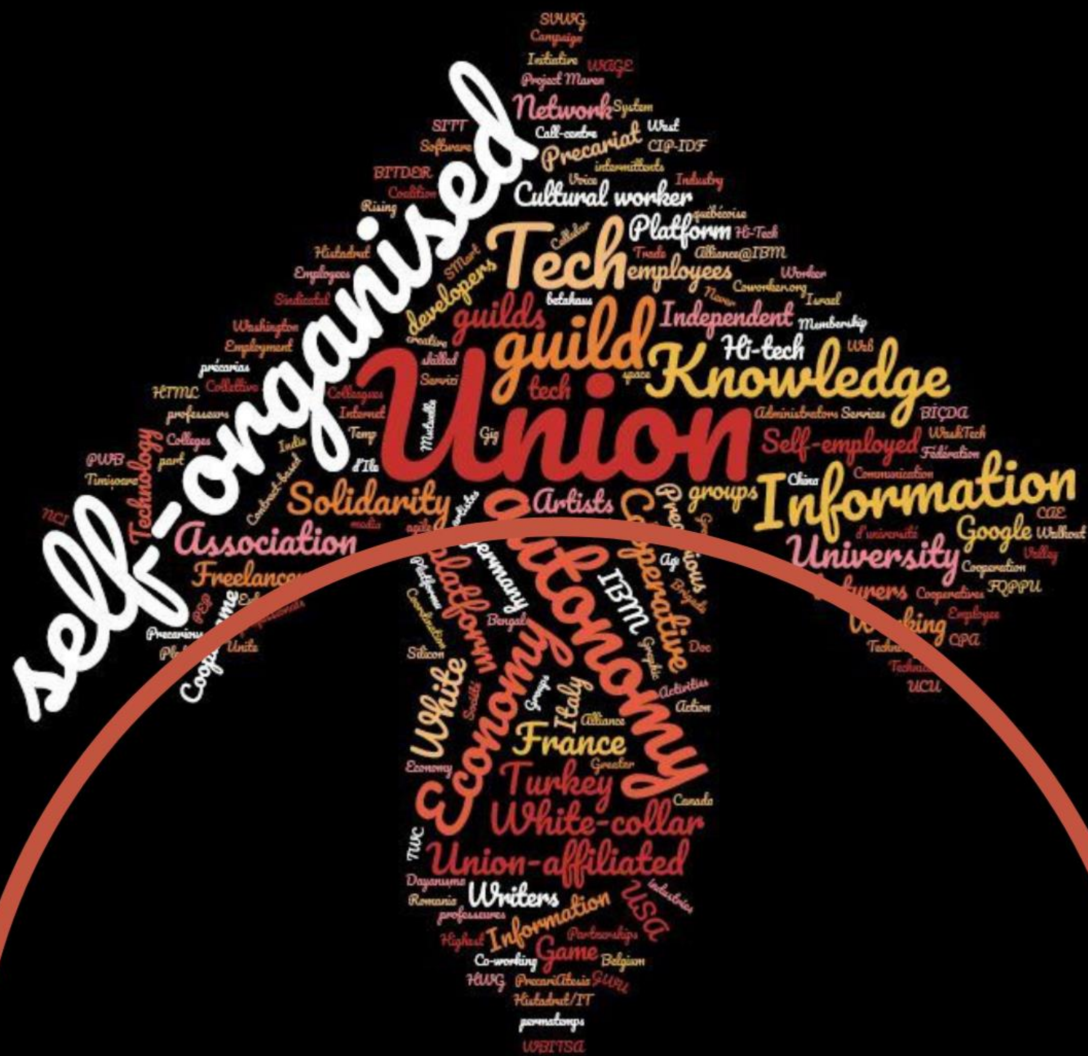


WORKING PAPER SERIES – SOCIALLY INNOVATIVE KNOWLEDGE WORK

KNOWLEDGE WORKERS, UNIONISM AND COLLECTIVE ORGANISATION IN THE 21ST CENTURY

WORKING PAPER: OKT – 2020
ISSN: 2597-1360

BY
BJARKE FRIBORG AND ANDERS PILMARK

Colophon

Published by the Research project:
Socially Innovative Knowledge Work – SIW
Homepage: https://www.futureknowledgework.com/

Project partners:

Kooperationen

PROSA – Danish Association of IT Professionals

ACTEE

Technological Institute Denmark

Roskilde University

The project is partially funded by Innovation Fund Denmark

For further information please contact head of research:

Assoc. Prof. PhD Katia Dupret

Roskilde University

Universitetsvej 1

4000 Roskilde - Denmark

Table of contents

Colophon 1
0. Executive Summary 3
1. Introduction 5
2. Definitions and background 6
2.1. Knowledge workers vs. other workers 6
2.1.1. Definitions 6
2.1.2. Relations to other groups of workers, managers and society 7
2.1.3. Shared and particular work-life concerns 9
2.2. Relevant forms of worker organisation 9
2.2.1. The Webbs and the 'brain workers' 10
2.2.2. Typologies of worker organisation 10
2.2.3. Worker organisation in the 20th and 21st century 13
2.2.4. Contours of alternative/adequate labour organisation 14
3. Literature review 15
3.1. Literature walkthrough 16
3.1.1. New and self-proclaimed trade unions 16
3.1.2. Non-union initiatives 18
3.2. Analysis 22
3.2.1. Definitions and conceptualisations of knowledge workers 22
3.2.2. Typologisation: Do the Webbs still hold up? 25
3.2.3. Efficiency 29
3.2.3.1. Unions persist, but often face difficulties 29
3.2.3.2. New labour formations emerge, but are not necessarily effective 30
4. Conclusion 32
4.1. Theoretical findings 33
4.2. Implications and recommendations 36
Literature 38
Appendix: Overview of named labour initiatives 44

0. Executive Summary

This working paper is a product of a four-year research project led by Roskilde University, Denmark, entitled “Socially Innovative Knowledge Work” (SIW). The project is co-financed by the Grand Solutions Programme of the Danish Innovation Fund and explores trends in knowledge work and the implications for individual knowledge workers, workplaces, and society.

The aim of the working paper is to investigate and map research into recent trends regarding the organisation of knowledge workers in relation to the collective tackling of present-day work-life issues, notably and explicitly by focusing on their own initiatives and organising attempts. The reason for doing so is twofold: On the one hand, dominant versions of Western post-WII welfare states, labour representation and collective regulation of workplace and work-life issues have come increasingly under pressure. Accordingly, the question has emerged how present-day labour issues can be addressed in more adequate ways – i.e. whether existing collective arrangements can be supplemented, updated or even replaced with more adequate tools. On the other hand, new worker groups and labour formations apparently experiment with a range of diverging and varied organising forms that do not always fit with established modes of representation, recognition or efficiency. For us, these developments indicate the need for an updated and broad analytical perspective concerning the classification of differing forms of labour organisation – with this working paper focusing on knowledge workers and their particular contributions and taking the form of a literature review.

In order to qualify a broad selection of texts with relevant perspectives, we start out in section 2 with a discussion of various definitions of knowledge workers and differing perspectives on their inclinations towards collective organisation. Portrayed as everything from privileged elites and staunch supporters of status quo, emerging and non-conformist “creatives” and “hackers” or rather composite new middle layers with contradictory class locations – sometimes privileged, sometimes exposed to increasing insecurity and even precarisation – we nonetheless identify both shared and particular work-life concerns for knowledge workers as distinct from and in common with other worker groups. This is then combined with a historical perspective, drawing on pioneering labour scholars Sidney and Beatrice Webb and their thoughts on the classification and appropriateness of different types of worker organisation in the beginning of the twentieth century. On this basis a tentative typology is set up which is then used to identify presumably relevant new labour formations among knowledge workers.
With the above analytical framework in place, section 3 is where we present and unfold 26 academic texts published 2000-2020, selected due to their focus on recent examples of knowledge worker self-organisation – notably covering diverse industries such as tech, culture and higher education and actively including cases not only from Europe and North America but also Asia and the Middle East. This is done first in the form of a ‘literature walkthrough’, describing in relative detail the 35 named knowledge worker initiatives contained in the articles. Then an analysis of the literature is carried out, focusing on a) definitions and conceptualisation, b) typologisation and c) efficiency with regard to the different initiatives identified in the literature.

Finally, in section 4, conclusions are presented as follows, both in relation to theoretical findings and practical implications:

	Conclusions regarding knowledge workers
Definitions	● Hardly a homogenous group ● Not per se against collective organisation/unionisation, cf. 35 named examples ● Can have shared work-life concerns with other workers, but also particular and professional concerns ● Can organise collectively due to work-life concerns if consistent with their social and professional identity
Typologisation	● Collective organisation can take a diversity of forms and base itself on different logics, with none necessarily being more legitimate or relevant than the others ● Contemporary forms appear as varied as 100 years ago (i.e. including both trade unions, mutual aid networks, worker owned enterprises and other forms), confirming the overall validity of our tentative typology and leading us to a refined version ● The proliferation of new mutualist arrangements and labour market intermediaries (notably aimed at freelancers and independent workers) indicate a certain innovative potential in this area, but also the need for further studies and conceptualisation
Efficiency	● For knowledge workers, the most effective and practicable combination of methods are not necessarily the traditional methods typically associated with the Webbs and classical trade unionism (collective bargaining, mutual insurance end legal enactment) ● While classical trade unionism has not necessarily peaked or reached a supposed limit, the diversity of experiments and knowledge worker self-organisation at least indicate a certain mismatch between new groups of knowledge workers and certain established unions. ● When new worker groups and established unions work together, they can obtain more than when relations are more strained ● When new worker groups engage in collective organisation, they also construct new (and formerly lacking) 'memories of organisation', potentially inspiring others to join them ● Not all new forms of collective organisation are equally efficient

1. Introduction

With the rise of a globalised capitalist economy – post-Fordist, post-Soviet and highly digitalised – the dominant versions of Western post-WWII welfare states, labour representation and collective regulation of workplace and work-life issues have come increasingly under pressure. Accordingly, the question has emerged how present-day labour issues can be addressed in more adequate ways – i.e. whether existing collective arrangements can be supplemented, updated or even replaced with more adequate tools for ensuring the protection of workers, preventing marginalisation and supporting the continual development of their professional capabilities and potentials. The multistakeholder research project SIW (Socially Innovative Knowledge Work) takes the development of the labour market for knowledge workers as its starting point and notably what appears as new constellations of classical and more recently originated work-life issues among knowledge workers, related in part to digitalisation and new forms of flexibilisation and stratification of the workforce (Pultz and Dupret 2020). Informed by the project partners – researchers, a labour union, an interest organisation for worker cooperatives, a research and technology company, an IT consultancy company and a game development company – the idea is to facilitate mutual inspiration, while aiming for the development of new tools for unions, management, HR as well as directly for the knowledge workers themselves.

On this background, the purpose of this paper is to investigate and map research into recent trends regarding the organisation of knowledge workers in relation to the collective tackling of present-day work-life issues, notably and explicitly by focusing on their own initiatives and organising attempts. After decades of apparent setbacks for the classical worker unions associated with the industrial capitalism of the 19th and 20th centuries, new worker groups and labour formations today try to find applicable methods in order to grapple with their issues at work. This also includes knowledge workers across fields ranging from high-tech to the education and cultural sectors, addressing a diverse range of work-life concerns. In certain ways, however, this development challenges existing notions of traditional unionism. Both because knowledge workers are often not traditionally associated with classical unionism, but also because of the diverging and varied organising forms that do not always fit with established modes of representation, recognition or efficiency. In addition, some of these initiatives and accordingly introduced concepts display a curious hybrid of old and new – with concepts such as 'open source' unionism, digital platform cooperatives, craft guilds in the modern tech sector and new unions focusing on freelancers and the self-employed rather than on classical salaried employees. For us, these developments indicate the need for an updated and broad analytical perspective concerning the classification of differing forms of labour organisation, with this working paper focusing on knowledge workers and their particular contributions. In doing so, we might even identify contemporary and relevant tools for ensuring the protection of workers in general and knowledge workers in particular.

Methodologically, we will create a qualified overview of recent trends regarding labour organising among knowledge workers by conducting a literature review of relevant academic texts published 2000-2020 (a more detailed description of the structuring of the literature review will follow in section 3). Accordingly, the working paper is structured as follows: In section 2 we will start out

by introducing various relevant definitions and theoretical perspectives regarding knowledge workers and related concerns over their work-life issues; this will then be followed by the construction of an initial and tentative typology of relevant worker organisation based on the insights and work of labour scholars Sidney and Beatrice Webb; finally, the section is rounded off with a brief historical overview of the development of worker organisation and union organising in the 20th century, setting the scene for current developments in the 21st century. In this way the section not only provides background information for the identification of relevant forms of collective organisation and the selection of literature as well as concepts and definitions of supposed applicability in the subsequent analysis, but also serves as the initial methodological framework of the working paper. In section 3 we explain how the literary review was conducted, detailing the methodological choices behind the structuring of the review; after this we analyse and compare the selected literature based on the framework in section 2, confronting concepts and definitions with the according perspectives and findings. Specifically, we focus on definitions and conceptualisation, on typologisation and mapping and also on the question of efficiency/adequacy. Based on the obtained insights, we refine the framework and concepts accordingly while also providing a visual overview and map of the relevant named knowledge worker initiatives. In section 4 we will sum up our findings in order to qualify the current and further debates on relevant forms of collective organisation and unionism for knowledge workers, rounding off with implications and recommendations for unions, managers and knowledge workers alike

2. Definitions and background

2.1. Knowledge workers vs. other workers

2.1.1. Definitions

Coined by management theorists Peter Drucker and Fritz Machlup in the 1960'es, the notion of the knowledge worker has increasingly come to the forefront as a designator of a distinct type of workers associated not only with the most advanced sections of the globalised and digital economy, but also with a high level of productivity and creativity and at the same time as a driver for the transformation of organisations and companies. Defined by Drucker (1966) as high-level workers who apply theoretical and analytical knowledge acquired through formal training to develop products and services, the concept still points in different directions, however – with no single and consensual definition among researchers.

The term is often used interchangeably with other terms such as 'white-collar workers' or 'professionals', adding to the confusion. However, whereas 'white-collar' work has been a common term since the 1930s as a designator of the performance of professional, administrative or managerial work – as distinct from the manual work associated with 'blue-collar' labourers – knowledge work is rather associated with more complex and specialised job functions, even leading to new terms such as 'gold-collar' workers (Kelley 1990 and Roe 2001, both cited in

Wonacott 2002) able to see the big picture, change strategic direction when necessary and work interdisciplinary. Or in the words of Roe (ibid.), referencing biotechnicians, medical technologists and network administrators alike: “A highly skilled multidisciplinarian who combines the mind of the white-collar worker with the hands of the blue-collar employee”.

Thus, whereas some or even most definitions explicitly counterpose manual work and knowledge work, others are less categorical, and whereas some place the emphasis on non-routine problem solving, others rather focus on formal education, professionalism etc. Depending on the definition, knowledge worker as a term in this way potentially covers a wide and even potentially contradictory range of backgrounds, occupations and professional outlooks – ranging from dentists to artists and from trained conformists or ‘disciplined minds’ (Schmidt 2000) to creative rebels, even constituting a new ‘hacker class’ of artists, designers and software developers (Florida 2002, Wark 2004).

