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Abstract: What is distinctive about the Swedish contribution to progressive worklife reform, and what does it contribute to the current job quality literature? Sweden has produced a disproportionate share of the world's research into social and organizational aspects of work and is among the leaders in work democratization research and practice. Work design at Volvo Uddevalla was a counterpoint to lean production in the late 1980s and 1990s. We argue that institutional and political characteristics of Sweden, partially registered as the 'Swedish model' underpinned these developments. In the 'golden age' of worklife reform from the mid 1970s to the mid 1980s, an unusual degree of employer support for job quality complemented trade union activism and supportive government research policies. The chapter argues that Sweden's key contribution to current discussions around job quality lay in developing team-work with high levels of autonomy related to the democratization of work, interacting with action-oriented research and job design, and exploring the boundaries of such developments.

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Introduction

The recent flowering of job quality (JQ) literature makes surprisingly little reference to the Swedish contribution. Sweden produced a disproportionately large share of the world's 'work environment' research in particular areas related to JQ, in absolute figures third in the world after the USA and Britain in the years 1986-1990; in the period 2011-2015 Sweden's ranking had dropped to eighth place. The stagnation after 2009 has been interpreted as an effect of the *Arbetslivsinstitutets* gradual cutbacks and then closure in 2007 (SWEA 2015, pp. 9-10). Comparative research has placed Sweden at or near the top of OECD countries on key job quality indicators (Gallie 2003, 2007; OECD 2018). Research institutions, such as the Swedish Centre for Working Life (*Arbetslivscentrum)* (from 1996 the National Institute for Working Life (NIWL, or *Arbetslivsinstitutet*), attracted international researchers during a 'golden age' of workplace research and reform from the mid-1970s to the late1980s. Redesigned car assembly in the Volvo Cars assembly plant at Uddevalla offered alternatives to mass production and even to lean production (Berggren 1988; Sandberg 1995; Boyer and Freyssenet 2000), before being overtaken by increasing neo-liberal influence on Swedish worklife and labour market policy as well as related research (Sandberg 2013a; Håkansta 2014b). Even so, we argue, exploring the Swedish experience of progressive worklife reform yields lessons for JQ.

A definitive list of JQ's dimensions is elusive (Findlay et al 2013; 2017). Grote and Guest (2017, 151, 156) suggest returning to Walton's eight categories of Quality of Work Life (QWL) – adequate and fair compensation, safe and healthy work environment, development of human capacities, growth and security, social integration, constitutionalism, total life space, and social relevance. In addition they propose 'individual proactivity' and 'flexible working'. Frege and Godard (2014, 943) have similarly proposed that JQ is 'the attainment of civic principles at work' – freedom, equality, fairness, justice, security, dignity, fulfillment and democracy.

These principles have a distinctly Swedish and Scandinavian ring about them and they echo previous work by Emery and Thorsrud (1976). This duo of researchers (Australian

and Norwegian) emphasize what they call the 'psychological job demands' of work. This is similar to the contemporaneous and influential 'job characteristics' model of Hackman and Oldham (1976), that links characteristics of the work (skill variety, task variety, task significance, autonomy and feedback) to the psychological state of the worker, in particular their motivation.

Emery and Thorsrud (1976, 103-105) also identify how work characteristics, like optimum length of work cycle, interlocking tasks and job rotation, worker role in setting quality standards and in the design of work – along with provision of feedback, an identifiable contribution to the job that contributes to the utility of the product for consumers, and a career path that may or may not involve promotion to management – affect workers' psychological states. Abrahamsson and Johansson (2008, 7, our translation) also emphasise that the worker should be able to learn and develop at work, as well as to make decisions 'at least within a defined area that the individual can call his or her own'. The overall job should entail some respect and an identifiable connection between work activity and something considered 'useful and valuable' in the outside world. This is in fact a 'normative theory of how good work should be'.

Conflict over control of the firm in the 1970s-80s set the scene for the Swedish contribution to JQ. Influential Swedish social democratic intellectuals and strategists, like Ernst Wigforss, had argued that industrial democracy was a logical extension of political democracy, to be pursued alongside economic democracy (Sandberg 1992, 57; Higgins and Dow 2013). Ideals of worklife democratisation, including 'quality in work and product', inspired action research, in which workers, unions and researchers cooperated to shape organizational and technical change. Employers supported work reform and improvements in job quality, but not industrial democracy, much less economic democracy. Unions sought to extend their workplace power through 'codetermination' legislation, and action research. Government research policy was a strong influence. These developments reached a high point in the iconic and controversial Uddevalla Volvo car assembly (Ehn 1988; Sandberg 1992; 1995).

Behind this legislation lay several strikes, including a major one in the northern LKAB iron ore mines. Research on employee influence in LKAB became a study of the strike, the focus of which was human values at work and opposition to detailed control via MTM (Dahlström, 1971, led a group of leading sociologists of work).

Our first section below begins by sketching the 'Swedish Model', and Sweden's distinctive 'management style'. We then argue that the Swedish contribution to JQ arose out of a class-based contest over the control of the firm. The second section explores how union strategy problematized the control of the firm. Unions prevailed upon their labour movement partners, the Social Democrats, to legislate power sharing in the firm, which itself became an object of research, following government research policy. We explore the 'golden age' of working life research in Sweden in the 1970s and 1980s in section three. Union-oriented 'action research' encouraged skill utilization and participation while at the same time investigating workers' capacity to influence technological and organizational change in a strategy also including researchers' independent theoretical reflection – praxis or interactive research (Sandberg 1985; Aagard-Nielsen and Svensson 2006). Union strategies to increase power in the firm ultimately collided with the advance of neo-liberalism, and associated shifts in government policy. The 'lessons', if that is an appropriate term, are about how JQ entails increasing workplace participation, and how this collides with capitalist control relations.

