Fricke & Totterdill 2004; Gustavsen, Nyhan & Ennals 2007), and a series of Norwegian national programmes (Levin 2002), as well as European initiatives in Work Organisation (Ennals & Gustavsen 1999). From 1998 I was an editor of the journal *Concepts and Transformation* (later *International Journal of Action Research*), which was founded by Gustavsen together with the book series *Dialogues on Work and Innovation* (for example Greenwood 1999; Emery 1999). In the final months before his death in 2018 Gustavsen worked with the Norwegian Labour Market parties to develop a new collaborative programme based on addressing issues related to climate change.

In addition, from 1997, I worked at the Swedish National Institute for Working Life with the programme "Work Life 2000: Quality in Work", in which Sweden set out a distinctive perspective for future European collaborations in Working Life Research. I was rapporteur for a series of 64 specialist research workshops (Ennals 1999, 2000, 2001). There was a strong Swedish emphasis on workplace health, driven by a coherent occupational health research community (Karasek & Theorell 1990; Marmot 2004). There was kaleidoscopic coverage of working life research, but without the emergence of a single view of knowledge.

Specialist groups of researchers could participate in dialogues which provided a "patchwork quilt" representation of the field. I learned to speak and write in the various specialist languages, but without claiming personal practical expertise. Following "Work Life 2000", I worked on "Work Life and EU Enlargement", with the 10 EU applicant countries. Bengt Knave of the National Institute for Working Life, who led that programme, was also President of the International Commission on Occupational Health (ICOH), and we worked to address working life issues in developing countries (Elgstrand 2009).

In Norway from 2002, at the instigation of Björn Gustavsen, I worked with the PhD programme "Enterprise Development and Working Life" (EDWOR), based at NTNU, with quarterly week-long teaching sessions around Norway, as well as in Turkey and the USA. Our PhD students were also salaried researchers in a set of funded projects around Norway: we were building a research culture for the new generation. My students then continued as my research partners. Some, such as Trond Haga (Haga 2007), worked in the offshore oil and gas industry, and pursued research agendas related to energy policy. The Norwegian government was conscious of the need to prepare for economic development after the peak use of oil and gas, supporting a balanced programme of research through a network of research institutes. James Karlsen (Karlsen 2007) worked on territorial development, with a methodology based on Action Research (Karlsen and Larrea 2014). I have worked with Hans Christian Garmann Johnsen at the University of Agder (Johnsen & Ennals 2012; Johnsen 2014, 2223; Johnsen et al 2015, 2017, 2018).

In Finland I worked with Jorma Rantanen at the Finnish Institute of Occupational Health, during his period as President of ICOH, following Bengt Knave. I continued to serve as a rapporteur, with ICOH, WHO and ILO.

Collaborative Research with the European Commission

The European Commission supports programmes of collaborative research which are intended to develop partnership and dialogue between member states. They are organised by several different Directorates-General, with published programmes of work.

From my base at the Centre for Working Life Research at Kingston Business School, I engaged in several international collaborative research projects in the applications of Information Society Technologies, taking me into fields such as mobile technologies, employment and recruitment, remote aircraft maintenance, stress at work, and the health of older workers. What these various projects had in common was that they crossed conventional barriers between disciplines and areas of governmental responsibility, at national and European levels, and involved work from different perspectives. I was also involved in evaluating collaborative research proposals, advising funded projects and troubleshooting when problems arose.

A recurrent theme was the exploration of how technology could be applied, and the limits of those applications. Researchers came together with backgrounds in different philosophies of knowledge. This could result in thorny problems. Qualitative and quantitative research were brought together, highlighting areas of misunderstanding. Some researchers made unrealistic assumptions regarding ease of automatic translation between European languages when dealing with job titles and educational qualifications. Others were over-ambitious regarding the formalisation of tacit knowledge (Polanyi 1972). Projects were encouraged to produce final reports which dealt with "lessons learned". These could be the most important outcomes! Project officers faced the challenge of managing portfolios of projects which had been proposed and evaluated by others and did not necessarily comprise coherent programmes.