Despite these diverging perspectives, there nonetheless seems to be consensus that a growing number of jobs in the Western world require analysing and manipulating information rather than producing or moving physical objects. To some this is a clear sign of the knowledge economy expanding, while others are more sceptical of that statement, arguing that analysing and manipulating information is characteristic of a lot of immaterial work (e.g. parts of service work and care work) that cannot adequately be described as knowledge work, and that current job creation in Western societies mainly concerns jobs in the lower tertiary sector (Caruso 2015). At the same time, it is noted that while highly trained professionals in practice also perform a lot of routine operations, many jobs traditionally associated with manual labour and routines increasingly require cognitive skills, mental creativity etc. (Benson and Brown 2007), notably in relation to the presumably forthcoming ‘fourth industrial revolution’ or Industry 4.0 (Schwab 2016). Even today the cognitive content of blue-collar work – both classical and modern – is often considerable, although according to Rose (2009) this is often obscured by cultural and class bias among observers in combination with certain definitions of ‘knowledge’ as well as ‘intelligence’.

In the SIW project we have aimed to counterbalance these divergences, defining knowledge work as work centred on 1) creating, 2) applying, 3) disseminating/communicating or 4) gathering knowledge in ways that involve independent judgment. It is almost always based on higher education and takes place in either professional work (health, education, law, auditing etc.), public administration, management, information technology, high-tech work or the media/journalist and culture sector. Knowledge work comprises creativity, innovation and adding value to products and services. (Dupret and Vorre Hansen 2021). Autodidacts are thus potentially included, with the exact delimitation dependent on the specific organisational context and dynamics at work.

2.1.2. Relations to other groups of workers, managers and society

Regarding defining characteristics of knowledge workers, there seems to be consensus that persons performing knowledge work – i.e. regardless of their level of formal education and possible other job functions – will not perform effectively in this area if subjected to the classical methods of Taylorism and Fordism. Rather, they should have more room for professional autonomy and self-management, be less subjected to strict hierarchies and in addition have

access to continuous learning, development and training (Drucker 1999). Others would say that this is indeed applicable to all workers, echoing the above question of possible class bias against perceived non-knowledge workers. Nonetheless, Drucker and other management theorists are not the only ones associating knowledge workers with a drive towards alternative organisational forms more suitable for the facilitation of smooth labour processes, notably rooted in the mainly immaterial character of their work and based on their specialist insights in production processes as well as the need for constantly updating knowledge, skill sets etc. (Brophy 2008).

Based on the above and for the purpose of this paper, it is in the latter sense that it appears meaningful to associate persons performing knowledge work with alternative organisation – i.e. away from Taylorism, Fordism and associated forms of micromanagement, strict hierarchies etc.). Thus, in addition to the question of the inclusiveness of the term – i.e. which groups can and should be considered as knowledge workers – there is also a question of orientation: That is, how knowledge workers orient themselves towards other groups of workers, towards their managers and towards society in general, notably in relation to addressing their own as well as shared work-life concerns. Here definitions, perspectives and theories also vary considerably. E.g. whereas Karl Marx and others in the 19th century foresaw a growing and distinct polarisation between the proletarianised and popular classes vis-à-vis the ruling classes of employers, factory owners etc., the rise of new 'middle layers' of so-called white-collar workers and knowledge workers in the 20th century – with 'contradictory class locations' (Wright 1985) – has been the object of intense studies but also disagreements. Drucker himself even described the discussion as the great new "social question" and argued that "just as the economic conflict between the needs of the manual worker and the role of an expanding economy was *the* social question of the nineteenth century", so "the position, function, and fulfilment of the knowledge worker is the question of the twentieth century" (Drucker 1966:173). He also warned, however, of potential conflicts between the future "large minority of knowledge workers and the majority of people, who will make their living traditionally, either by manual work, whether skilled or unskilled, or by work in services, whether skilled or unskilled" (Drucker 1994:13-14) due to questions of productivity and the "ability of the knowledge society to give decent incomes, and with them dignity and status, to non-knowledge workers" (Ibid:14).

In the sociological and class-oriented tradition focus has typically been on whether a) the new groups would attain mass character, undergo proletarianisation and align accordingly with other salaried employees, join unions and engage in collective action towards employers (Mallet 1975, Carchedi 1977 and Gouldner 1979 cited by Özbay 2016), b) evolve as relatively privileged elites and primarily defend their interests as part of the establishment as a 'new petty bourgeoisie' or distinct 'professional-managerial class' (Poulantzas 1975, Ehrenreich 1979), c) transcend existing class society due to engagement in new and autonomous information-based production relations (Benkler 2006, Hardt and Negri 2009, Bauwens and Niaros 2017), or simply d) fracture further into new stratified layers – including the rise of a new 'precariat' of persons with individualised and loose work contracts outside the standard employment relationship (Standing 2016) resulting in increased inequality, fragmentation of work collectives, work intensification, erosion of professional meaningfulness etc. (Standing 2016, Kalleberg 2009, Lund et al. 2010). Conversely, within business and management theory, focus has been on finding suitable and not-too-costly

ways of attracting, motivating and rewarding such groups; adjusting organisations and methodologies in order to maximise productivity and innovation in addition to getting access to a vast and distributed global workforce on demand – all while still cutting costs and increasing profitability. Regardless of the perspective, work-life issues are clearly central, just with different perspectives towards their resolution.

2.1.3. Shared and particular work-life concerns

Even with the different definitions and perspectives, it is possible – based on the specific discussions, intersections and demarcations – to outline a number of present-day labour issues for the groups in question that need to be tackled.

First, the counterposing of manual/blue-collar work and white-collar/knowledge work is associated respectively and primarily with physical vs. psychological wear and tear – notwithstanding that knowledge workers can still face physical issues and manual workers psychological issues.

Second, all groups of workers face classical issues related to remuneration, compensation, job security, health, social security, retirement, pension etc. Specifically regarding knowledge work, however, there is a host of additional and well-known work-life issues, notably in relation to education. Even though work-life issues related to education are not limited to knowledge work, knowledge workers face issues related to the rise of mass education and related effects such as devaluation of education and prestige loss, disputes over intellectual property and professional ethics, access to further education etc. – i.e. questions over the management and maintenance of knowledge – that, to a large degree, is unique to knowledge work.

Third, with the rise of digital technologies and mobile communication devices new work-life issues have surfaced in relation to work-life balance as work is always within reach – enabling increased and various forms of flexibility (Dupret and Pultz 2021), but also work intensification (Pultz and Dupret 2020), invisible work (Dupret 2017), rising stress levels etc. (Villadsen 2017). Although these work-balance issues are far from unique to knowledge workers and knowledge work, they disproportionately affect knowledge workers due to the nature of their work. However, the question remains how labour issues such as the above – both shared and particular – can be tackled collectively.

2.2. Relevant forms of worker organisation

Regardless of the extent of shared concerns identified in this working paper it remains a long-standing notion – both among certain sociologists and among certain knowledge workers themselves – that knowledge workers as a group tend to stand apart from the traditional workers' movement, often ascribed to certain aspects of their work. Clearly, however – and specifically based on their work-life concerns – groups of knowledge workers have joined existing unions or started their own occupational associations and labour-centred organisations, including doctors, nurses, teachers, engineers etc. In other words knowledge workers – or at least certain knowledge workers – do tend to organise, even if they sometimes or even often do it differently, depending on their situation and concerns. In management theory this is reflected in a vast literature based on an employer perspective on how to adjust company structures and

methodologies in order to increase the productivity and innovative capacity of knowledge workers, typically by allowing for more autonomy, encouraging self-management and curbing the extent of direct instructions from above. Notably, the latter are also well-known issues since the early years of the labour movement, tinged by a certain scepticism towards knowledge workers with presumed other concerns that might even sometimes contradict the concerns of the broader mainstream workers' movement. In order to navigate on an informed level in these debates – not least while aiming for a structured literature review – we see it as important to elaborate somewhat on this particular field.

2.2.1. The Webbs and the 'brain workers'

For the pioneering labour scholars Sidney and Beatrice Webb – active social reformers in the UK from the 1880'es until the 1940'es – it was clear from their studies of the pre-WWI workers movement that what they termed 'brain' workers not only organised in different ways than manual and industrial workers, but also that the two groups and their respective ways of organising had qualities as well as shortcomings as seen from a collective perspective. Thus, whereas the trade unions were mainly associated with manual workers and appeared superior in obtaining results regarding salary levels and social protection – notably by way of collective bargaining and backed up by arrangements of mutual insurance providing for the unemployed or sick workers etc. – the professional associations of the knowledge workers had as their strength the power to obtain "certain powers of self-government" such as licensing and the forming of moral codes "to uphold the dignity and freedom of the brain worker against the powers of both corporate authorities or private capitalists" (Webb and Webb 1920).

For the purpose of this paper – focusing on experiments and the contours of relevant organisational forms in relation to the collective tackling of work-life issues for knowledge workers – the Webbs thus provide an important historical starting point in a comparative perspective. First, they singled out the professional associations as particular formations made by the 'brain workers' with particular characteristics differentiating them from the trade unions, but they did not rule out that knowledge workers would also join existing trade unions, create their own etc. – which was in fact what happened in the UK as well as elsewhere among groups such as university teachers, civil servants etc.

Second, they identified and documented the extreme variance in their times of the broad workers' movement, where groups of workers with similar backgrounds could and would nonetheless organise in different ways – alongside debates over the most appropriate strategies and accompanied by endless numbers of fusions, splits and organisational experimentation and mutual inspiration, gradually making way for consolidation.

2.2.2. Typologies of worker organisation

Knowing that some of the new organising efforts among contemporary knowledge workers describe themselves as guilds, cooperatives or mutual aid efforts etc. – i.e. categories of worker organisation differing simultaneously from both classical trade unions and professional associations – the broad outlook associated with the Webbs seem doubly relevant in order to identify an analytical framework for the literature review. Specifically, the Webbs not only distinguished between the trade unions and professional associations of their time, but also

documented – and polemicised against – contemporary currents that were part of a broad worker's movement but preferred particular methods and strategies that differed from the mainstream trade unions. Notably, they singled out the guild socialists, the radical syndicalists and the worker's cooperative movement that all explicitly focused on variations of workers' control and self-management from below in the workplace rather than the overall and centralised regulatory efforts preferred by the Webbs. Respectively the three currents centred on a) vocational self-management via member associations based on established crafts or trades, often with roots going back to the middle ages (although with guild socialism as a modern version associated explicitly with the worker's movement); b) workers' direct takeover of existing companies, in turn expropriating the previous owners and c) the setting up of new worker-owned enterprises from scratch. In addition, the provision of benefits and mutual assistance was not exclusively confined to dedicated unemployment or reserve funds, as many workers were also members of so-called 'friendly societies' operating as fraternal associations with direct and mutual obligations to the other members. Finally, they also saw political parties as important for improving worker rights and notably workers' or Labour parties that could press forward with relevant legislation. While the Webbs did not work out an actual and systematic typology, their general perspective could still be summed up as in table 1 – incidentally providing a historical reference with relevance for contemporary labour formations.

Table 1:

Method	Organisation	Strengths	Weaknesses
Collective bargaining	Trade unions	Sector-wide and gradual improvements Effective enforcement of mutually agreed rules	Willingness to compromise, risking demoralisation and demobilisation Failing to agree means strike or lockout
Vocational or occupational self-management	Professional associations and guilds	Strong communal and/or craft-based identification	Cross-cutting issues based on class (managers vs. workers)
Strike action, affirming workers' collective power Workers' direct takeover of existing companies	Syndicalist unions	Combative solidarity and enthusiasm	Dependence on constant mobilisation and activism
Cooperative associations	Worker-owned enterprises	Socially responsible companies, anchored in communities	Competition from established capital Limited scalability on a societal level

Mutual insurance	Unemployment and reserve funds, friendly societies etc.	Direct provision of benefits for community members	Lack of standardisation, potentially leading to inequality
Legislative reforms	Labour based political parties	Effective state enforcement of universal reforms	Dependence on electoral success rather than workplace strength

As noted by Hyman and Gumbrell-McCormick (2017), successive 20th century labour scholars have often tended to exclusively focus on variations of mainstream trade unionism, by implication “othering” organisational efforts seemingly related to earlier or simply alternative types of worker organisation – by default dismissing them as inferior, irrelevant etc., i.e. as “outsiders”. Breman et al (2019:15) even speaks of a “collective-bargaining bias” propagated for years by international trade union bodies, whereby “proper” unions were supposed to perform in particular ways prevalent in Northern Europe and North America, regardless of local preconditions. In fact, the Webbs did indeed view particular forms of worker organisation as inferior, being strong advocates of gradualist reforms in a long term perspective – i.e. working for incremental improvements via collective bargaining with the employers, backed up by legislative reform and workers’ mutual insurance for the provision of benefits such as unemployment, strike and sickness payments. For the Webbs and their peers, the trade unions were the only ones capable of facilitating effective interplay between the three – being solely responsible for collective bargaining while ensuring the build-up of reserve and benefit funds and simultaneously lobbying politicians or even having their own representatives via labour parties. Accordingly, professional associations and other formations based primarily on self-management or unilateralism rather than bilateral agreements and broader alliances had their own strengths and potential but were seen as inferior and also as outsiders in relation to their ‘triangle of efficiency'. In short, the Webbs were strong adherents of centralised and binding agreements as the main method of enforcing standardisation and a broadening of worker rights simultaneously, whereas self-management in various forms was deemed as less effective in that area. Still, they actually recognised other forms of worker organisation, forming the basis for a tentative typology as summed up in illustration 1.