1. The Political-Economic Foundations of Worklife Reform in Sweden: The Swedish Model and 'Management Style'

In seeking an explanation for the flowering of progressive worklife reform and research in Sweden, we begin by identifying historical and structural features of the Swedish political economy, known as the 'Swedish Model'. A defining feature is the quest to reconcile industrial transformation and productivity with welfare and equality. Swedish 'management style' was seen as innovative, participative, value-based and 'visionary', but is now increasingly following international neoliberal trends towards market-related workplace control (Movitz and Sandberg 2013, 44, 53-54).

1i) The Swedish Model and Swedish Management Style

Swedish political economic history suggests JQ, welfare, equality, and individual autonomy can be consistent with productivity, innovation and competitiveness (Movitz and Sandberg, 2013, 38). For much of the 20th century, during a long period of social democratic incumbency, Sweden enjoyed strong economic performance alongside social progress. Admired aspects of the 'Swedish model' included: universal education and health care; a relatively low gender pay gap; high female labour force participation; high union density; cooperative management of industrial relations through highly organized representative bodies; union influence over aspects of public policy (including industrial policy); and the universalistic social democratic welfare state (Kjellberg 1998). Gallie (2003) found that employees in Sweden and Denmark enjoy higher JQ than OECD comparators. Sweden scored highest on indicators of quality of work task, security against dismissal, and employee participation in decision-making (also see Gallie 2007).

More recently, the OECD (2019) ranks Sweden fourth for job quality, behind three other Nordic countries. Reflecting high quality work organization, Sweden is in the OECD's bottom quartile for job strain (OECD 2018). Sweden also has the fourth lowest gender pay gap, as a result of decades of gender-friendly policies. It has the third highest employment rate in the OECD, while the employment gap between disadvantaged groups and prime-age men is the second lowest in the OECD (after Iceland) despite the challenge of integrating large numbers of recent migrants (OECD 2018).

We agree with Findlay et al (2017, 6) that at a national level, 'strong institutional environments' shape JQ. The *varieties of capitalism* literature identifies Sweden as a 'coordinated' political economy (Hall and Soskice 2001), characterized by negotiations between highly centralized peak bodies of employers and unions. Katzenstein (1985) has argued that 'cooperation' and 'consensus' naturally arise between political interests strong enough to greatly damage each other. Other writers emphasize the

class-based nature of Swedish politics, characterized by a 'democratic class struggle' and political mobilization around socialist aims (Korpi 1978; Higgins, 1980, 1985). The socialist origins of labour movements are too often (in our view) written out of history, and in the Swedish case they have been important to understand the strategic maneuvering of the labour movement and the employers. This is notwithstanding that even 'social' versions of coordinated economies have recently undergone some degree of neo-liberal transformation and union weakening, and so we may talk of *varieties of liberalization* (Streeck, 2017) although some more than others (Thelen, 2014; Baccaro and Howell, 2017).

A feature of Swedish political institutions has been the close links between the Social Democratic Party (*Sveriges socialdemokratiska arbetareparti*, SAP), formed in 1889, and the union peak organization, LO (*Landsorganisation i Sverige*) in turn formed in 1898 on the initiative of the SAP. Sweden's employers established their central organization (*Svenska Arbetsgivareföreningen,* SAF, today *Svenskt Näringsliv*, SN) in 1902, and bitter industrial disputes followed. In the so-called December Compromise of 1906, SAF recognized the unions' rights to exist and to organize and collectively bargain, while LO accepted the employers' rights to hire and fire, and to organize work. According to the so-called 'paragraph 23' (eventually changing to paragraph 32) of SAF's bylaws, SAF would not permit any member organization to sign any agreement with a union that made concessions on basic managerial prerogatives. This would become a key issue in the politics of participation in the 1970s (Higgins 1986; Victorin 1979, 113-4; Bruhn et al 2013).

The depression years were again marked by labour market conflict, and in the 1938, 'basic agreement' (named for the seaside town *Saltsjöbaden* where it was signed) LO and SAF reaffirmed the 1906 compromise but extended its terms (Martin 1992). Labour and capital would cooperate in the pursuit of economic growth via technical change, while capital retained its workplace prerogatives – to hire and fire and organize work. Labour retained the right to organize and bargain but would also pursue political action (via its links to the SAP) to build a welfare society (Korpi 1978; Sandberg et al 1992, 40-41). 'Joint regulation' of the labour market saw the state

recede into the background of industrial relations. Highly centralised political exchanges between SAF and LO set wages and other policy parameters, while white collar and professional union peak bodies during the 1980s bargained outside of LO's influence. Unions cooperated with industrial change, driving the latter through their wages policy (see below), and eventually problematising control of the firm. (Kjellberg 1998; Bruhn et al 2013.)

Contemporary writers emphasise tension between JQ and efficiency (Grote and Guest, 2017, 153). Yet historically this opposition has not been as stark in Sweden. The positive side of Swedish 'value-based and visionary management', accepts employee participation, autonomous work groups, union influence, open dialogue, consensus, and informality as Movitz and Sandberg (2013, 44, 53-54) argue. On the other hand, in recent times, management increasingly couples work to the market, to customer interaction, tough evaluation of projects and a general pressure to be 'better'.