Workplace Innovation

From 1997 I also worked with Peter Totterdill and the UK Work Organisation Network (later Workplace Innovation Ltd and Workplace Innovation Europe), which built a collaborative framework in a country, the UK, which lacked the Scandinavian tradition of consensus. We brought together the "Social Partners" (trade unions and employer organisations) with a series of projects. There were strong links with EU partners, which have been sustained until the present day. We organised the conference on "Working Together" for the UK Presidency of the European Union in early 1998.

In 2013, the European Commission supported the establishment of the European Workplace Innovation Network (EUWIN). From 2015, the *European Journal of Workplace Innovation* (EJWI), of which I was an Editor and then Editor in Chief, added the support of an international journal, published at the University of Agder, Norway: free, open access and online. In 2016, the Brexit Referendum, in which the UK voted to leave the EU, prompted the formal relocation of Workplace Innovation Europe to Ireland, enabling European funding for international collaboration to continue. EUWIN achieved a sustainable existence through self-financing and took on an ongoing portfolio of collaborative projects. I was appointed Honorary Advisor.

A European Approach

This summary chronology provides the backdrop for the emergence of a distinctive European approach to work and innovation. There has been "no one best way", but common themes have included: a respect for Skill, a concern for Sustainability, and an emphasis on Social Justice, accompanying labour market developments with a central role for Social Partnership. These themes are central to the current European focus on "Green Skills" and a "Just Transition", which involves bridging the specialist fields which are covered by Directorates-General in the European Commission.

We have, for example, considered the health of older workers (Ennals & Salomon 2011), and encouraged the Workplace Innovation movement, which has gained in popularity in Europe and internationally (Totterdill 2015; Oeij et al 2017, 2023). Rather than adopting the narrow capitalist focus on "Industry 4.0", we have taken a Human-Centred approach (Brödner 1990; Ainger, Kaura & Ennals 1995), building a collaborative culture in which we "learn from differences". The current diversity of new initiatives can be labelled "Industry 5.0". We seek the empowerment of workers, a participative style of management, and the evolution of a culture of "Skill" (Göranzon et al 2006), rather than the imposition on others of Taylorist requirements for "Skills".

Current Research Issues

There are several ongoing research issues concerning "Green Skill and Just Transition", which are important for the UK and countries across Europe:

Should we simply focus on quantitative measures of Training and Skills, or look at Work Organisation and the role of Skill? How can we encourage Work-Based Learning? What is the changing role of CEDEFOP? (Gustavsen, Nyhan & Ennals 2007).

When we consider "Green" "Skills" or "Skill", should we focus on new approaches such as the "Circular Economy"? How can good practice be shared? What are the preconditions for success? (Abrahamsson & Ennals 2022)

How do European Commission Framework Programmes encourage and develop processes of Dialogue (Larsson 1997)? What are the roles of research partners and European Commission project officers? How can we encourage pre-competitive collaboration, involving universities, companies and institutions?

How should we better deal with issues at the interface between specialist discourses, such as "Stress at Work" (Karasek & Theorell 1990; Marmot 2004; Cooper 2005, Levi 2022)? How can this be problematic? What are the institutional obstacles in the different professions?

How should we address problems of health and safety at work (Ennals 1999, 2000, 2001; Abrahamsson & Ennals 2022)? What is the role of the European Commission and European institutions such as Eurofound and EU-OSHA (Abrahamsson & Ennals 2022)? How should responsibilities be divided between the European Union and member states?

In the context of rapid changes and transitions in working life, how can we address "Justice"? How does this relate to "European Social Dialogue"? Can we identify separate traditions and find ways of bringing them together, learning from our differences?

How should we draw on different European traditions in working life research? Can we tackle issues in the philosophy of knowledge (Wittgenstein 1922, 1953; Johnsen 2023)? For example, how can research based on medical model work alongside conventional social science research? Can social scientists learn from the medical model of clinical intervention (Toulmin 2001)?

What is the role of EUWIN as an enabling network structure in this emerging collaborative context? This article is intended for publication in EJWI, which works in close association with EUWIN.

Conclusion

I suggest that these questions have in common that they require engaged researchers, rather than a conventional scientific detachment. They also require some understanding of the history of recent centuries, from which current trends and debates have emerged. This includes a need to understand developments in other continents, such as Africa (Bam 2021), and Latin America (Freire 1968). Traditions in different continents can be bridged through systematisation (Streck 2012). Thus, for example, EJWI is published in Europe, but welcomes contributions from around the world.

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