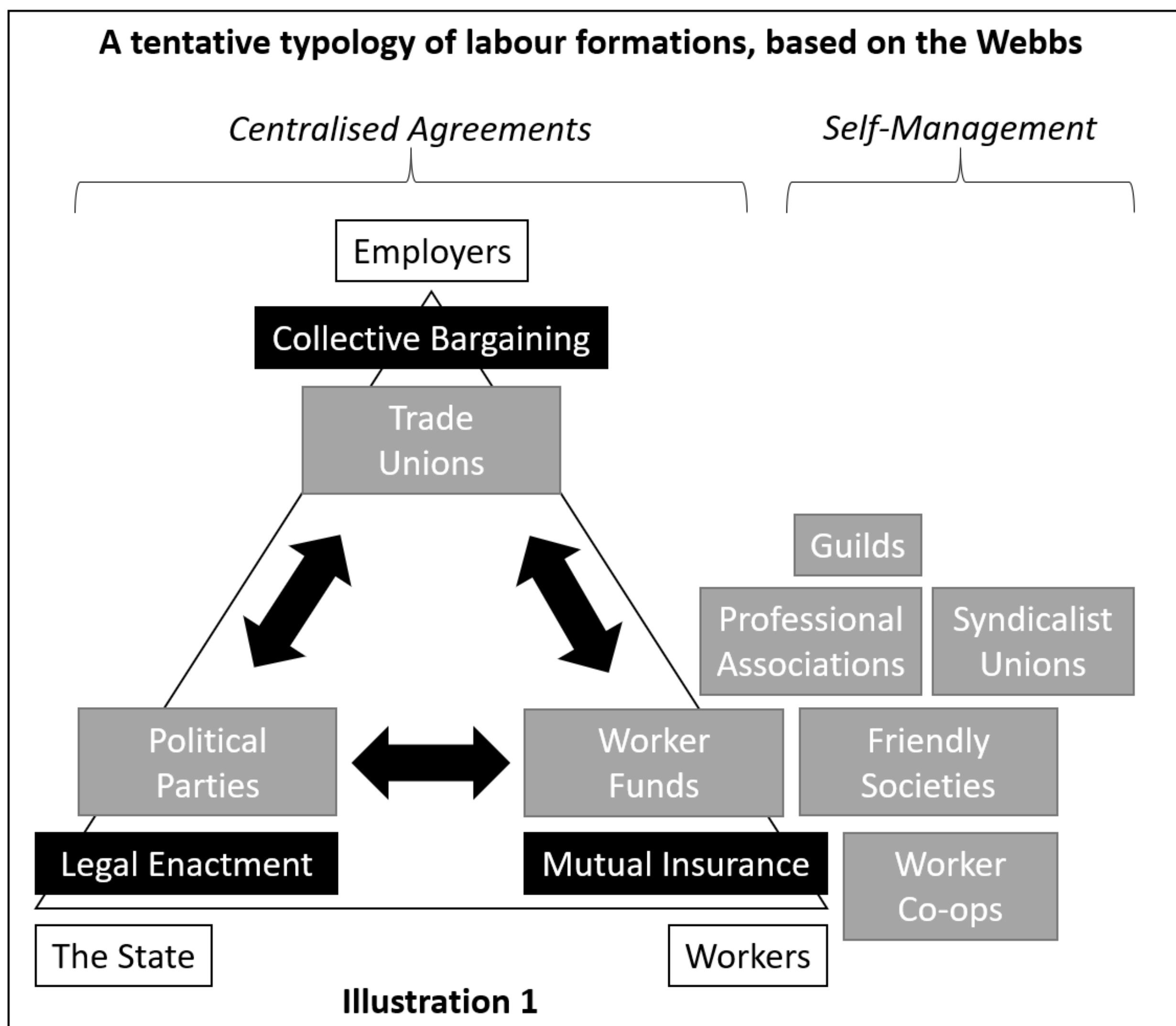


Illustration 1

2.2.3. Worker organisation in the 20th and 21st century

In the past century since the Webbs formulated their theories, knowledge workers have continued to both join trade unions and engage in other forms of worker organisation, although not always to the same degree or with the same orientation as other groups of workers. In addition, the particular forms and methods advocated by the Webbs – i.e. trade unions engaging in collective bargaining, formal representation etc. – seem to face certain challenges after decades of having prevailed as the dominant ideal type within market-based capitalist economies. In other words, this forms the immediate background for the debate on current trends within the organisation of knowledge workers and accordingly the relevance, strengths and weaknesses of the different methods and forms of labour organisation.

Arguably peaking with extensive corporative arrangements and heavy institutionalisation notably in post-WWII Western Europe and Anglo-Saxon countries, many unions originating as combative social movements have today become streamlined interest organisations aiming at piecemeal change and influence. Increasingly however, the model has been challenged by both political, social and technological factors, as witnessed by a huge body of literature proliferating since the

1970'es. Explanations vary considerably, ranging from technological change and increased competition and globalisation of the economy to politicians' or employers' more or less aggressive pressure to cut costs in combination with labour unions' failure to adapt to changes in the workforce. A notable factor socially, theoretically as well as politically is here the fall of the stereotypical male 'mass worker' with a standard model of full-time salaried employment, hierarchically placed in a subordinate job function with limited scope for occupational advancement and living in an integrated and homogenous local community – an ideal type that neither grasps the full diversity of the modern working classes and their social and geographic mobility nor distinct groups such as knowledge workers as well as the recent extent of non-standard or 'atypical' work forms (Marks and Baldry 2009, Standing 2014, Gleerup, Nielsen, Olsén and Warring 2018, Scholz 2017, ILO 2017). Indeed, several studies indicate that whereas some knowledge workers in fact do organise, as a group they are overall still markedly less prone to join traditional trade unions and engage in collective bargaining – although with huge national differences, highly varying explanations and even certain new examples of the opposite. Focusing on knowledge workers today in industries such as the high-tech sector, creative industries etc., explanations of low unionisation degrees vary from certain active employer strategies explicitly aimed at undermining collective response and organising drives in trendsetting places such as Silicon Valley – ranging from a certain 'utopian paternalism' to classical union-busting and a "layer of nondisclosure agreements" (Roose 2013, Berlin 2005, Tiku 2018), whereas others emphasise technological changes resulting in a more fragmented and distributed workforce that in turn challenges traditional organisational strategies for collective representation and bargaining (Bauwens and Niaros 2017). Others rather point mainly to internal limitations in the labour unions themselves when reaching out to new groups (Ferenstein 2013, Frymorgen 2016), such as the prevalence of certain dominant organisational models with an implied focus on professionalism and bureaucratic structures rather than bottom-up community building and worker involvement (Milkman and Voss 2004). For newer occupational groups with limited or no collective memory of struggle or organisation – notably in relation to their particular professional interests and to their position in existing and sometimes complex workplace hierarchies – the lack of role models and ideal types of successful trade unionism to identify with is an actual challenge (Milton 2003, Marks et al. 2017). As most trade unions are based on a dichotomy between salaried employees and their employers – whereas quite a few knowledge workers have supervisory or managerial functions even while being wage earners themselves – some trade unions have difficulties in relating to them socially or politically, even when they are not subject to legal restrictions (such as in the US) against having them as members (Eaton and Voos 2004). Likewise, many unions have difficulties in not just fully understanding but also adequately responding to the rise of new non-standard employment relationships with eroded boundaries between dependent employment and self-employment (Cobble and Vosko 2000) as well as relate to the more autonomous forms of labour related to knowledge work (Bauwens and Niaros 2017).

2.2.4. Contours of alternative/adequate labour organisation

Summing up, the existing literature points towards a number of external as well as internal shortcomings in the established forms of tackling work life issues collectively, notably related to the traditional labour unions engaged in collective bargaining. Rather than being 'the end of history' for worker organisation, however, an apparently growing number of articles both

document and analyse a wide range of new initiatives, communities and others trying to develop new and relevant collective strategies for knowledge workers and others in a flexibilised economy – ranging from informal networking groups among co-workers and self-organised grassroot initiatives to more formalised campaigns and organisations, some of them initiated by established groups such as unions, NGOs etc. (Eidelson 2017, Bryson, Freeman, Gomez and Willman 2017, Freeman 2013, Cook 2016). Recalling the basic categories of labour initiatives identified by the Webbs, the initiatives include not only the setting up of worker-owned companies in the cooperative tradition (Conaty et al 2016) but also other experiments with alternative company structures and ownership forms, including the deliberate breaking down of traditional hierarchies and management structures, introduction of self-management, workers' control, *autogestión* etc. (Vieta 2014, van Meter 2017, Ness 2014, Azzellini 2015). The apparent new wave of knowledge worker activism also seems to include a distinct focus on professional as well as company ethics, maybe even with this as the main component rather than traditional issues such as wages, benefits and working conditions, with employees aiming for jobs with a purpose beyond monetary compensation (Kessler 2020, Ross 2018, Mendel 2020) summed up by slogans such as "the professional is political" (Jimenez 2020). Documentation projects like "Collective Action in Tech" point to concerns over everything from COVID-19 over biased algorithms to accident insurance and job security, however – underlining the need for more systematic studies (Tan and Nedzhvetskaya, 2020).

Coined prevalently as alt-labour (Eidelson 2013) and alternative unionism, but arguably also as open source unionism (Freeman 2013), neo-syndicalism (Heery 2015) or even a revival of "lost ways of unionism" (Cobble 2001), the cases in question appear hugely varied – illustrating not only the diversity among the initiatives, but also the differing responses from established unions and their unequal responsiveness to adapt to changing circumstances and debates that challenge their traditional and fundamental strategic orientations. The question remains however, to what extent knowledge workers are involved and if so, how their particular organisational efforts can be adequately characterised.

3. Literature review

In section 2 we established that knowledge workers historically as well as today indeed seem to be associated with particular work life issues, organisational forms and labour formations, but also that worker organisation as such is historically and factually far more diverse than a simple dichotomy of 'the trade unions of the manual workers vs. the professional associations of the knowledge workers'. On this basis the focus in section 3 is current and recent research in relation to contemporary forms of the organisation of knowledge workers regarding the collective tackling of their work life issues. Specifically, this section will present the results of an extensive literature review conducted for the purpose of this paper.

Focusing primarily on academic texts – articles as well as books, but not necessarily peer-reviewed – published 2000-2020 and based on search in open as well as closed databases with the keywords "knowledge worker", "tech worker" or "cultural worker" in combination with "self-organisation", "union", "labour union", "union renewal" and "alternative unionism", a preliminary and basic library was set up. This was then supplemented with articles referred to in the initial

articles, thus surpassing the original keywords. Texts that did not include a focus on the collective tackling of work life issues in a social or collective perspective (job stability, income security etc.) but rather on performance, productivity etc. were deselected. Articles without specific cases of self-organisation attempts among knowledge workers or not directly focused on knowledge workers but rather primarily on cross-cutting issues such as precarisation, immaterial labour, the gig economy or trade union renewal in general etc. were categorised as secondary texts with possible value for analytical perspectivation etc. The result was a primary collection of 21 academic texts in English, focusing mainly on examples from the US, Canada and Europe – reflective not only of current or historical strongholds of the labour movement and the availability and production of English language academic texts, but also of the traditionally dominant and mainly Western countries in the contemporary world economy. In order to make up for potential bias an extra effort was undertaken, resulting in five further texts on recent developments in Turkey, India, China and Israel, bringing the total up to 26. In total, the selected articles include more than 35 named knowledge worker initiatives across 12 countries, with half of them originating in the US or Canada, 11 in Europe and six in the Middle East or Asia.

3.1. Literature walkthrough

Overall, the texts include examples of knowledge worker organisation ranging from the tech sector to the creative industries and the educational sector, displaying a wide spectrum of organisational efforts including trade unions and professional associations as well as other formations aiming for the collective tackling of work life issues. For the sake of simplicity, the texts will be presented based partly on chronology and partly on an overall distinction between union and non-union cases, pending a more rigorous categorisation. An overview of the 35 named initiatives including their category, full name, period of activity, abbreviation, country, applied worker concept and referenced source(s) is enclosed in the appendix.

3.1.1. New and self-proclaimed trade unions

Over the course of the relevant two decades, a number of new trade unions have been gaining ground among groups of knowledge workers traditionally less prone to unionisation. Specifically, the texts include:

- Studies of the originally New York-based Freelancers Union (King 2014) and the Washington Alliance of Technology Workers, WashTech (van Jaarsveld 2000), formed respectively in 1995 and 1998 and with the latter known as the first tech union in the US. Both started out as associations for contingent and contract workers, but whereas the Freelancers Union deepened its focus on freelancers and now provides specialised insurance services, runs political campaigns etc., WashTech kept focus on the tech area, broadened to include salaried employees and evolved into an official bargaining unit of the larger union CWA (Communication Workers of America), thus illustrating two different strategies.
- Studies of two different unions for university lecturers – the FQPPU/Quebec Federation of University Professors (Gagnon and Beaudry 2014) and the UK-based UCU/University and

College Union (McKnight 2019), that are both examples of relatively established organisations having succeeded in carving out an operational niche for their academic constituencies. Whereas the FQPPU exemplifies the need for a deep understanding of certain professions in order to overcome scepticism in the group towards traditional 'working class' unionism and a wider public engagement, UCU rather illustrates how a mass strike against pension cuts functioned as a catalyst for membership growth, innovative practices and a wider defense of the public university as such (McKnight, ibid). Notably, the 2018 academics strike in the UK was the most extensive in university history, lasting for 14 days over four weeks, with 88% of members voting for strike action across 64 universities.

- Studies of new unions focusing on professionals in the IT sector in Romania (Trif and Stoiciu 2017), Turkey (Kodalak 2013, Özbay 2016) and India (Sarkar 2008) – respectively SITT (Sindicatul IT Timișoara), BITDER (Association of Information and Communication Technologies) and WBITSA (West Bengal Information Technology Services Association) – all focusing on novel sectors in the national economies without any previous union traditions (except for state controlled unions in the case of Romania) and where the expectations of rising professional elites are confronted with the realities of working in call centres for multinational corporations. Whereas trade unionism in all three countries are typically associated with manual workers – with knowledge workers keeping their distance and often having negative perceptions of collective action – the cases in question nonetheless illustrate that under the right circumstances even IT workers will join or start unions and sometimes also head straight to demands for a collective agreement, strike action etc. Specifically, when "being and acting as a union member is compatible with their identity, and when they are able to maintain their reputation and fit with the social environment of unionism" (Kodalak 2013:243). Özbay (2016) even traces a certain spill-over effect, with new union activists engaging in broader social and collective struggles and solidarity with other white-collar or blue-collar workers – with examples such as BİÇDA/Information Technology Workers' Solidarity Network and the IBM-workers of the Plaza Action Platform (PEP) – i.e. a process of mutual inspiration and broadening of the repertoire of available collective action efforts and organisational practices. Particularly regarding India, Sarkar (2008:1059) also notes that unions in countries like the UK have played a contradictory role, i.e. sometimes calling for international assistance towards unionisation in India but at other times protesting against the offshoring of projects and after that failing to call for collective rights for the IT workers in India, thus provoking domestic unionisation drives. Notably in all three countries however, all examples involve multinational corporations while the IT industry both globally and nationally encompass large numbers of small scale, start-up firms.
- A study of the unionisation surge of tech workers in Israel (Fisher and Fisher 2019) since 2014, fueled by the repercussions of the 2008 financial crisis with mass lay-offs, offshore outsourcing of labour and an increase in temporary work hires via external bureaus. Despite Israel having the highest concentration of high-tech-companies per capita in the world and with the industry accounting for 9% of the workforce, unions have been almost absent from the sector. This only changed in recent years, with thousands of new members joining the Histadrut union umbrella and their IT section – the Internet, Cellular

and High-Tech Workers Union. While part of a general labour revitalisation in the country, Fisher and Fisher argues – based on in-depth interviews with leaders of unionisation in seven high-tech firms – that a vital element has been the combination of traditional social issues with issues such as autonomy, recognition, and self-actualisation (coined as social and 'artistic' critique respectively), carefully articulated by union organisers embedded in the industry. Notably, the article also associates high-tech workers as central carriers of an ethos based on ideals of meritocracy, flat hierarchies, less alienation etc., that collective organisations need to take into account.

- A study of the international Game Workers Unite initiative from 2018 (Woodcock 2018), formed by persons with no prior union experience and linking up with existing unions in both the UK and US. In the UK specifically with the IWGB/Independent Workers of Great Britain – a new union focusing on precarious workers, the gig economy etc. but first of all having grassroots and democratic structures allowing for the original group's further development. In the US, GWU collaborates with the major CWA union and their official *Campaign to Organize Digital Employees* (CODE) from January 2020.

3.1.2. Non-union initiatives

Whereas the above organisations explicitly describe themselves as unions – with most of them either actively engaged in collective bargaining or at least actively aiming for it (except the Freelancers Union, being legally barred in the US from official union status as they are not primarily representing salaried employees) – the selected texts document a further broad range of initiatives that do not describe themselves as unions but nonetheless represent various forms of collective organisation:

- Studying employee organisation in Silicon Valley at the start of the century, Hyde (2002) identified that whereas unions were still having a hard time in the region, several other groups and associations or 'Employee Voice Groups' were proliferating – ranging from network-based groups linked up via online communication to ethnic, identity or gender based groups (immigrant networks, LGBT etc.) as well as new groups focusing on 'mobile workers', i.e. frequent job changers including persons working for employment agencies. Finding that groups based on ethnicity or identity (immigrant networks, LGBTQ etc.) largely limited themselves to career and psychic support for their members, certain groups also displayed more union-like features making demands towards management, protesting specific issues etc. In fact, unions were directly involved in some cases – such as the CWA support for Alliance@IBM pension protest group – described however as "virtual unions" because they aim at advancing workers' interests without acting as their legal bargaining representative (Hyde: 523).
- At the same time and in the same sector, Benner (2003) singles out the "surprising (re)emergence of occupational communities" (ibid, p:182) such as the System Administrators' Guild, the HTML Writers' Guild, and the Silicon Valley Web Guild. While seemingly harking back to a pre-industrial social order, Benner traces how the new guilds concern themselves with modern work life issues, emerging as communities for knowledge sharing, contact building and some permanence on a labour market with high turnover rates. Pointing out groups such as the Technical Writers' Trade group, the Graphic Artists' Guild and the Working Partnerships Membership Association – all directly

associated with established unions – he identifies a potential 'new model of unionism' rooted in specific occupational communities trying to empower themselves through a variety of methods (training, services and advocacy) in the absence of collective bargaining.