Work may indeed be 'without boundaries' (Allvin 2011) and loosely regulated with no detailed prescriptions as to how, where and when to carry it out, but this now often comes with tough market-related measurement of the final outcome linked to compensation, negating any real autonomy in the immediate work situation (Movitz and Sandberg 2019). This can result in negative stress, burnout and depression, the quickest growing type of work-related illnesses today in Sweden, especially among women. For the immediate work situation, we may apply the Karasek-Theorell model (1990) where 'active' jobs with high demands *and* high worker control stand out as good jobs, but also those jobs can easily turn out to be not so good, and result in negative stress ('strain', in Karasek and Theorell's nomenclature) when subject to an overall managerial and market-related pressure for greater work volumes and continuously improved performance

Swedish employers historically sought to balance JQ and efficiency. The SAF manifesto for 'New Factories' in Sweden (Agurén and Edgren 1980, 8) identified '… two goals – more efficient operations and better jobs for individuals'. Similarly, as one of the most

significant employer advocates for work reorganization, Pehr G. Gyllenhammar the CEO of Volvo, put it

> Manufacturing work must be organized so that it requires knowledge and initiative, includes different types of tasks with varying content and difficulty, offers variation, gives employees influence and responsibility through participation in the planning, organization and follow-up of the work, and meets the employees' need to learn and grow, and of a sense of community and belonging (Volvo 1974, 11, quoted in Boglind 2013, 191).

For Gyllenhammar, employee participation was one of the defining features of the Swedish approach to JQ. *Employers actively promoted* it – until it clashed with management authority and melded with union demands for the democratization of work.

1ii) Swedish Worklife Reform: Participation and Democracy

The Swedish worklife reform movement built on the sociotechnical reaction to Taylorism, and the Tavistock studies of longwall mining in English coal mines. This work stressed that group work and shared responsibility were superior to conventional Taylorist methods in terms of productivity as well as JQ. Small groups with a high level of independence and autonomy, with enriched jobs and possibilities for learning performed at a superior level than those designed under Taylorist and individualist work organization principles. On this view, it was possible to 'jointly optimise' social and technical work requirements (Cole 1989). Working in such arrangements should produce greater degrees of job satisfaction due to the greater 'sense of control over their everyday activities on the shopfloor' (Cole 1989, 19). Accordingly, SAF undertook a 'study mission' to Norway, supported the translation into Swedish of Fred Emery's and Einar Thorsrud's (1969) work about industrial democracy inspired by the Tavistock studies, and attempted to 'kick off' worklife reforms by sponsoring the so-called '*Hallelujah conference'* in 1969*,* featuring

Thorsrud as keynote speaker. It set up a new technical department, to examine work organization issues and make proposals (Cole 1989, 252-56).

According to SAF (today SN), assembly lines' inherent limitations could be solved by work reorganization (Agurén and Edgren 1980). Assembly lines were inflexible, consisting of short-cycle work stations tightly linked together. Unless workers took the same time to complete a cycle (as in a perfectly balanced line), there would be unproductive 'idle' time. Workers were tied to the pace of the line, and could not work ahead to create small, personal breaks. The solution was to organise work in production teams. Line balancing would happen automatically as workers helped each other and shifted between tasks within groups. Job content could expand into longer task cycles and a greater degree of freedom from work pacing. Each individual worker could take responsibility for a larger component of production, and workers could distribute work among themselves (Agurén and Edgren 1980). 'Self-managing teams' or 'semi-autonomous work groups' could 'make their own decisions regarding work allocation, recruitment, planning, budgeting, production, quality, maintenance and purchasing'. They could take responsibility for the overall organization of work. From management's point of view, it was important to limit such initiatives to engendering a 'feeling' of participation (aka empowerment) rather than allowing substantive 'power-centered' participation (aka the democratization of work) (Cole 1989, 19, 31).

The Swedish Employers' Federation (SAF) accordingly advocated the 'coordinated independence of small systems', or partially autonomous units coordinated by management (Agurén and Edgren 1980). Emery and Thorsrud (1969, vii) however, argued that involvement of workers in the decisions that affect them would solve management coordination problems, but it could also provide opportunities for employee development by worklife participation (Emery and Thorsrud 1976). Trade unions wanted increasing control, coordination by workers' elected representatives, and the democratisation of working life (Sandberg 1992; Movitz and Sandberg, 2013, 58; Higgins and Dow, 2013).

This resonated with interests of leading labour movement socialist intellectuals such as Ernst Wigforss, Treasurer, in the SAP government, (who's expansionist economic policy contributed to the SAP victory in 1932 and ushered in unbroken SAP rule till 1976). Like the English Guild Socialists, Wigforss saw the workplace as an arena for workers' education and the development of political efficacy through participation in workplace decision-making (Higgins and Dow 2013; also see Pateman 1977). Wigforss rejected the idea that there was necessarily a 'great tradeoff' between equity and efficiency. Indeed, he argued that authoritarian relations at work wasted human capacity and denied the possibility that workers might increase workplace efficiency out of their own knowledge of the production process (Higgins and Dow 2013, 105-107). Ultimately, the debate over the democratisation of work raised far-reaching issues of worker influence on product quality and product choice and, in relation to the latter, the 'social usefulness' of production (Cooley 1981, Ehn 1988).

2. Influences on Worklife Reform: Union Strategy, Co-Determination Legislation, and Government Research Policy

Union strategy has too often limited itself to 'distribution issues' (like wages and conditions), but in Sweden 'production issues' like work design and decision-making power at work – an essential aspect of JQ – increasingly came within its purview. This section traces the development of union strategy through wages policy under the Rehn-Meidner labour market model, and unions' response to the employers' reforms initiatives. As to distribution issues, the union wages policy was solidaristic. It drove industrial restructuring by narrowing wages differentials across the labour market, following principles of 'equal pay for equal work' irrespective of profitability of the individual company. Active labour market policy and worker retraining underpinned this strategy. As to production issues, unions sought legislative reform to improve worker's bargaining position at work. Government research policy was a big influence in this mix, as (during the heyday of Swedish progressive worklife research), it promoted research into workplace power sharing arrangements.

2i) Wages Policy: Economic and Industrial Democracy?

In the 1960s, LO strategy, articulated in the influential Rehn-Meidner model (agreed at the LO conference of 1951), sought to modernise industry and shape labour movement structure, cohesion, and political capacities (Meidner 1980). 'Solidaristic wages policy' aimed to narrow wage dispersion by restraining wages at the upper end of the working class, while boosting wages at the lower. This put pressure on inefficient firms, on the rationale that if a firm could not afford to pay 'fair' wages, it should go out of business and its resources be deployed elsewhere in the economy. This would help move towards a high-wage and high-skill industrial structure. Displaced workers would be offered income support and retraining (Meidner 1994; Martin 1992).

Solidaristic wage policy pursued in a full employment economy also stimulated the movement for workplace reform. In the manufacturing sector, particularly in the automotive assembly, employers were faced with labour shortages due to low JQ in their factories, and because the solidaristic wages policy restricted their capacity to compensate workers with high wages (Higgins 1985; Martin 1992). Thus in the 1960s the employers' peak body began to examine the possibilities of worklife reform to improve JQ as a means to compensate for lower pay, while solving line balancing problems in production.

The Rehn-Meidner model's implementation raised strategic dilemmas resulting from the fact that some unions were stronger than others and could have gained wage increases that exceeded the centrally determined amounts (so-called 'wages drift'). If they had pressed these claims, weaker unions would have fallen behind, wages dispersion would have increased, and the overall cohesion of the movement would have suffered. On the other hand, if the stronger unions did not claim the potential wage increases (consistent with the solidaristic wages policy), this would have left profits in the hands of employers, permitting conspicuous consumption and unproductive speculative investment. If its authority over its constituents was to remain intact, the union leadership had to persuade the stronger sections of the union membership to restrain their wage demands. In other words, there had to be a *quid*

pro quo for wage restraint (Meidner 1980, 1994; Higgins, 1985; Higgins and Dow 2013).

The proposed solution to the strategic dilemma was for 'excess' profits to be paid into collectively controlled wage earner funds that could finance economic expansion and advance the democratization of capital (Higgins 1985; Higgins and Dow, 2013). In the resulting controversy unions, and, to an extent previously hardly seen employers mobilized in the streets; the first 4th of October demonstration gathered about 100 000 opponents of the funds. The political right lobbied in the media (which they powerfully influenced). Prior to national elections the social democrats withdrew the radical proposal. The ideological backlash against economic democracy – what the right characterized as 'creeping socialism' – was also a setback for the union movement, although, according to one commentator (Ingemar Göransson, former senior researcher at Metall and LO, personal communication) employers' absolute refusal to share power over investment was balanced, in a 'spirit of compromise', by willingness to negotiate over improvements to JQ.

By the mid-1980s the economic democracy strategy gave way to one more centred on the workplace, with a shift from 'solidaristic wages to solidaristic work' (Mahon 1991). The strategy was developed by the Metal Workers' Union and articulated in its seminal document, which announced nine principles of *Det goda arbetet* (The Good Work) (Metall 1985; Johansson and Abrahamsson, 2009, p 776). These were: Job security; A fair share of production earnings; Co-determination in the company; Work organisation that emphasised cooperation; Professional know-how in all work; Training to be a normal part of work; Working hours based on social demands; Equality at the work place; And a working environment without risk to health and safety.

In summary, 'good work' involved skills upgrading within a given position linked to wage development, multiskilling, 'solidaristic' teamwork and shared decision making (Mahon 1994). As was the case in solidaristic wages policy, 'good work' should be equally distributed across the working class. Yet as unemployment grew, and as

Johansson and Abrahamsson (2009) argue, concerns about 'good work' (JQ) were overtaken by concerns about employment – job quantity.

2ii) The Co-Determination Legislative Reforms

Union cooperation with work reorganization posed dangers. If work reorganisation harmed working conditions and undermined occupational health and safety, worker trust in their union would be undermined. For unions to exercise a truly protective role and not acquiesce to employer-controlled participation, truly joint decision-making power, including the power of veto, was needed. This meant challenging paragraph 32, and so much was agreed at the 1971 LO Congress (Higgins 1986, 255). Accordingly, in the 1970s, the sympathetic Social Democratic government legislated to support union influence on management decision-making, signalling a break with the tradition of non-intervention in the labour market.