- While apparently not prevalent in the US in the early 2000's, later studies indicate that self-organised groups of knowledge workers engaging in labour activism in fact do appear over the next decade – with more or less strained relations to existing unions and displaying their own dynamics:
  - Calling out worker self-organisation as a neglected area in studies of union renewal, Croucher, Martens and Singe (2007) meticulously documents the formation of the NCI (Network Cooperation Initiative) at Siemens in Germany, evolving as an autonomous initiative among IT professionals engaging in critical and constructive cooperation with the established union IG Metall.
  - Focusing specifically on work via digital labour platforms, Vandaele (2018) maps emerging patterns of collective representation and worker voice based on examples from Western Europe. Based on a systematic analysis of potential power resources – marketplace, workplace, coalitional etc. – Vandaele documents how new and sometimes infant forms of grass-roots unions, union-affiliated guilds and worker-led platform cooperatives try to assist the different categories of platform workers, often in collaboration with mainstream unions.
  - Explicitly associating knowledge workers with a drive for self-organisation and focusing on the innovative potential "occurring between emergent spontaneous struggles on the one hand and transforming unions on the other", (Brophy 2008: 281) conducts a comparative study of self-organised protest groups in the IT sector ranging from programmers to highly-skilled and diverse call centre workforces at the "digital assembly line". With cases from the US (WashTech), Canada and Italy, notably the latter stands out with the Collettivo PrecariAtesia (CPA) – an autonomous formation in Europe's largest call centre, creatively applying "flexible strikes", digital sabotage and other methods of direct action including occupying the offices of various town councils, the Ministry of Labour, and the trade union CGIL; their struggle culminating after two years in a law revision giving more rights to subcontracted workers. Specifically, he links all three examples with the emergence of post-fordist production relations and the constant recomposition of labour – "an open process … in which new forms of organisation, subjectivities, and social demands are being produced" – in which certain groups have simply no memory of struggle or even memory of labour organising. Thus, innovation happens when self-organising knowledge workers create their own memories or tap into existing narratives.
  - A more recent example of network-based pressure groups is provided by Lin (2020) in his article on The Chinese tech worker mobilisation in March 2019 against long working hours, organised decentrally and via a website used for storing and co-working on source code – aiming at reputational damage rather than work stoppages. The so-called 996 campaign was able to effectively outmanoeuvre state censorship, but also posed questions regarding sustained

mobilisation and consolidation without a direct link to workplace-based organising and with restrictions on labour organising in general.

    - Writing on the apparent and recent surge of US tech worker activism, Fan (2020) also notes the potentially far-reaching implications of public campaigns and "private reordering", i.e. the impact of collective employee action on the legal practices and norms of their employers, notably in relation to ethical questions and "social externalities resulting from their business models, products, and customers" (Fan 2020:47). Focusing on the leverage of technology workers with highly sought-after skill sets, her cases include networks and protests across companies such as the Never Again Pledge (with 2843 signatures on the eve of the Trump election pledging to never take part in designing databases for the US government targeting specific ethnic, religious or political groups etc.), employee resistance in companies such as Microsoft and Google towards the development of face recognition technologies for military use (the 'Tech Won't Build It' campaign) and also more workplace-specific actions such as the Amazon employee and shareholder petition on for a company plan against climate change as well as the Google Walkout with more than 20.000 participants worldwide, protesting the company's handling of sexual misconduct and lacking pay transparency. Notably, she also includes more formalised platforms such as Coworker.org, Gig Workers Rising and the Tech Workers Coalition (TWC) – all three designed for bringing workers together and with the latter explicitly focused on solidarity between more privileged tech workers with groups in the industry.

- Broadening the perspective regarding types of initiatives, de Peuter (2010, 2011) and Cohen (de Peuter and Cohen, 2015) note that in the past decade, 'nonstandard' workers engaged in immaterial labour – coined variously as "cybertariat" (citing Huws 2003), "multitude" (citing Hardt and Negri 2004) or "autonomous workers" – have increasingly emerged as reinventors of labour politics, experimenting with both collective organisation, communication (including alternate vocabularies) and policy proposals. With examples ranging from co-working facilities and co-operatives to artist-run centres and participatory activist groups including the US-based WAGE (Working Artists and the Greater Economy), the UK-based Precarious Workers Brigade as well as the media workers in CIP-IDF (Coordination des intermittents et précarias d'Ile de France), they identify a distinct tendency towards experimentation with structures, objectives and strategies in order to accommodate the work life issues of "mobile immaterial workforces whose conditions cannot be addressed by a labor politic whose horizon is the rehabilitation of standard employment." (de Peuter 2011:421).
- Focusing specifically on experiments with worker co-operatives among cultural workers, Sandoval (2017) confronts current working life issues in the cultural sector – widespread freelancing, job insecurity etc. – with historical discussions in the labour movement both against and in favour of co-ops in order to pinpoint their relevance in a contemporary setting. From the same starting point in what she calls the "grey zone" of neither employed nor fully self-employed, Martinelli (2018) traces the development of the French CAE (Cooperatives of Activities and Employment, specifically the Paris-based enterprise Coopaname) and the Italian Doc Servizi. Both organisations are worker cooperatives

specialised in providing a mutualised and supportive infrastructure for autonomous workers. In both models, members are hired by the cooperative and thereby obtain legal status as an employee. All earnings are converted to salaries. At the same time the cooperatives also provide professional networks, various services and even legal representation and recognition from trade unions. While differing from traditional cooperatives, both have found a niche with growing popularity – with the CAE encompassing 255 cooperatives and 9,500 persons – 850 of them working in Coopaname – and with Doc Servizi having 6,000 members and 32 branches, being the largest of seven similar societies spanning education (Doc Educational), marketing (Doc Creativity), IT (Hypernova), event security (STEA/Safety Theatre Entertainment and Art), publishing (Freecom llc) as well as music events (Doc Live llc).

- Specifically addressing experiments with work organisation in order to provide greater labour protection for the "highest skilled workers of Industry 4.0", Avogaro (2019) investigates new legal concepts such as strategic employee sharing, 'new mutualist workers' organisations' and 'umbrella companies' – the latter exemplified with the worker-owned cooperatives in the Belgian-French Société Mutuelle pour artistes (SMart) that today involves about 90,000 people in 9 different European countries, providing a collective framework for independent workers. In the same vein and based on their ethnography of the Berlin-based co-working space called betahaus, Blagoev, Costas and Kärreman (2019) note that co-working spaces for freelancers and self-employed have exploded in numbers on a global scale from 75 in 2007 to 15,500 in 2017 – providing essential spaces for networking, knowledge exchange and even collective action and mobilisation, i.e. in some ways functioning as 'surrogates' for traditional employing organisations while still offering little in terms of sickness benefits, maternity/paternity leave and trade union representation.
- Finally, two articles focus on alternative work arrangements tailored to collaborative and self-managing knowledge workers and in particular 'Agile', respectively described as a "covert" labour union for professional high-skill knowledge workers (Bulajewski 2013) and a "post-bureaucratic project management technology" (Hodgson and Briand 2013). Thus, whereas Bulajewski traces Agile as an attempt from software engineers to perform better while protecting their autonomy – drawing the lines, however, in terms of programmers vs. non-programmers rather than labour vs. management – Hodgson and Briand rather sees the paradigm as a management technology, masked by employers as an "emancipatory" project, with managers "increasingly adopting a seductive veil of "facilitator" or "friend of creativity" in order to mask the pervasive reapplication of traditional and formulaic management in the interests of capital accumulation." (ibid: 322). Thus, while disagreeing on the origins of Agile, they still agree on the need to address the classical issue of labour vs. management when analysing work life issues.

3.2. Analysis

After having presented the selected texts, we will now as stated confront them with the framework we introduced in section 2 – i.e. focusing on a) definitions and conceptualisation, b) typologisation and c) efficiency.

3.2.1. Definitions and conceptualisations of knowledge workers

While we certainly see the 26 selected texts as highly relevant for our focus on the organisation and self-organisation of knowledge workers – introducing and discussing more than 35 named initiatives, listed in the appendix with category, full name, period of activity, abbreviation, country, applied worker concept and referenced source(s) – they overall display a wide range of perspectives regarding the definition and theorising of knowledge workers. Thus, while nearly all of the texts deal with the same broad subject – i.e. the organisation of knowledge workers in relation to the collective tackling of present-day work-life issues – at the same time they differ with regard to various significant aspects such as: the particular types of knowledge workers examined (high-tech workers, academic professionals, cultural workers, freelancers/self-employed etc.), geographical context (e.g. knowledge workers in long-standing 'knowledge' or 'post-industrial' economies vs. knowledge workers in emerging economies) and theoretical perspectives towards the conceptualisation of knowledge workers and their conditions (e.g. relatively privileged model subjects of neoliberalism; an increasingly disenchanted and disgruntled workforce that is subject to precarisation; or both). However, despite these variations and differences among the texts in question, it is also possible to discern certain convergences among them that may help contribute to a more general definition and understanding of knowledge workers.

First, the texts seem to confirm the notion that knowledge workers in general desire a degree of professional autonomy that sets them apart from most other workers. Notably, knowledge workers react particularly negatively towards measures designed to control their work, such as standardisation or surveillance that they deem excessive. Or as Gorz (1976, cited in Hyman, 1983:40) put it, they "rebel not as proletarians, but against being treated as proletarians". This reaction is epitomised by current and recent examples of knowledge workers experiencing being reduced to 'digital factory workers' performing specialised but still relatively simple and standardised tasks – i.e. college graduates working as content moderators for Facebook or highly trained professionals working as hyper-monitored call centre workers whether in modern or 'emerging' economies (Brophy 2008, Sarkar 2008) – and it seems that this dissatisfaction with excessive control including heavy-handed managers often provides fertile ground for the collective organisation of knowledge workers (Brophy 2008, de Peuter 2010, Bulajewski 2013, Özbay 2016, Fisher and Fisher 2019). However, knowledge worker discontent with the lack or loss of professional autonomy is not limited to issues related to excessive control; indeed, it seems that knowledge workers also tend to react negatively towards an excessive degree of casualisation of their working conditions. Hence, several texts indicate that dissatisfaction with precarious working conditions is also conducive to the collective organisation of knowledge workers (van Jaarsveld 2000, Brophy 2008, de Peuter 2010, Martinelli 2018), leading some to assign knowledge workers with non-standard or even precarious working conditions a central role in relation to union organisation drives (Trif & Stoiciu 2017). In other words, many knowledge

workers clearly enjoy a certain prestige, certain benefits and certain degrees of autonomy – or at least expect to do so. Often however, knowledge workers experience and face the same challenges as other groups of workers. Evidently, the financial crisis in 2008 hit hard across countries, with relative deprivation and setbacks providing triggers for collective organisation from India to Israel (Fisher and Fisher, Sarkar 2008) and knowledge workers too can be subjected to mass layoffs, stress, low job satisfaction, low morale, poor manifestation of rights at the workplace or lack of information from managers – albeit in varying degrees and combinations according to national, professional or industrial contexts. Nonetheless, knowledge workers in certain countries can face additional concerns, such as in India where close to one-third of call centre workers are required to take on an English-sounding name and receive scores according to their pronunciation, resulting in dual-identity anguish or even "zombie identity (no identity at all or loss of identity)" (Sarkar 2008).

Second, the texts overall seem to negate the assumption that knowledge workers are fundamentally disinclined to join or cooperate with unions. Knowledge workers react negatively towards unions and unionisation when these are seen as unable or inadequate to address the particular work-life issues that concern them (Marks et al. 2017), or when union membership is perceived as incompatible with their social identity (de Peuter & Cohen 2015, Marks et al. 2017, Fisher and Fisher 2019) – which, arguably, is more often the case in knowledge work than in blue-collar work, possibly due to the individualised working conditions of much knowledge work in combination with a widespread lack of experiences of collective organisation. However, several of the texts point to the fact that knowledge workers engaged in alternative labour organising often cooperate with unions – which are seen as a strategic ally and source of financial resources (Croucher et al. 2007) – or submit their organisation to formal collective representation when the organisational and legal context makes them deem such a move strategically sound (van Jaarsveld 2000). Crucially, both Fisher and Fisher (2019) and Brophy (2008) underline the dynamic perspective and notably the importance of active agents such as union organisers working carefully with the facilitation and articulation of new collective and unionist identities, combining a classical social critique with a professionally-based 'artistic' critique – all potentially adding to the new 'memories of struggle' serving as inspiration for further mobilisations in groups without prior experience of collective organisation.