In 1976, the government enacted the *Co-Determination Act*. The Swedish term *Medbestämmandelagen* (abbreviated to MBL) translates to English as 'co-determination act'. Expectations of MBL were high. Olaf Palme hailed it as 'perhaps the greatest democratic reform in Sweden since the introduction of universal suffrage' (ACTU/TDC 1987, 141). On the other hand, left critics referred to it as a futile attempt to 'reconcile the irreconcilable' – '… to straddle two irreconcilable positions' – and as little more than an obligation on management to 'honk the horn' before running over workers (Higgins 1986, 259-60). Victorin (1979, 118) emphasises that union influence was overstated and argues the Act was not designed 'to change the fundamental principle of the employers' right to manage'. While true, MBL and other related legislation did tilt the balance of power toward labour, as it gave access to information and the right, if not to exercise final power, at least to discuss and to get the employers' arguments on the table.

The Act made it an employer's duty to bargain over joint regulation if the union demanded. The union could make demands that infringed managerial prerogative, although employers did not have to agree to them. Second, the employer had a

‘primary duty to negotiate regarding essential business changes’ – including ‘important alterations of business activity or of work or employment conditions for a member of the established negotiation’. But ‘the right to make decisions remains with the employer; the unions’ negotiating rights are limited to requiring the employer to give reasons for his actions and to listen to the arguments of the union’. Third, the Act required the employer to keep the union informed of any impending new developments. Fourth, it gave primacy to the union’s interpretation in disputes. Fifth, the union could veto sub-contracting where there was reason to suspect evasion of an employer’s obligations regarding, for example, social insurance and collective agreements. These changes were a big step forward for workers’ and unions’ rights at the firm, although they were not a fundamental change in power relations (Victorin 1979, 119-124).

In 1976 the Social Democrats lost government just before the MBL Act took effect, in 1977. This emboldened SAF, which began to withdraw from the centralized bargaining and other ‘corporatist’ arrangements. Employers refused to negotiate over the issues over which LO sought shared decision making, including: personnel policy and administration; work organization and management; information about management matters; the introduction of computers, and access to databases; employee consultants; and education in paid working hours (ACTU/TDC 1987, 142). After the enactment of the MBL law co-determination agreements followed. The agreements in general softened the language of negotiation, most so in the private sector where in 1982 a co-determination agreement was concluded that ‘integrated negotiations’ into bipartite groups or committees and even into the day to day activities in the organization.

2iii) The influence of research policy

As Håkansta (2014a, b, 3,10-12) has argued, the prominent role the social partners enjoyed under the Swedish model influenced government support for worklife research. This resonated with trends in science policy. In general, scientific research tends to move between ‘mode 1’ research, which is characterized by an emphasis on

political neutrality and scientific quality (as defined by scientists) and 'mode 2' research which is more concerned with the relevance and 'application' of science to 'real problems' that may have a political dimension. From 1945 to the 1960s Swedish research was predominantly applied, but oriented to defence and cold war concerns rather than broader societal ones. According to Sörlin (2016) from 1960 to 1985 there emerged a strong belief in the political control of research, and this coincided with increasing application of research to 'mode 2' 'real world' concerns – of which the quality of work was an important one.

JQ was central to the work of the PA Council which SAF established in 1952, to research psychology and personnel administration, influenced by the Human Relations School. It was chaired by a SAF member, but from 1970 on with union (LO and TCO) representation on the governing board of the council. This created somewhat more balance between the labour market parties by strengthening union representation. An official governmental investigation proposed that the council be transformed to a publicly funded research institute but at the time it was politically impossible to defend public funding to an employer-dominated institute (Håkansta 2014b, 13, 18).

Instead in 1972 the Government set up the Work Environment Fund (WEF - *Arbetsmiljöfonden*) to fund research into various aspects of the work environment – a concept that went beyond worker protection and occupational health and safety (Håkansta, 2014b: 22). With trade unions having majority representation on its board, and with financial support from levies on employers as well as Government grants, worklife research flourished. Initially WEF's mission was to finance research related to the prevention of injury, the improvement of the work environment, and worker health and safety. But in 1977 the passage of the Work Environment Act (*Arbetsmiljölagen*) required it to also support research and training into the implementation of new co-determination laws (Håkansta 2014b, 18). Also, in that year the Government set up the Swedish Centre for Working Life (*Arbetslivscentrum*) which received much funding from the WEF.

Through the 1990s, the march of neo-liberalism coincided with, or arguably was coterminous with, the reassertion of emphasis on ‘scientific quality’ in research. Swedish worklife ‘mode 2’ research was attacked from the right as biased and of poor quality due to the closeness between researchers and unions (Håkansta, 2014a) – although closeness between management and researchers did not lead to similar allegations but rather to a further growth of the ‘industry research institutes’, Rise (Sörlin 2016). Such allegations and the increased emphasis on journal metrics contributed to the decline of progressive worklife research in Sweden – and also elsewhere (cf Hampson and Morgan 2016; see also Tourish, Craig and Amernic, 2017).

On the WEF managing board, management and labour representatives disagreed about what research to finance. In 1991, the employer representatives withdrew from the board as part of a general withdrawal from governmental boards, and instead focussed on informal lobbying. In 1995 the WEF was closed and its education and information activities became part of the new NIWL (below). The research funding part was undertaken through a new organization under the Labour Ministry, the Council for Working Life Research (*Rådet för arbetslivsforskning* (Ralf), which, to a higher extent than the WEF, emphasized scientific relevance, but still also financed change-oriented projects with worklife relevance.

Already in 2001 Ralf was dissolved and the responsibility for worklife research was split between a new research council for worklife and social issues (Fas) under the ministry of Social affairs (Fas later changed name to Forte). Fas moved further in the direction of a conventional research council with scientific relevance as the main goal dominating over worklife relevance. It also emphasised social and health issues, with a focus on the individual, rather than on work organization and labour market relations; this reflects that Fas and Forte are organized under the Ministry of Health and Social Affairs rather than the Ministry of Employment. The problem- and change-oriented research was to be taken over by the innovation agency Vinnova. However, Vinnova returned to a sole focus on business and technological development and did not pursue the worklife change aspects. (Håkansta, 2014a, 25-6; Oscarsson 1997,

Björkman and Sandberg 2019). This was a fundamental change, as a result of which development-oriented worklife research was starved of public funding.

In the same year, the Institute for Working Life Research (which followed after the Swedish Centre for Working Life) together with the Work Environment Institute, were restructured into the National Institute for Working Life (NIWL) (*Arbetslivsinstitutet*), gradually concentrating more on the labour market and the work environment, including the psychosocial, and less on work organisation, industrial relations and 'action research' interacting with worker participation, workplace change processes and JQ (cf Lansbury 2016). This redirection continued and was emphasized when in 2007 the new centre right government closed down the NIWL, heralding the end of the golden age of worklife reform and research.

3. The 'Golden Age': Research and the struggle over control of the firm

The JQ and research debate in Sweden can be periodized in a useful way (Björkman and Sandberg 2019, and Sandberg 2016). From 1940 to 1960, the unions cooperated with employer initiatives aimed at improving job satisfaction, while solving 'coordination' and line balancing problems. From 1965, there emerged a critique of previous activity, as unions began to raise power issues. From 1975 to 1985 was the 'golden age' of 'pluralist' worklife research – of employer-oriented research and also of major and growing union-researcher cooperation and radical challenges to employer control of the firm. From 1985 onwards there was much research done under large programs funded by the Work Environment Fund. But as the economy deteriorated and union power declined, unions began to focus less on job quality, and more on job quantity. This period of decline, ironically, coincides with the iconic high point of the Swedish contribution to JQ – the Uddevalla plant.

A unique combination of circumstances facilitated the 'golden age' of JQ research. Co-determination legislation described in a previous section addressed the issue of workplace control, while the government's research policy encouraged research into issues related to JQ, control at the workplace and the role of unions. While unions

broadly accepted the need for accelerated technological change to improve overall national productivity and competitiveness, they had concerns about its effects on workers in particular industries and sectors. Employers implemented workplace reform to improve JQ, partly to compensate for their inability to pay extra wages to compensate for low JQ in tight labour markets, but only as long as it did not compromise overall management control.

Because demands for workplace change were often met with claims that work-improving changes were impossible due to technological limitations, researchers, unions and workers challenged employer control over technology. This meant not only choosing between already established technologies but also intervening in technology's design. Employers had a natural advantage in this contest, because of their greater resources, including the ability to acquire technical expertise. Unions therefore sought to build their own research and technical capacity to challenge the rule by experts – an idea pioneered by the leading Norwegian computer scientist Kristen Nygaard (Higgins 1986; Sandberg 1992). In this development of a 'counter' expertise, unions and workers combined with researchers in a unique form of 'interactive research' (Aagard-Nielsen and Svensson 2006; Sandberg 1985). To illustrate, two projects described in this section aimed to investigating the conditions for 'good work', including 'quality in work and product' (i.e. meaningful production) and industrial democracy.

3i) Union Oriented Action Research: Demos and Utopia as examples

As Sandberg (1992: 30-37, 101) argues, much social science research is oriented towards problems defined by strong actors, such as policy decision makers or senior management. 'Action research' is oriented towards producing a particular kind of change. Much Swedish research was explicitly value oriented – towards the quality of worklife and the democratization of work. It is important to note, however, that the cases presented here, Demos and Utopia, were not at all the only such projects and nor were they exclusively Swedish. There were several at the KTH Royal Institute of Technology, as well as the Due project at Aarhus University, Denmark. As well as

seeking to influence the choice or implementation of new technology, objects of research included the 'participatory design' process itself, and its potential for the democratization of work.

The Demos (Democratic Control and Planning in Working Life) project sought to explore the potential of cooperation between unions and researchers for shaping work organization and technology, building on the pioneering Norwegian NJMF project from the 1970s (Bansler 1989: 94). It would also build the capacity of local unions to develop their own organisational alternatives by enhancing cooperation and qualifications among workers. Workers acted as researchers in special qualified 'investigative groups', which included both experienced union members and workers with little experience. The groups studied their own work and enterprises, using researchers as 'resource persons', and formulated action plans. In so doing they interacted with national unions, to get support of various kinds, in developing policy and in negotiations with management. Broader participation in reference groups in the form of 'study circles' added to collectivism and encouraged non-members to join the unions (Sandberg 1992, 111). The union was called upon to develop its own internal competence to meet management in negotiations over the implementation of new technology. In this development, sympathetic external academic researchers undertook supplementary empirical studies and theoretical analysis – this long-term interaction was called praxis research or interaction research (Aagard-Nielsen and Svensson 2006; Sandberg 1985).

The Utopia project followed. It was based at the *Arbetslivscentrum*, in cooperation with the KTH Royal Institute of Technology in Stockholm; with researchers from Aarhus University in Denmark; and with the Nordic Graphic Workers Union. Utopia is an acronym of the Swedish for 'Training, Technology, and Product in the Quality of Work Perspective' (Lundin, 2005, 2-3). The broad aim of the project was to extend union and worker influence over new technology to the design stage, to develop participatory design processes, and to analyze, empirically and theoretically, the organizational and societal possibilities and limits to such changes.