Third, the texts seem to confirm the notion that knowledge workers indeed have certain professional or 'artistic' work-life concerns related to the maintenance and management of knowledge that are particular to them, including ethos-related concerns and expectations towards the practice of meritocracy, flat hierarchies, less alienation etc. Especially, the question of maintaining knowledge and skill sets – which in today's fast-paced labour market is increasingly a question of continuously acquiring new knowledge and developing new skill sets – seems to be of vital importance to knowledge workers, many of which work in sectors that are characterised by rapid technological change and innovation, complex organisational restructuring and continual competitive pressures (Benner 2003, Fisher and Fisher 2019:314). In fact, the texts indicate that concerns related to the maintenance of knowledge, including the devaluation of knowledge and status, constitute one of the primary reasons for knowledge workers engaging in collective organising – whether this takes the form of cross-firm mutual aid solutions (Hyde 2002, Benner 2003, de Peuter and Cohen 2015), specialised associations focused on particular occupational groups (van Jaarsveld 2000, Croucher et al. 2007, de Peuter 2010, Gagnon & Beaudry 2014,

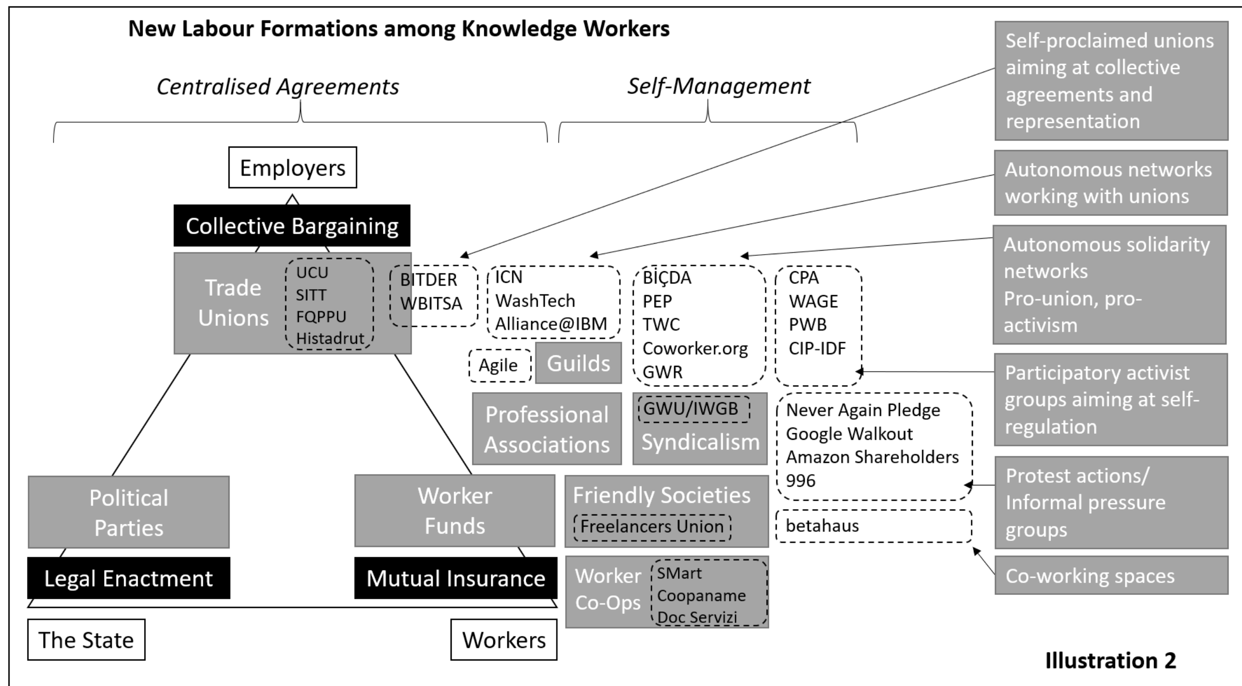
Fisher and Fisher 2019) or workplace-specific demands directed at management (Kodalak 2013, Trif and Stoiciu 2017, Özbay 2018). However, also the question of managing knowledge – including ethics regarding how and to what end the knowledge produced by knowledge workers is applied and also whether their views and ideas are taken seriously (Fisher and Fisher 2019) – seems to be of growing importance, highlighted not least by several recent high-profile protests among tech workers in the US (Fan 2020).
Fourth, at least some of the texts seem to point towards an increasing standardisation – tilted towards degradation and precarisation – of employment and working conditions among at least certain sections of knowledge workers; notwithstanding that significant structural and institutional differences between regions and countries seem to persist. However, this development is ambiguous, encapsulated by both narratives of a degradation of knowledge work and precarisation on the one hand (Sarkar 2008) and narratives of polarisation and knowledge workers in high demand increasingly leveraging their market power on the other hand (Fan 2020). Notably, uniformly optimistic accounts of knowledge workers, "friction-free capitalism" and the future of work – characteristic of the 1990s and early 2000's – seem to be receding (Brophy 2008, Fisher and Fisher 2019).

To sum up, the texts mainly contribute to the definition and theorising of knowledge workers in three regards:

1. The texts confirm the notion that knowledge workers in general desire a degree of professional autonomy that sets them apart from most other workers; a consequence of this is a widespread aversion among knowledge workers towards measures and conditions that they experience as detrimental to their professional autonomy such as either excessive control or excessive casualisation of their work (or both); notably, the texts point to both excessive control and extreme casualisation as circumstances conducive to the collective organisation of knowledge workers.
2. The texts negate the assumption that knowledge workers are fundamentally disinclined to join or cooperate with unions – even though many knowledge workers choose to refrain from union membership or cooperation, the texts cover several cases – spanning time, space and professions – of knowledge workers joining or cooperating with unions.
3. The texts confirm the notion that knowledge workers in general can have shared work concerns with other groups of workers, but also that they have other and particular work-life concerns related to the maintenance and management of knowledge. Due to their specialist insight in production processes they also seem to nurture certain expectations of recognition and having their professional concerns taken seriously, leading to potential clashes with managers.
4. The texts portray a complex and ambiguous development with regard to the employment and working conditions of knowledge workers; on the one hand noting a certain tendency for some groups towards standardisation of these conditions, tilted towards degradation and precarisation – and on the other hand noting polarising tendencies with knowledge workers in high demand leveraging their market power.

3.2.2. Typologisation: Do the Webbs still hold up?

As stated, the selected articles include 35 named initiatives across 12 countries, displaying a great deal of variety. Recalling the tentative typology based on the Webbs and summed up in illustration 1, several of them are self-proclaimed unions or have close links with other and more established unions, indicating the continued relevance of that particular ideal type. Several of the others apparently also fit easily into the categories formulated a century ago – i.e. leaning closely towards professional associations (notably FQPPU, although they also operate as a union, negotiating collective agreements etc.); occupational guilds (such as the self-proclaimed high-tech guilds in Silicon Valley); syndicalist or at least somewhat syndicalist-inspired unions (GWU/IWGB) or worker cooperatives (Coopaname/CAE, Doc Servizi, SMart). Others do not fit quite as easily, however, including the self-organised networks without direct union links (Collettivo PrecariAtesia/CAP, Precarious Workers Brigade/PWB and the Coordination des intermittents/CIP-IDF, not to mention the apparently completely informal 996-campaign in China and initiatives such as the Never Again Pledge, the Google Walkout etc.), co-working spaces like the betahaus or the programmer adherents of the Agile Manifesto. Arguably, the latter most closely resembles a self-regulation attempt or code of conduct associable with a professional association. Likewise, solidarity action groups like the Turkish BİÇDA and PEP or the US-based TWC or Coworker.org are arguably closer to traditional trade unions insofar as they engage in building strength from below and support organising drives aiming at collective agreements. Even so, they are formally pressure groups rather than bargaining units themselves. Finally, being a self-proclaimed union like the Freelancers Union is no guarantee that the group in question has any engagement in collective bargaining or even any particular plans in that direction. In fact, that particular formation has rather striking similarities with the friendly societies a 100 years ago (also noticed by Avogaro 2019:34), arguably amounting to a modern version of the ideal type – explicitly even basing themselves on a “new mutualism” with insurance services, member-to-member relations etc. while also trying to influence legislators from the outside (and notably not aiming at collective bargaining). In other words, this so-called union quite clearly belongs in the mutual insurance corner of the triangle, whereas several of the initiatives grouped in the literature walkthrough as non-unions arguably belong in the union corner insofar as they strategically aim at collective bargaining and in many ways operate as traditional unions, basically building new solidarities and bargaining power. Formally however, the latter group primarily in fact base themselves on mutual support and solidarity, i.e. on methods associated with the opposite corner. Alternatively, they could be assigned with an intermediary position or possibly an ‘evolving’ position, insofar as new formations after all have to start organisationally somewhere. Based on the above, illustration 2 is an attempt to map the various initiatives when holding them up against the tentative typology inspired by the Webbs.

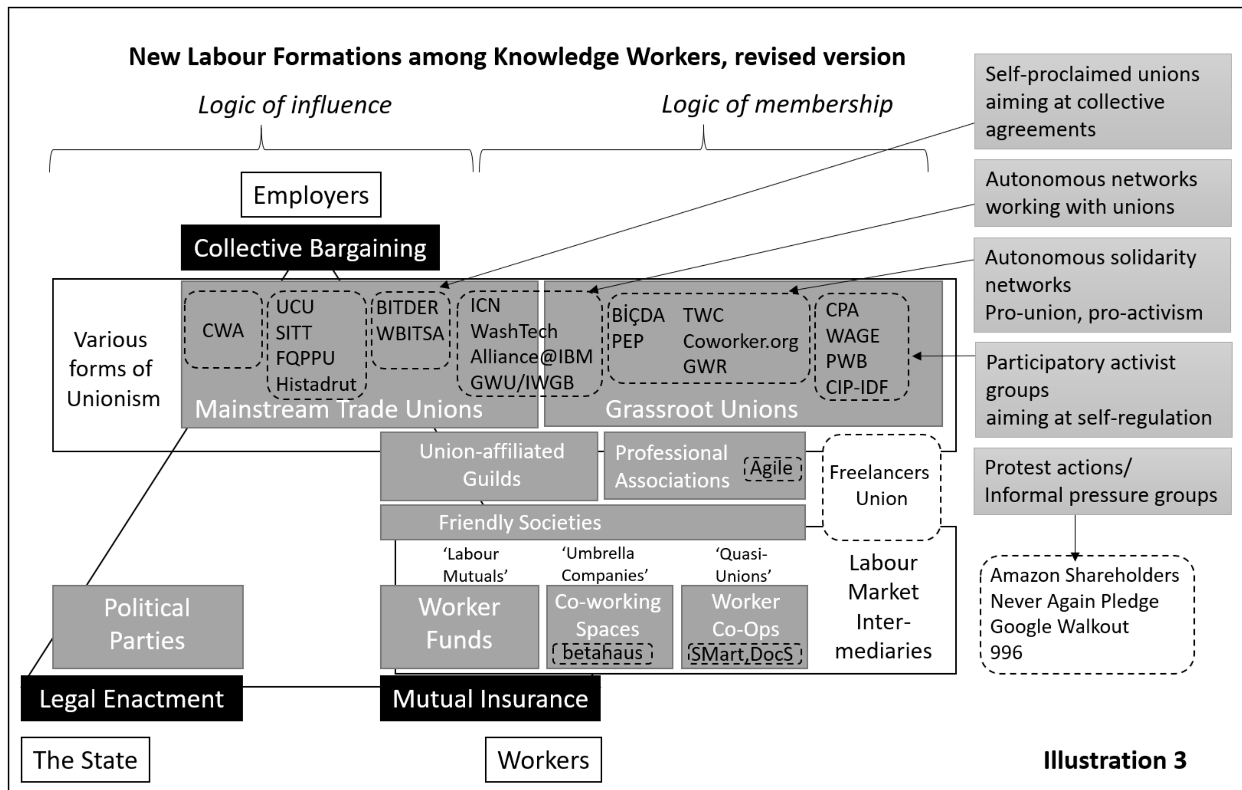


In need of new categories?

On the face of it, the mapping attempt raises questions over a possible lack of relevant categories close to or inside the mutual insurance corner of the triangle as well as over the exact definition of ‘mutual insurance’ (do worker co-ops and protest actions belong in that corner at all, for example?). On the other hand, the three basic methods identified by the Webbs were principally viewed by them as the most effective and practicable methods in a collective perspective, i.e. more so than for example strikes, boycotts, setting up worker-owned enterprises, educational activities etc. For the purpose of this paper, the tentative typology – as earlier stated – thus primarily serves as a historical reference and as a mirror for contemporary formations among knowledge workers. As such, the ideal types in fact still seem to be relevant if not necessarily completely exhaustive or always having a perfect fit.

Notably, none of the selected texts introduce typologies that differ significantly from the one based on the Webbs, even though several of them present their own thoughts on typologies and relevant concepts with slightly differing calibrations. Thus, groups trying to address fragmented or dispersed workforces and advance their rights at work without directly engaging in or per se aiming at collective bargaining are described variously as “virtual unions” (Hyde 2002:523), “open source unions” (de Peuter 2010, referring to Freeman and Rogers 2002), “improvisational unions” (Vandaele 2018, citing Oswalt 2016), “associational unions” (King 2014, referring to Heckscher 1996) or alternatively “occupational unions” (de Peuter 2010, referring to Cobble 2001). With some of the above even explicitly referring to Freelancers Union, this could again cast doubt on the exact categorisation of the organisation – depending on whether collective bargaining is a must or an option for a ‘real union’ – but not necessarily on any of the others. Rather, the list of alternative definitions on the exact meaning of trade unionism serves another important function, specifically that noticing weaknesses inherent in certain forms does not imply a general departure from unionism as such, but rather the trying out of possibly more relevant methods. Vandaele

(2018:4) adds a bit more nerve though, referring not only to different types of unionism, but also expressly “hint at a possible co-existence or combinations of mainstream trade unions and other unions and union-like organisations”, thus putting some limits to the inclusiveness of unionism as a concept, while simultaneously underlining the potential of combining differing methods. In addition, whereas the tentative typology used the terms “centralised agreements” vs. “self-management” to distinguish between traditional trade unions and other groups, Vandaele’s take is to introduce the concepts of “logic of influence” vs. “logic of membership” (referring to Offe and Wiesenthal 1980) – with the former pointing to mainstream unions focusing on results via external partners and the latter towards organisations primarily concerned with the energy and immediate needs of their members (ibid: p.19). Potentially adding nuance to the tentative typology, he also differentiates between mainstream unions and ‘grassroots unions’ such as the GWU/IWGB; ‘union-affiliated guilds’ (which he in line with Benner (2003) sees as the most relevant form to enact changes in work life conditions) and ‘labour market intermediaries’ that provide services to independent workers or workers combining different work forms. Typically based on bottom-up solutions, the latter category displays some variance and hybridisation however – with examples ranging from private actors pursuing profitable objectives to partnerships among professionals in co-working spaces and entities based on mutualisation by users or workers, i.e. membership-based cooperatives where the latter might even be portrayed as ‘labour mutuals or quasi-unions’ (Vandaele 2018: 24), “cooperatives and mutualistic societies” (Martinelle 2018) or with Avogaro (2019) 'new mutualist workers’ organisations’ or ‘umbrella companies’. Explicitly, Vandaele includes platform cooperatives (i.e. cooperatively owned labour platforms) as an emerging subcategory of worker co-ops. Sandoval (2017:10) on her side distinguishes between worker co-operatives and mere employee owned firms – the former based on collective or common ownership and democratic decision making; the latter simply on individual shares, possibly in combination with traditional and hierarchical decision making and as such with the element of workers’ control substantially reduced. Following Sandoval, worker co-ops are arguably a form of employer, indicating a position in the top right corner of the visualised typology. Following Vandaele however, co-ops should rather stay at the bottom in the mutual insurance corner – close to co-working spaces, friendly societies etc., which also fits well with Martinelli (2018) and her analysis of the Doc Servizi and CAE cooperatives simultaneously acting as professional mutualist networks as well as intermediaries to provide independent workers with legal status as employees. In other words, while the exact visualised location is negotiable, the various forms of worker co-ops nonetheless belong in the overall typology of labour formations due to their historical as well as contemporary links with the workers’ movement. A revised typology can be summed up as in illustration 3. Ultimately however, the list of more or less well-defined concepts relating to mutualist arrangements and labour market intermediaries points to the need for further studies and categorisational efforts. For this working paper it is sufficient to recognise the variance and the experiments in the area, however, suggesting that the field is under development.



Crucially, none of the above contradicts the basics of the tentative typology, but rather contributes towards a deeper grasp of the organisational landscape. Notably, all of the original ideal types from a century ago seem to still exist and display relevance for various groups of workers – from worker-cooperatives facing a renewed interest (Sandoval 2017) to contemporary guilds (Benner 2003) and grassroots-unions inspired by syndicalism (Vandaele 2018), possibly with only 'friendly' societies on the margins given their fraternal mode of operation and convergence with insurance arrangements, i.e. with newer labour formations typically being more loose and having fewer direct obligations, unless directly having an element of insurance. With no major alterations to the model and when applying it to the selected literature in this paper, the bottom line can thus be summed up as follows:

1. Knowledge workers do not solely join or start professional associations but also a host of other formations.
2. For knowledge workers engaged in self-proclaimed unions or pro-union groups, aiming directly at collective bargaining with employers and strategically applying a 'logic of influence' is not always the first obvious step. Rather, the first steps often seem to be based on a 'logic of membership', focusing on building up relations and internal solidarity in a community of workers – incidentally both raising life cycle questions regarding the setting up of new labour formations and crucially over the inclusiveness of the concept of 'unionism' as such.
3. For knowledge workers without stable employment as wage earners such as freelancers or engaged in other types of 'atypical work', the most relevant form of collective organisation appears as negotiable – although apparently with a certain attraction towards various forms of mutual insurance or assistance based on self-management and

autonomy, subsidiarily topped up with campaigns to change legislation or possibly start up collective bargaining.