The Demos project had revealed limitations of local strategies that were essentially defensive in the sense that they tried to influence the work organization around existing 'hot metal' technology (Ehn 1988; Bansler 1989). The new research aimed to counter the introduction of radically new 'cold metal' digital technologies (for text and image processing) that were drastically reducing employment in the printing industry, and deskilling print workers skilled in 'hot metal' pagination. Management strategies invoked the presumed inevitability of the introduction of certain forms of technology and organization. Researchers and unions sought to develop organizational and technical alternatives, with support from national and Nordic unions, as well as cooperation with adjacent unions and researchers.

They aimed to develop software that could build on workers skills and capabilities, rather than follow a deskilling and control logic (Howard 1985; Ehn 1988). 'Technological choice' (going beyond the socio-technical concept of 'organizational choice'), required imaginative software design around graphic skills, and machine interaction skills. The project proceeded through mutual learning between workers and researchers covering page make up, image processing, work organization, work environment (ergonomics), person-machine interface, and intensive training. This was a unique cooperation under favorable preconditions that has been difficult to replicate, although ultimately management resistance and union rivalry prevented the project achieving its full potential (Sandberg 1992, 244-258; Ehn 1988).

Even so, Lundin (2005, 4) judges Utopia to be a 'seminal' project on participatory design, which gave rise to the so-called Scandinavian School of System Development – where 'the users' participation in system development [has] become a key element'. The project stands as a counter to any view of technological change as 'inevitable', 'autonomous' and 'out of control', and potentially subject to social shaping (Lundin, 2005) – including towards democratic ends.

The Demos and Utopia projects were however not only a cooperation between unions and researchers, but also an innovative and fruitful one between researchers from different fields like computer science, design, worklife and organization studies. Such

cooperation was essential to support JQ when work was undergoing ’computerization’ (as the process was then termed), and has turned out to be not so easy to replicate. Academic pressures have made computer scientists/ designers, and social scientists respectively choose different roads with the former emphasizing ‘main stream’ sociotechnical design and learning aspects, with the latter, and some computer scientists, still emphasizing power differences, labour and managerial control in digitalization processes in organizations (compare Bødker et al 2000 and Greenbaum 1996; more recently e.g. Irani and Silberman 2016, Movitz and Sandberg 2013, 59-60, and in general labour process analyses of worklife digitalization). The vision of the mentor Kristen Nygaard was to integrate the two and given challenges in today’s worklife such renewed researcher cooperation would be of great importance, and may perhaps again be possible given recent developments in research policy that we address below.

3ii) Uddevalla: A High Point of the Swedish Contribution to Job Quality

Developments in the Uddevalla car assembly plant represent a high point of the Swedish contribution to JQ, arguably fulfilling the dream of enhancing productivity and work quality at the same time. It also exemplifies how union and worker involvement in production organization encountered limits to the democratization of work.

Following the closure of the Uddevalla shipyard, Volvo was enticed into the area with heavy subsidies, partly to provide employment, and partly because it offered the possibility to build a new ‘greenfield’ plant following revolutionary design principles. In these, the principles of ‘The Good Work’ (Metal, 1985) played a role, as did targets for female participation and an undersupply on the local labour market of the young, fit males who are the most common auto manufacturing workers.

The project began in 1985, and the plant was opened in 1989 (Sandberg 1992; 1995; Ellegård 1995). The unions were heavily involved in the planning of the factory layout

along with a number of researchers and experts from various disciplines at Gothenburg University, and Chalmers Technical University (Ellegård 1995; Engström and Medbo 1995; Nilsson 1995; Blomquist et al 2013). As the implementation progressed, workers too became involved. Initially, Volvo's production engineers put forward a moving assembly line model, although moderated by some ergonomic design principles developed in Volvo's Kalmar plant. However, the unions in alliance with top Volvo management called for different production design based on as yet undeveloped technical and pedagogical principles – including a work cycle not less than 20 minutes (compared with the then existing work cycles in auto assembly which could be as low as one minute).

A deciding factor in the early negotiation about design principles was an experiment performed by researchers who disassembled a Volvo car, laid out its parts in a workshop, grouping the components into intelligible logical subsystems. An experienced and qualified car industry worker then ascertained how to combine them with assembly in mind and worked out how to assemble the whole car in one long work cycle. The subsystems became the basis for training design. Training modules to support a two-hour work cycle were initially set at three-months duration. Completion of the training module delivered a pay rise, based on competence, thus driving competence acquisition. As more workers completed the training modules, the production design moved towards the assembly of whole cars, by autonomous teams, in parallel flow workshop design.

Thus the novel design in Volvo's Uddevalla factory did away with the moving assembly line, and with it the problems associated with line balancing between individual workstations. So-called 'reflective production' was based on advanced principles of pedagogics, high levels of learning, and worker capacity to deliver continuous improvement (Ellegård 1995; Sandberg, 1995). Workers could place all components in the car in the right place as long as they were presented for assembly in the right order. This was 'meaningful' work, in the sense that the fully-trained worker was able to see the relation between all the parts of the car. On the basis of the learning, workers could suggest changes not only to the production process, or improvements

to product quality, but also modifications to the product (Berggren 1994; Blomgren and Karlsson 1995). This tested management prerogatives and probed the limits of the democratization of work.

In the last stages of the Uddevalla plant's operation there was practically no management hierarchy. Production teams were autonomous. There was no work pacing and workers could take personal breaks. Coordination demanded a management function between the autonomous teams and upper management – but this person was not called a 'supervisor', but an 'ombudsman' – indicating that they would play a moderating role and would seek to balance any tensions between legitimate requests coming from 'below', as well as from 'above' (Sandberg 1992, 90; Sandberg 2013b). Customers could order a car to particular specifications in consultation with workers and watch it being made – testifying to boundary-crossing of normal capitalist authority structures.

To this day, opinions are divided on the question of whether the form of production at Uddevalla was superior to the prevailing production models of car assembly – mass and lean production. By the time the plant was demonstrating high and increasing levels of productivity (including one highly skilled worker who could assemble a whole Volvo in 10 hours - well in excess of claimed assembly times in even the most productive of the Japanese plants of the day), Volvo was restructuring its global operations. This entailed closing the plant – exactly why is highly controversial. Lean production (Womack et al, 1990) advocates assert it was inferior in technical and productive terms, others beg to differ (Berggren 1992; Sandberg 1995). As Robert Cole and Paul Adler (1995) noted during the debate at the time, the plants were shut down before researchers had the chance to definitively investigate their potential. Since then line and lean production on the contrary have of course been further developed, become more flexible and productive.

The debate is also about ideology, control and power as well as about productive efficiency (see Noble 1977). One view is that the plant was destined for closure

precisely because of its success – as a production model consistent with the democratization of work and high productivity that threatened authority.

The Uddevalla model influenced 'postlean' production systems that emerged in Japan, as car producers sought to moderate the effects of lean production on attraction and retention of their workforce by such 'innovations' as reinstating production buffers, lengthening job cycles, and limiting hours (Hampson 1999). Yet concerns have subsequently been expressed about a certain 'idealization' of the Uddevalla model (Sandberg 2013b). Car production, after all, leaves something to be desired in terms of 'socially responsible production' and personal development potential. The autonomy available under the 'reflective' production conditions in car assembly may not have been available to the workers who assembled the packs of components. There is also a lack of empirical research – of interviews with workers who can tell about what it was actually like to work there. There was a lack of learning beyond and between the individual teams. However, during the last months in operation changes were made to remedy this as a step towards making the plant more productive.

In the Uddevalla model there is a need to negotiate the time allotted to the production of each model and variant. As there is no line to set the rhythm of work, this may be a complicated issue. In the model there is a partial reversal of 'the intellectual division of labour' in the direction of free cooperation of persons as for example in the development of open-source software, and Wikipedia. Such cooperation can be very productive and, at the same time, threaten established forms of production and authority. Ultimately, the lesson of the Uddevalla case may be about the limits of work democratization within a capitalist society (several contributions in Sandberg, 2013b).

Conclusion: Revival beyond the end of the Golden Age?

The Swedish approach to job quality linked efficiency with the democratization of work – i.e. with workplace participation and autonomy. It questioned the idea that there was a necessary tension between JQ and efficiency and sought to increase both at the same time. At the theoretical leading edge of the labour movement, such

theorists as Ernst Wigforss argued that democratic workplace arrangements were a necessity for fully efficient enterprise. Developments in Swedish political economy aligned to produce a 'golden age' of worklife research and reform, in which government research policy supported academic researchers and active union members to perform research that addresses basic challenges and problems in society, including and in particular how to improve JQ. Swedish intellectuals and unions emphasized workplace participation as an educative and political strategy and sought to challenge capitalist control at the level of the firm, as well as at a political and societal level.

As this constellation of forces passed, progressive work design encountered limitations deriving from a capitalist economy and neoliberal globalization. The SAP's previously dominant position in Swedish political life ebbed away, and with it went much of the support for worklife research and reform. There were corresponding shifts in research policy – from emphasis on relevance and social usefulness, to rigour, political neutrality, and the increasing metricisation of academic culture (cf Alvesson, Gabriel and Paulsen, 2017). As the Uddevalla model reached its high point, rising unemployment and deteriorating economic conditions focused unions' attention back on employment, making JQ a secondary priority. By 2007, action oriented and interactive research into the democratization of work and organization had virtually ceased – symbolized by the closure of the *Arbetslivsinstitutet*. Change-oriented research guided by the needs of industry and employers however remained and was strengthened within *Industriforskningsinstituten*, later assembled under the umbrella organization of *Rise* (Sörlin 2016). When it comes to research, the two sides of industry were treated very differently by the state, labour-oriented research closed down, employer-oriented research expanded.

More recently, as Sörlin (2016) points out, there are signs of renewal in Swedish research policy, which now emphasises the need to address fundamental societal challenges as a guiding principle. A new national authority for the work environment has commenced operation in the summer of 2018, with its main tasks the evaluation of government policy, knowledge mediation between research and working life, and

coordination of international research cooperation. A next step might be to strengthen worklife research itself, by offering resources to build new pluridisciplinary research centres and departments at several universities. If, as may be the case, neoliberalism has reached its zenith and is commencing decline, there perhaps will be room again for fruitful multidisciplinary research directed towards important challenges in working life: into design of technology and work; into industrial relations and unions; and for how to redress power inequalities through the democratization of work. On the other hand, tendencies towards further neoliberalization are evident in growing inequalities and the weakening of unions. The outcome is therefore rather open.

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