4. The three main methods identified by the Webbs as the most effective and practicable for improving worker rights are not the only methods utilised by knowledge workers when they self-organise.
5. Utilising other methods or noticing potential weaknesses in certain forms of unionism does not imply a general departure from unionism as such, but rather the trying out of possibly more relevant methods; there is not a single type of unionism, but several types.
6. The varied forms of mutualist arrangements and experiments with labour market intermediaries underlines that this field is developing and has a perceived potential among knowledge workers, although further studies and categorisation attempts are probably needed to understand and also map the potential more fully.

3.2.3. Efficiency

A central concern for the Webbs was efficiency. For them, the combination of trade unions engaged in collective bargaining with employers, supported by officially recognised mutual worker funds and with an orientation towards influencing legislators was the strongest triangulation of methods – far more efficient and also more practicable than other available methods such as strikes and direct action, fraternal societies or worker owned cooperatives. Recalling Vandaele (2018), they were clearly adherents of a 'logic of influence', whereas quite a few newer worker organisations rather adhere to a 'logic of membership'. Anyway and with few but notable exceptions however, the literature reviewed indicates some friction or even mismatch at least between certain traditional unions and the knowledge workers in question due to a number of reasons, including different perceptions of the challenges as well as practicable solutions. Basically, we identify two overall findings: 1) Unions persist, but are facing difficulties and 2) New labour formations emerge, but are not necessarily effective.

3.2.3.1. Unions persist, but often face difficulties

On the optimistic note, a major North American union like the CWA has a long track record of supporting new initiatives such as WashTech, Alliance@IBM and Game Workers Unite, thus acting as a bridge builder (van Jaarsveld 2004). There are several well-established unions for university lecturers such as UCU and FQPPU, complete with reserve funds and political campaigning efforts (McKnight 2019, Gagnon and Beaudry 2014). New trade unions such as SITT, BITDER and WBITSA together with new union drives from established and major unions such as CWA or Histadrut demonstrate the continued attraction of the model and also the speed with which the situation can sometimes ripen and prompt mobilisation and unionisation among groups of knowledge workers with no prior union identification, heading straight for collective agreements even with multinational corporations (Trif and Stoiciu 2017, Kodalak 2013, Özbay 2016, Fisher and Fisher 2019), sometimes even drawing inspiration from other social struggles or vice versa (Özbay 2016), adding to a collective 'memory of struggle' (Brophy 2008).

Nonetheless, several of the texts describe the difficulties that many traditional trade unions are having in either gaining a foothold in emerging sectors with many knowledge workers or relating to new self-organised groups trying to address their particular concerns. Typical and general

concerns include high-volatility labour markets with rapidly changing skill requirements, frequent job changes and flexibilised employment practices such as multiple work sites, short-term assignments and freelancing – often facilitated by intermediaries including work agencies and digital labour platforms that sometimes operate in legal grey areas, effectively circumventing existing rules on employment, social protection and corporate taxation (Hyde 2002, Benner 2003, van Jaarsveld 2000, de Peuter 2011, King 2014, Sandoval 2017, Vandaele 2018, Martinelli 2019, Fan 2020). Some also point to more industry specific concerns such as in the cultural sector (Sandoval 2017, Martinelli 2019) or profession-specific concerns, such as teaching quality, academic freedom and intellectual property for university lecturers (Gagnon and Beaudry 2014) or simply the possibility of being heard and obtain influence in a relevant and existing union (Kodalak 2013:137), with certain trade unions giving the impression of being "business unions" (Brophy 2008:2) more interested in "recruitment and services" rather than taking action with and on behalf of their members (Woodcock 2020).

For Brophy (2008) and de Peuter (2010), the situation is grave and reflects a deeper dislocation within the economy and even a "profoundly different form of capitalism" (Brophy 2008:8); away from classical Fordist industrialism with stable workplaces, concentrated workforces and mass production towards post-Fordist and flexibilised production and more precarious work arrangements, characterised by distributed and fragmented workforces typically engaged in self-directed and immaterial labour – simultaneously blurring the line between work and private life, the so-called 'social factory'. Vandaele (2018) makes a somewhat similar point, although limiting his analysis to the area of digital labour platforms and outsourced crowd work that have arguably imposed a new asymmetry in the workers' disfavour and made things harder for the established trade unions. In other words, traditional sources of worker's organisational power and economic security are being 'decomposed' or undermined, although with knowledge workers and other workers engaged in 'recomposition', i.e. experimentation with new and emerging forms of association, counter-power and financial security.

3.2.3.2. New labour formations emerge, but are not necessarily effective

While disagreeing on the continued relevance of the traditional arrangements associated with the Webbs, the reviewed literature nonetheless seem to be consensual that new labour formations for knowledge workers often experiment and innovate, applying new combinations of methods in order to address their particular work life concerns. Still, the texts differ in their various assessments of efficiency:

- Arguably reflecting their inspiration from autonomist Marxism and their disenchantment with existing labour arrangements, Brophy (2008), de Peuter and Cohen (2015) are primarily concerned with any and all signs of workers' self-organisation – ranging from strikes to counter-interpellation, i.e. the implementation of new words to counter marginalisation and affirm workers as subjects rather than objects – as part of a broader recomposition and less with measuring efficiency on behalf of particular initiatives. For them, inefficiency is first of all inherent in the established institutions – including traditional trade unions – with the solution and source of renewal being self-conscious workers acting autonomously. Notably, they are not alone in documenting the potential of worker collectives acting independently and even informally without an apparent organisation – with Hyde (2002), Lin (2012) and Fan (2020) noticing how companies and managers can

be sensitive over their public image as well as internal “morale”, when workers engage in “private ordering”; i.e. transforming established norms via direct action. Similarly, both Özbay (2016) and McKnight (2019) directly trace potential renewal and innovation to mobilisations, with activists simultaneously acquiring new organisational skills and broadening their repertoire – i.e. reimagining what collective action among knowledge workers can look like (Fan 2020), effectively creating new memories of struggle (Brophy 2008) for future inspiration.

- Taking another approach, Vandaele (2018) conducts a systematic analysis of potential power resources for platform workers – marketplace, workplace, coalitional, disruptive, locational etc. – in turn explaining how food couriers have been more effective and more prone to self-organisation than knowledge workers essentially due to structural and external reasons. In a similar vein and studying contemporary guilds, Benner (2003) identifies that they provide important benefits for their members, but also that they lack the ability of their pre-industrial predecessors to create a monopolistic group, thus both hampering them in developing as professional associations while also lacking the protection provided by official union status and collective bargaining agreements. Notably, he expressly singles out guilds with direct links to unions as a potential ‘new model of unionism’ rooted in specific occupational communities trying to empower themselves through a variety of methods (training, services and advocacy) in the absence of collective bargaining. Likewise, Hyde (2002) concludes in his analysis of new employee organisations in Silicon Valley – networks, associations and caucuses – that they are “full of vitality, play interesting roles, and raise policy dilemmas”, but that without bargaining or other labour market power they are simply “institutions of information transmission” (ibid, p.496). Studying coworking spaces, Blagoev, Costas and Kärreman (2019) concludes in a similar way, stating that “while the organizationality of coworking may serve as a way to cope with some of the vagaries of market forces …, it does not provide the securities afforded by contractual employment. The organisationality of coworking offers little in terms of sickness benefits, maternity, or paternity leave, and trade union representation.” (ibid: 911-912), adding however that recognising the organisational dimension of coworking spaces can be a first step towards solutions in this particular dimension. Focusing on worker-cooperatives for cultural workers, Sandoval (2017) takes great care in exploring the complex settings they have to navigate in – on one side pursuing a possible way to build alternative economic structures but on the other side risking to facilitate self-exploitation and spend their energy on a niche project unable to take on the basic structural and societal problems. Finally, while noting the widespread adoption of Agile Methodologies as an ‘emancipatory’ project management system with inbuilt protection for software developers, both Hodgson and Briand (2013) and Bulajewski (2013) point out it its blind spot towards the “antagonism between labor and capital” (bid: 10), causing it to neglect wider worker concerns.

Notably, the two above approaches are not necessarily contradictory. Noticing the innovative and transformative potential of ‘recomposition’ and autonomous direct action – including the power of words, framing and narratives – does not rule out systematic studies or assessments of efficiency based on marketplace, workplace or the ability to practise a monopoly over a certain craft or occupation and exercise cartel power rather than just expressing a labour ‘voice’ (Hyde 2002).

Indeed, while both indicate the potential impact of even informal worker mobilisation, Fan (2020) explicitly locates the power of high-skilled workers with their market power whereas Lin (2012) expresses concern over the ability of web-based and anonymous activists to consolidate victories without a direct link to workplace-based organising.

All in all, efficiency remains a concern in the literature even with different orientations and emphasis, also recalling the notion mentioned earlier of “logic of influence” vs. “logic of membership” (cf. Vandaele 2018). Certainly, questions regarding efficiency and adequacy are important – with different kinds of labour formations sometimes even clashing with each other over these issues; ranging from intra-union rivalry to tension between activist groups and established organisations (Brophy 2008, Woodcock 2020, Croucher, Martens and Singe, 2007). At other times, co-existence and even mutual inspiration and supplementation is possible even with differing logics at play – allowing for new alignments, alliances and constellations. In a historical perspective, we are arguably even undergoing a broader adjustment or “shift in popular interest regime” (cf. Collier 2015, cited by Vandaele 2018) away from post-WW II corporative arrangements centred on a “Union-Party Hub” in favour of a more pluralistic “Associational Network” regime – with unions still having an important role in many countries and settings, but supplemented by NGOs, social movement organisations and new worker organisations etc. The reviewed literature does not give an exhausting answer as to the exact ways of achieving this in different situations, however, but certainly points towards a need for flexibility among labour based organisations and a certain degree of experimentation and adjustments.

4. Conclusion

The aim of this work paper was to conduct a literature review on the organisation of knowledge workers regarding the collective tackling of their work life issues. As preparations for a systematic search for relevant texts and forthcoming comparison and analysis, we took the following steps:

1) Summed up various and central definitions of knowledge workers, focusing not only on convergence but also on differing orientations towards the conceptualisation of knowledge workers in order to get a better understanding of the group in question, including possible or disputed predispositions.
2) Introduced a historical perspective via Sidney and Beatrice Webbs so as to confront the labour landscape of today with the discussions and expectations a century ago; both regarding ‘brain workers’, other workers and the variance among labour formations. Based on their thoughts, we constructed a tentative typology (illustration 1) to let it serve as a mirror for contemporary formations among knowledge workers.
3) Qualified the discussion on contemporary solutions further, specifically via preliminary readings on challenges for the mainstream trade union movement and the contours of alternative labour organisation in recent years.

Based on the above, we assembled a library of 26 English language academic texts published between 2000 and 2020, giving priority to studies with specific cases of self-organisation attempts among knowledge workers and deliberately trying to find examples across countries and

continents. In total, the selected articles included 35 named knowledge worker initiatives across 12 countries, with half of them originating in the US or Canada, 11 in Europe and six in the Middle East or Asia. The cases mainly encompass tech workers, cultural workers and university lecturers, all of them with different traditions and particular challenges, but also a number of shared, similar or overlapping concerns with each other as well as other groups. The assembled texts were thereafter submitted to a systematic and comparative analysis based on 1) the initial definitions, 2) typologisation and 3) notions of efficiency – with 2 and 3 heavily inspired by the Webbs. In section 4.1. we will sum up our main theoretical findings, while rounding off in section 4.2. with implications and recommendations for unions, managers and knowledge workers.

4.1. Theoretical findings

1) Definitions of knowledge workers

First, and regarding the initial definitions, we identified a convergence in favour of the notion that knowledge workers desire professional autonomy to a degree that sets them apart from most other workers. Our analysis of the reviewed literature confirms this notion, adding that measures and conditions that are experienced by knowledge workers as detrimental to their professional autonomy – such as excessive control or excessive casualisation of their work (or both) – can indeed contribute towards the triggering of collective organisation attempts among knowledge workers.

Second, we initially identified a divergence regarding the question of how knowledge workers as a group are positioned in society and how they relate to other groups of workers and society in general – ranging from the classification of knowledge workers as relatively privileged elites to accounts of knowledge workers fracturing into new stratified layers increasingly being subject to a degradation of work and precarisation. Based on our literature review we concluded that:

- There is little to suggest that knowledge workers are in fact relating to and positioned in society as a homogenous group. Instead, the literature seems to suggest that although certain aspects of knowledge workers' employment and working conditions are subjected to standardising tendencies – mainly tilted towards a degradation of work and precarisation – there are also polarising tendencies at play, in some ways adding to the social complexity and heterogeneity of knowledge workers as a group.
- A question in relation to the notion of polarisation is whether knowledge workers are fundamentally disinclined to join or cooperate with unions. Our analysis of the reviewed literature negates a universal assumption – however while pointing to several incidents of knowledge workers actually engaged in alternative or perceived more adequate labour organising as well as joining or cooperating with unions, given certain conducive circumstances.

Third, there seemed to be a convergence among the different definitions in favour of the notion that knowledge workers – in addition to sharing classical work-life issues with other types of worker groups regarding remuneration, job security, social security etc. – have certain work-life concerns notably related to the maintenance and management of knowledge including professionally or 'artistically' based concerns that are particular or at least particularly accentuated to them. Our analysis of the reviewed literature confirms this notion, specifying that both particular

and shared work life concerns can be conducive to the collective organisation of knowledge workers.

2) Typologisation of knowledge worker labour formations

When confronted with the selected literature, the tentative typology based on the Webbs showed great relevance, as it was possible for us to place almost all 35 named cases of knowledge worker organisation in the pre-existing categories (illustration 2). Nonetheless, some of the articles introduced relevant concepts that were able to further qualify the typology (resulting in illustration 3). With no major alterations to the model, we also made the following observations:

1. Knowledge workers do not solely join or start professional associations but also a host of other formations.
2. For knowledge workers engaging in self-proclaimed unions or pro-union groups, their first focus is often on building up relations and internal solidarity based on mutual aid (following a logic of membership) rather than on aiming directly at collective bargaining with employers (following a logic of influence).
3. For knowledge workers with non-standard work arrangements such as freelancing, short term contracts etc. there is not a single and obviously relevant form of organisation. Nonetheless, there seems to be a certain attraction towards various forms of mutual insurance or assistance based on self-management and autonomy, subsidiarily topped up with campaigns to change legislation or possibly start up collective bargaining.
4. The three main methods identified by the Webbs as the most effective and practicable for improving worker rights are not the only methods utilised by knowledge workers when they self-organise. Several examples nonetheless indicate new patterns of co-existence, combinations and collaboration between mainstream trade unions and other labour formations – possibly even signalling the possibility of a broader shift on the macro-level in 'popular interest regime" away from the traditional 'Union-Party Hub' in favour of a more pluralistic 'Associational Network' regime.
5. Utilising other methods or noticing potential weaknesses inherent in certain forms of traditional unionism does not imply a general departure from unionism as such, but rather the trying out of possibly more relevant methods; i.e. there is not a single type of unionism, but several types.
6. The range of new mutualist arrangements and labour market intermediaries points towards a certain potential, but simultaneously calls for further studies and analysis.

3) Efficiency of various collective arrangements

Whereas the Webbs had a strong assumption that trade unions engaged in collective bargaining, backed up by relevant worker funds and working to influence legislators was by far the most effective and practicable combination of available methods, this notion is not universally shared in the reviewed literature – at least regarding knowledge workers, being the focus of this work paper. Notably, the reviewed texts seem to be consensual that new labour formations for knowledge workers often experiment and innovate, applying new combinations of methods in order to address their particular work life concerns; the reason being that some of the traditional methods not always appear fully applicable to the groups in question in their respective work life situations. Basically, we identify two overall findings:

1. Unions persist, but often face difficulties – the latter mainly due to changing labour markets but also given certain internal weaknesses and lack of flexibility.
2. New labour formations emerge, but are not necessarily effective – the latter dependent on either a) the structural position of knowledge workers; i.e. with various groups lacking the ability to disrupt production or create a monopolistic group with control over their trade or occupation; or b) the ability of knowledge workers to engage in building alternative, mutualistic and worker-directed organisations able to replicate certain securities traditionally associated with contractual employment such as sickness benefits, parental leave and collective representation.

However, we also identify two different approaches towards efficiency and adequacy as such. On one side we see an approach being mostly critical of established unionism and advocating for a wider 'recomposition' or reinvention of the labour movement, looking for any and all signs of resistance and new collectives including informal worker mobilisations and the development of new identities and memories of struggle relevant to new worker groups such as knowledge workers. On the other side we see an approach that potentially shares some or even most of the above thoughts, but still insists on a systematic assessment of efficiency based on more traditional notions of workplace and marketplace power. We therefore do not see the two approaches as mutually exclusive, but rather complementary.

When compared to our initial expectations, the literature review thus mostly qualifies our thoughts, even leading to an updated and revised typology of labour formations for knowledge workers. We also want to point out the following, however:

- As we have no pretense of our texts and case examples being exhaustive, we are not postulating that our findings are generally applicable or in any way universal. Rather, we have emphasised taking relevant reservations. Nonetheless, we are not holding back when faced with clear observations such as the fact that – despite not being generally associated with traditional unionism – we do find knowledge workers engaged in collective organisation and aiming at collective work life solutions including unionism, whether mainstream, grassroots or experimental.
- We have almost exclusively based ourselves on qualitative research, partly because this was where our keywords and search process took us and partly because our intention was not primarily to define the exact extent of this or that trend but rather to get a grasp of the wider organisational landscape of collective organisation. Notably we have tried to avoid speculations about the supposed increase of precarious work life conditions among knowledge workers as a general trend – not least because a) we are not aware of any clear consensus on this and b) the situation seems to differ widely between different countries and labour markets.
- Whereas labour studies often uncover significant variations across countries – notably between a) regions within the Global North such as Anglo-Saxon vs. North European vs. South European labour market models and b) the Global North vs. the Global South as such – the study of knowledge worker organisation strikes us as being remarkably convergent across countries, given that the groups in question often face similar questions regarding the full applicability of established models of handling collective work life issues.

- Whereas gender and minority studies have evolved as major areas in labour market research over the last few decades, this has not been a focus area in this work paper. Notably, only a few of the selected texts have had a particular emphasis on gender or minorities, suggesting to us nonetheless that this should be addressed particularly in further studies. Specifically, Fan (2020) refers to the Google Walkout that was triggered by the company's handling of sexual misconduct and lack of pay transparency, whereas Woodcock (2020:2) points to similar questions in the gaming industry. De Peuter (2010:64) and Brophy (2008:8,51) both cite research showing that women and people of colour are typically more exposed to precarious working conditions and that female knowledge workers typically face lower levels of remuneration, prestige, and safety. Notably, whereas Hyde (2002:517) note that women's networks were gaining ground in the early 00'es but thus far without a noticeable impact, Özbay (2016:250-253) strikingly document that women since 2008 have been over-represented in Turkish 'white-collar activism', including leadership positions in new activist labour formations. All in all, these questions have not been central to this working paper.
- Whereas the Webbs viewed political parties and not least labour-based parties as significant actors regarding the implementation of labour-friendly legislation, the question of union-party links is almost non-existent in the reviewed literature. This could be either a) coincidental, b) reflect that we have been focusing on labour studies rather than political studies or c) reflect that in the 21st century the traditional ties in many countries between political parties of various more or less socialist shades and the labour movement have largely been broken or decomposed. As we have not explored this further though, we have no basis for any conclusions on this topic – we are just noticing it as a potential subject for further studies.

4.2. Implications and recommendations

On the basis of the above conclusions it is possible to point towards certain tentative recommendations of relevance for unions, management as well as directly for the knowledge workers themselves:

- **Managers and employers** should notice that knowledge workers not only have certain work-life concerns that need to be addressed in order for them to perform well, but that they could take action accordingly and organise collectively like other worker groups before them in order to make their voices and suggestions heard. Developments like this can become turning points for workplaces and result in constructive collaboration based on a vast range of well-established methods including grievance procedures, formalised dialogue etc. If not taken seriously by the employer however, the mobilisation could escalate and further undermine management's authority and legitimacy – not primarily because of 'external agitators' and the efforts of unionists but rather due to frustrations internally in the workforce.
- **Established trade unions** should notice that knowledge workers are not necessarily closer to management views or less collectively oriented and less union-inclined than other worker groups. Provided that unions take a flexible approach, knowledge workers could join them in large numbers and potentially strengthen both collective bargaining

efforts as well as other approaches, including new innovative strategies. Three central notes on this: First of all, knowledge workers as a term covers a highly heterogeneous group with highly varying work conditions, occupational fields and professional orientations. That said, groups of knowledge workers do not differ in principle to other groups of workers regarding collective organisation, i.e. they can turn to mobilisation and organisation over their work-life concerns which in turn require some space for experimentation with relevant methods. Second, unions should also take notice however, that the preferred methods of knowledge worker groups might differ from the traditional methods of mainstream unions, although they might also supplement them; sometimes they even look conspicuously like reinvented methods that formerly used to be well-known in the labour movement. Third, knowledge workers without recent collective traditions often need to recompose or resample their repertoires of action. The above notes could be elaborated even further:

  - First, whether as salaried employees or freelancers etc. knowledge workers basically have the same interests in job security, compensation, pension savings etc. as other workers towards their employers, although they also often have particular concerns and interests based on their specialist insights, job functions or perceived social identity; concerns that might have been accentuated with a more high-paced labour market with accelerated job shifts, technological innovations, increased freelancing etc. On this background knowledge workers could definitely join existing unions – provided that these seem reasonably able to understand, accommodate and serve these needs and identities. Notably, if knowledge workers are not satisfied with existing unions they sometimes even start their own unions or union-like organisations.
  - Second, while many mainstream unions have had success for years with a certain ‘logic of influence’ – i.e. combinations of collective bargaining with employers, lobbying towards politicians and the build-up of officially recognised and regulated worker funds in case of unemployment, sickness etc. – this will not always be the most obvious methods or priorities for knowledge workers. Rather, they could apply a logic of membership and orient towards the facilitation of new professional communities, new forms of mutual aid or in the build-up of new labour market intermediaries and interfaces – the latter ranging from loose co-working spaces to formalised cooperatives, variously geared towards the provision of relevant infrastructure for autonomous workers, replication of securities traditionally associated with contractual employment or even the reinvention of democracy in the workplace and the conscious superseding of traditional employment.
  - Third, knowledge workers often lack unionist and other collective role models. Lacking a ‘memory of struggle’ sometimes impedes organisation although it can also pave the way for experimentation and innovation, potentially adding to a broader recomposition of the labour movement after years and even decades of political ‘bad weather’ as well as socio-economic and technological changes that haven’t quite been digested yet on a broad basis.
- **Finally, knowledge workers** should notice that they are not alone in having work life concerns – both shared and specific – and that they could organise collectively with others

like so many groups of workers before them. Established unions can offer advice and inspiration, even if they sometimes seem to have become conformists having trouble with solutions 'out of the box'. If needed even new and small organisations can make an impact if they provide relevant suggestions and solutions. Some ways of organising will be less effective or less sustainable in the long run however, even if it seems a good idea for the moment. Anyway and as this working paper has documented, there is certainly plenty of inspiration in the historical and broad labour movement – and in the two first decades of the 21st century knowledge workers all over the globe have engaged in work-related collective action and organisation for the first time; sometimes winning and sometimes losing – but nonetheless broadening their repertoire and simultaneously creating new role models on their way.

Acknowledgements: We would like to thank Katia Dupret and Klaus Tranetoft Nielsen from Roskilde University for their useful suggestions regarding earlier drafts of this working paper.

Literature

- Avogaro, M. (2019). "The Highest Skilled Workers of Industry 4.0: New Forms of Work Organization for New Professions. A Comparative Study". E-Journal of International and Comparative Labour Studies, 8 (1), pp. 29-52.
- Azzellini, Dario, ed. (2015). *An Alternative Labour History. Worker Control and Workplace Democracy*, London: Zed Books, 2015
- Blagoev, B, Costas, J., Kärreman, D. (2019). "'We are all herd animals': Community and organizationality in coworking spaces", Organization 2019, Vol. 26(6) 894-916. https://doi.org/10.1177/1350508418821008
- Bauwens, Michel and Niaros, Vasilis (2017). "The emergence of peer production: challenges and opportunities for labour and unions". European Economic, Employment and Social Policy, N° 3/2017
- Benkler, Yochai. (2006), *The wealth of networks: How social production transforms markets and freedom*, New Haven: Yale University Press
- Benner, Chris. (2003). "'Computers in the Wild': Guilds and Next Generation Unionism in the Information Revolution", International Review of Social History 48 (2003), Supplement, pp. 181–204 DOI: 10.1017/S0020859003001317
- Benson, John and Brown, Michelle. (2007). "Knowledge Workers: What Keeps Them Committed; What Turns Them Away", March 2007, Work Employment & Society 21(1):121-141, DOI: 10.1177/0950017007073623
- Berlin, Leslie. (2005). *The Man Behind the Microchip: Robert Noyce and the Invention of Silicon Valley*, Oxford University Press
- Breman, J., Harris, K., Lee, C.K., and van der Linden, M. (eds.). (2019). *The Social Question in the Twenty-First Century: A Global View*. Oakland: University of California Press. DOI: https://doi.org/10.1525/luminos.74
- Brophy, Enda (2008). "The organizations of immaterial labour: Knowledge worker resistance in post-Fordism. A thesis submitted to the Department of Sociology In

conformity with the requirements for the degree of Doctor of Philosophy”. Queen’s University, Kingston, Ontario, Canada
- Bryson, Alex; Freeman, Richard B.; Gomez, Rafael and Willman, Paul (2017). “The Twin Track Model of Employee Voice: An Anglo-American Perspective on Union Decline and the Rise of Alternative Forms of Voice”. IZA Discussion Paper No. 11223. https://ssrn.com/abstract=3092567
- Bulajewski,Mike. (2013). The Agile Labour Union. West Space Journal, issue 2, Summer 2013. http://journal.westspace.org.au/article/the-agile-union/
- Caruso, Loris. (2015). “The ‘knowledge-based economy’ and the relationship between the economy and society in contemporary capitalism”. European Journal of Social Theory, 1-22
- Cobble, DS and Vosko, LF (2000) “Historical Perspectives on Representing Nonstandard Workers”. In: Carré, F (eds) (2000) Nonstandard Work. The Nature and Challenges of Changing Employment Arrangements. Champaign (IL), Industrial Relations Research Association Series, pp.291–312.
- Cobble, Dorothy Sue. (2001). "Lost Ways of Unionism. Historical Perspectives on Reinventing the Labor Movement." in Lowell Turner, Harry C. Katz, and Richard W Hurd. Rekindling the Movement Labor's Quest for Relevance in the Twenty-First Century. ILR Press/Cornell University Press: Ithaca and London 2001.
- Collier, Ruth B. (2015). “The High-Tech Economy, Work, and Democracy 2.0: A Research Agenda”, IRLE Working Paper No. 114-15, July 2015
- Cook, Christopher D. (2016). "How Freelancers Are Reinventing Work Through New Collective Enterprises". Shareable, October 11, 2016. https://www.shareable.net/blog/how-freelancers-are-reinventing-work-through-new-collective-enterprises
- Conaty, Pat; Bird, Alex and Ross, Philip. (2016). *Not Alone - Trade Union and cooperative solutions for self-employed workers*, Co-operatives UK, 2016
- Croucher, R., Martens, H. & Singe, I. (2007). “A German Employee Network and Union Renewal: The Siemenskonflikt.” Relations industrielles, 62(1), 143–169. doi:10.7202/015801ar
- De Peuter, Greg and Cohen, Nicole. (2015), “Emerging Labour Politics in Creative Industries”. Routledge Companion to the Cultural Industries, ed. Kate Oakley and Justin O’Connor (London: Routledge, 2015), 309
- de Peuter, Greig. (2011). “Creative Economy and Labor Precarity: A Contested Convergence.” Journal of Communication Inquiry 35(4): 417-425. DOI: 10.1177/0196859911416362
- de Peuter, Greigory. (2010). “The Contested Convergence of Precarity and Immaterial Labour. Dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy”, School of Communication, Simon Fraser University. https://doi.org/10.1177/0196859911416362
- Drucker, Peter F., (1966). *The Effective Executive.* New York
- Ducker, Peter. F., (1994). “The age of social transformation”, The Atlantic Monthly, November 1994

- Drucker, Peter F., (1999). “Knowledge-Worker Productivity: The Biggest Challenge”, California Management Review, Winter 1999, Vol. 41, no 2.
- Dupret, Katia. (2017). “Working around technologies – invisible professionalism?” New Technology, Work and Employment 32 (2), 174-187. https://doi.org/10.1111/ntwe.12093
- Dupret, K. & Vorre Hansen, A. (2021). Alternative organizing – knowledge workers organization in the future. ISSN 2597-1360 *Working paper series – Socially Innovative Knowledge Work. www.futureknowledgework.com*
- Dupret K. & Pultz, S. (2021) Hard/heart worker - work intensification in purpose driven organisations. *Article submitted for publication*
- Eaton, Adrienne E and Voos, Paula. (2004). “Managerial Unionism: Prospects and Forms”. Labor Studies Journal 29(3):25-56. DOI: 10.1353/lab.2004.0039
- Ehrenreich, Barbara, and John Ehrenreich. 1979. “The professional-managerial class.” In Between labor and capital, edited by Pat Walker, 5-48. Boston: South End Press.
- Eidelson, Josh. (2013). “Alt-labor”. The American Prospect, 24 (Jan/Feb.): 15-8. https://prospect.org/notebook/alt-labor/
- Eidelson, Josh. (2017). "Union Power Is Putting Pressure on Silicon Valley’s Tech Giants", Bloomberg BusinessWeek, September 14, 2017. https://www.bloomberg.com/news/articles/2017-09-14/union-power-is-putting-pressure-on-silicon-valley-s-tech-giants
- Fan, Jennifer S. (2020) "Employees as Regulators: The New Private Ordering in High Technology. Companies," Utah Law Review: Vol. 2019 : No. 5 , Article 2.
- Ferenstein, Gregory. (2013). “Why Labor Unions And Silicon Valley Aren’t Friends, In 2 Charts.”, TechCrunch, July 29, 2013: https://techcrunch.com/2013/07/29/why-labor-unions-and-silicon-valley-arent-friends-in-2-charts/?guccounter=1
- Fisher, Eran and Fisher, Ben. (2019). “Shifting Capitalist Critiques: The Discourse about Unionisation in the Hi-Tech Sector”, tripleC: Communication, Capitalism & Critique, Vol 17 No 2 (2019), https://doi.org/10.31269/triplec.v17i2.1107
- Florida, Richard (2002). *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life*. New York: Basic Books
- Freeman, Richard B. 2013. “What Can Labor Organizations Do for US Workers When Unions Can't Do What Unions Used to Do?” in Luce, S; Luff; J; McCartin, JA and Milkman, R. (eds) (2013). *What Works for Workers: Public Policies and Innovative Strategies for Low-Wage Workers*, p. 50-78. New York: Russell Sage Foundation.
- Frymorgen, Tomasz. (2016). “The Rise of the Unorganizable” in Jacobin Magazine, september 2016. https://www.jacobinmag.com/2016/09/the-rise-of-the-unorganizable/
- Gagnon, Melanie and Beaudry, Catherine. (2014). "Becoming and Remaining an Independent Union: A Comparative Case Study of Two University Faculty Unions.". Just Labour: A Canadian Journal of Work and Society, Volume 21 (Spring 2014). https://doi.org/10.25071/1705-1436.12
- Gleerup, J., Nielsen, B., Olsén, P., & Warring, N. (2018). *Prekarisering og akademisk arbejde.* Tidsskrift for Arbejdsliv, 20(1), 9-29. https://doi.org/10.7146/tfa.v20i1.108195
- Hardt, Michael and Negri, Antonio. (2009). *Commonwealth.* Cambridge: Harvard University Press.

- Heery, E. (2015). “Unions and the organising turn: reflections after 20 years of Organising Works”. The Economic and Labour Relations Review, 26/4:545–60
- Hodgson, Damian and Briand, Louise. (2013). “Controlling the uncontrollable: ‘Agile’ teams and illusions of autonomy in creative work”, Work, employment and society, 27(2) 308-325, DOI: 10.1177/0950017012460315
- Hyde, Alan. (2002). “Employee Organization in Silicon Valley: Networks, Ethnic Organization, and New Unions”, U. PA. Journal of Labor and Employment Law, Vol. 4:3
- Hyman, R. (1983). “Introduction”. In Hyman, R. & Price, R. (Ed). *The New Workıng Class? White-collar Workers and Their Organizations*, (pp. 3-45). London: The Macmillan Press Ltd.
- Hyman, Richard and Gumbrell-McCormick, Rebecca (2017). “Resisting labour market insecurity: old and new actors, rivals or allies?” Journal of Industrial Relations, 59 (4). pp. 538-561. ISSN 0022-1856. DOI: 10.1177/0022185617714423
- ILO (2017). *Promoting adequate social protection and social security coverage for all workers, including those in non-standard forms of employment.* International Labour Organization. Paper presented at the 1st Meeting of the G20 Employment Working Group, 20 – 22 February 2018. Buenos Aires, Argentina
- Jimenez, Esmy. (2020). "‘We Won’t Build It’: Northwest Tech Workers Struggle With Company Ties To Immigration Enforcement". Northwest Public Broadcasting. January 14, 2020. https://www.nwpb.org/2020/01/14/we-wont-build-it-northwest-tech-workers-struggle-with-company-ties-to-immigration-enforcement/
- Kalleberg, A. L. (2009). “Precarious work, insecure workers: Employment relations in transition”. American Sociological Review, 74(1), 1-22. https://doi.org/10.1177/000312240907400101
- Kessler, Sarah. (2020). "Here’s How Professional Union Busters Talk About ‘Woke’ Tech Organizers", OneZero (August 8, 2020). https://onezero.medium.com/heres-how-professional-union-busters-talk-about-woke-tech-organizers-3686274e6b39
- King, Martha. (2014). ”Protecting and Representing Workers in the New Gig Economy: The Case of the Freelancers Union.” In *New Labor in New York: Precarious Workers and the Future of the Labor Movement*, edited by Ruth Milkman and Ed Ott, 150-172. Ithaca, NY: Cornell University Press, 2014
- Kodalak, C. Metin. (2013). “Social Identity and Collective Action : Two Case Studies of Unionization in the Turkish Information Technologies (IT) Sector”. A Thesis Submitted for the Degree of Doctor of Philosophy in Sociology, Universität Bremen
- Lin, Kevin. (2020). “Tech Worker Organizing in China: A New Model for Workers Battling a Repressive State”, New Labor Forum, 2020, Vol. 29(2) 52-59, The Murphy Institute, CUNY School of Labor and Urban Studies, DOI: 10.1177/1095796020916201
- Lund, Nicklas Freisleben (2016). "De fremtidsløse tager ordet. Klasse, prekariat og velfærdskritik i dansk samtidsprosa". Passage, Årg. 31 Nr. 76 (2016). Aarhus: Aarhus Universitetsforlag, 27-39. DOI: https://doi.org/10.7146/pas.v31i76.25229
- Marks A, Chillas S, Galloway L & Maclean G. (2017), “Confusion and Collectivism in the ICT Sector: Is FLOSS the answer?”, Economic and Industrial Democracy 41 (1), pp. 167-188. https://doi.org/10.1177/0143831X17695441

- Marks, A. and Baldry, C. (2009), “Stuck in the middle with who? The class identity of knowledge workers”, Work, Employment and Society, 23, 1, 49-65
- Martinelli, Francesca. (2018). “Innovative cooperation’s model in Europe. A solution to the growing uncertainty in the world of work”, ILPC 2018, 21-21 March, Buenos Aires
- McKnight, Heather (2019) “The Sussex campus ‘Forever Strike’: estrangement, resistance and utopian temporality”. Studies in Arts and Humanities, 5 (1). pp. 145-172. ISSN 2009-826X
- Mendel, David. (2020). "Employee activism in the tech industry", Freshfields, Bruckhaus Deringer, Lexology. February 7, 2020. https://www.lexology.com/library/detail.aspx?g=7b9aa959-64ef-46de-a969-c1abed649d22
- Milkman, Ruth and Voss, Kim, ed. (2004). *Rebuilding Labor: Organizing and Organizers in the New Union Movement*. Cornell University Press, 2004
- Milton, Laurie P. (2003). “An Identity Perspective on the Propensity of High-Tech Talent to Unionize”. Journal of Labor Research, March 2003, Volume 24, Issue 1, pp 31–53
- Ness, Immanuel. (2014). *New forms of Worker Organization: The Syndicalist and Autonomist Restoration of Class-Struggle Unionism*, PM Press
- NCI (2008). “Wie andere uns sehen”. https://www.netzwerkit.de/ueber_uns/medienecho
- Poulantzas, N. (1975). Classes in Contemporary Capitalism. London: NLB.
- Pultz, S. & K. Dupret. (2020). A systematic review of risk and protective factors associated with flexibility. ISSN 2597-1360 *Working paper series – Socially Innovative Knowledge Work. www.futureknowledgework.com*
- Roose, Kevin. (2013). “Silicon Valley’s Anti-Unionism, Now With a Side of Class Warfare”, Nymag.com, July 11, 2013, https://nymag.com/intelligencer/2013/07/silicon-valleys-anti-unionism-and-class-warfare.html
- Rose, Mike. (2009). "Blue-Collar Brilliance: Questioning assumptions about intelligence, work, and social class". The American Scholar, Vol. 78, No. 3 (SUMMER 2009), pp. 43-49
- Ross, Andrew. (2018). "Don’t be evil: why the rise in employee activism should matter to tech?", Information Age. December 5, 2018. https://www.information-age.com/employee-activism-tech-123477012/
- Sandoval, M. (2016). “Fighting Precarity with Co-operation? Worker Cooperatives in the Cultural Sector”. New Formations: a journal of culture/theory/politics, 88, pp. 51-68. doi: 10.3898/NEWF.88.04.2016
- Sandoval, Marisol. (2017). “From passionate labour to compassionate work: Cultural co-ops, do what you love and social change”. European Journal of Cultural Studies. https://doi.org/10.1177/1367549417719011
- Sarkar, Santanu. (2008). “Trade unionism in Indian BPO-ITeS industry – insights from literature.”, The Indian Journal of Labour Economics, Vol. 51, No. 4, 2008
- Schmidt, Jeff. (2000). *Disciplined Minds: A Critical Look at Salaried Professionals and the Soul-battering System That Shapes Their Lives*. Rowman & Littlefield Publishers
- Scholz, Trebor. (2017). *Uberworked and Underpaid: How Workers Are Disrupting the Digital Economy.* Cambridge, UK and Malden, USA: Polity Press, 2017

- Schwab, Klaus. (2016). *The Fourth Industrial Revolution.* World Economic Forum, Geneva, Switzerland.
- Standing, Guy (2014). *A Precariat Charter: From Denizens to Citizens*, London: Bloomsbury
- Standing, Guy. (2016). *The Precariat. The New Dangerous Class*. Bloomsbury Academic
- Tan, JS and Nataliya Nedzhvetskaya. (2020). Collective Action In Tech. https://github.com/collective-action/tech
- Tiku, Nitasha. (2018). “”Why Tech Worker Dissent Is Going Viral”, *WIRED,* June 29, 2018, https://perma.cc/E7B8-ZKGQ
- Trif, Aurora and Stoiciu, Victoria. (2017). ”Turning crisis into opportunity: innovation within the Romanian trade union movement”, *Innovative union practices in Central-Eastern Europe*, Edited by Magdalena Bernaciak and Marta Kahancová, Brussels: European Trade Union Institute (ETUI)
- Van Jaarsveld, Danielle Dorice. (2000), “Nascent Organizing Initiatives Among High-Tech Workers at Microsoft and Beyond: Lessons from WashTech/CWA”, Thesis (M.S.), Cornell University, August 2000, https://www.researchgate.net/publication/34513682
- van Meter, Kevin (2017). *Guerillas of Desire. Notes on Everyday Resistance and Organizing to Make a Revolution Possible*. AK Press 2017
- Vandaele, Kurt. (2018), “Will trade unions survive in the platform economy? Emerging patterns of platform workers’ collective voice and representation in Europe”, Working Paper 2018.05, Brussels: European Trade Union Institute, Brussels
- Vieta, Marcelo. (2014). “The stream of self-determination and autogestión: Prefiguring alternative economic realities”, Ephemera. Theory & Politics in Organisation, 14(4). http://www.ephemerajournal.org/contribution/stream-self-determination-and-autogesti%C3%B3n-prefiguring-alternative-economic-realities
- Villadsen, K. (2017). “Constantly Online and the Fantasy of ‘Work–life Balance’: Reinterpreting Work-connectivity as Cynical Practice and Fetishism.” *Culture and Organization*, *23*(5), 363-378. https://doi.org/10.1080/14759551.2016.1220381
- Wark, McKenzie. (2004). *A Hacker Manifesto*. Harvard University Press
- Webb, Sidney, and Webb, Beatrice. (1898). *The History of Trade Unionism*. New York: Longmans, Green, 1920.
- Wonacott, Michael E. (2002), “Gold-Collar Workers”. Columbus OH: ERIC Clearinghouse on Adult Career and Vocational Education, published 2002-00-00.
- Woodcock, Jamie. (2020), “How to beat the boss: Game Workers Unite in Britain”, Capital & Class 1-7, https://doi.org/10.1177/0309816820906349
- Wright, Erik Olin. (1985). *Classes*. London: Verso
- Özbay, Özdeş. (2016), “The Changing Working Class: A New Repertoire of Collective Actions and Organizational Practices in Istanbul”, In Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy Political Science, Istanbul Bilgi University

Appendix: Overview of named labour initiatives

Category	Full name	Period of activity	Country	Applied worker concept	Author(s)
Union	Freelancers Union	1995 -	USA	Freelancers and independent workers	King; de Peuter (2010)
Union	WashTech (Washington Alliance of Technology Workers)	1998 -	USA	Tech workers and 'permatemps'	van Jaarsveld
Union	FQPPU (Fédération québécoise des professeures et des professeurs d'université)	1991 -	Canada	University lecturers	Gagnon and Beaudry
Union	UCU (University and Colleges Union)	2006 (*) -	UK	University lecturers	McKnight
Union	Sindicatul IT Timișoara	2009 -	Romania	IT professionals	Trif and Stoiciu
Union	BITDER (Association of Information and Communication Technologies)	2009 - 2010	Turkey	White collar tech workers	Özbay; Kodalak
Union	WBITSA (West Bengal Information Technology Services Association)	2006 - 2013 (**)	India	IT workers	Sarkar
Union	GWU (Game Workers Unite)	2018 -	UK	Game developers	Woodcock
Union	Histadrut (Internet, Cellular and Hi-Tech Workers Union)	2014 -	Israel	Hi-tech workers	Fisher and Fisher
Employee Voice Groups	Alliance@IBM	1999 - 2016	USA	IT employees at IBM	Hyde
Guild	System Administrators' Guild	2003 - 2010 (2016)	USA	Knowledge workers in the information economy	Benner

Guild	HTML Writers' Guild	1998 -	USA	Knowledge workers in the information economy	Benner
Guild	Silicon Valley Web Guild	1996 -	USA	Knowledge workers in the information economy	Benner
Union-affiliated guilds	Technical Writers' Trade Group	1980'es -	USA	Knowledge workers in the information economy	Benner
Union-affiliated guilds	Graphic Artists' Guild	1967 -	USA	Knowledge workers in the information economy	Benner
Union-affiliated guilds	Working Partnerships Membership Association	1997 -	USA	Temp workers	Benner
Self-organised groups	NCI (Network Cooperation Initiative)	2002 - 2005 (***)	Germany	Hi-tech workers	Croucher, Martens and Singe
Self-organised groups	CPA (Collettivo PrecariAtesia)	2005 -	Italy	Call-centre workers	Brophy
Self-organised groups	996 Campaign	2019	China	Tech workers	Lin
Self-organised groups	WAGE (Working Artists and the Greater Economy)	2008 -	USA	Cultural workers	de Peuter and Cohen
Self-organised groups	PWB (Precarious Workers Brigade)	2010-	UK	Cultural workers	de Peuter and Cohen
Self-organised groups	CIP-IDF (Coordination des intermittents - précarias d'Ile de France)	2003 -	France	Contract-based media workers	de Peuter (2010)
Self-organised groups	Agile	2001 -	USA	Software developers	Bulajewski; Hodgson and Briand
Self-organised groups	Never Again Pledge	2016	USA	Tech workers	Fan
Self-organised groups	Anti-project Maven	2018	USA	Tech workers	Fan

Self-organised groups	Google Walkout	2018	USA	Employees at Google	Fan
Self-organising platform	Coworker.org	2013 -	USA	Colleagues	Fan
Self-organising platform	Gig Workers Rising	2018 (?) -	USA	Platform workers	Fan
Self-organising platform	TWC (Tech Worker Coalition)	2014 -	USA	Tech workers	Fan
Solidarity group	BİÇDA (IT Workers' Solidarity Network / Bilişim Çalışanları Dayanışma Ağı)	2010 -	Turkey	White collar tech workers	Özbay; Kodalak
Solidarity group	PEP (Plaza Action Platform / Plaza Eylem Platformu)	2008-2010	Turkey	White collar employees at IBM	Özbay
Cooperative	SMart (Société Mutuelle pour artistes)	1998 -	Belgium	Highest skilled workers of Industry 4.0	Avogaro; Martinelli
Cooperative	Coopaname (part of Cooperatives of Activities and Employment)	2004 -	France	Self-employed workers	Martinelli
Cooperative	Doc Servizi	1990 -	Italy	Self-employed workers	Martinelli
Co-working space	Betahaus	2009 - today	Germany	Independent workers in the creative industries	Blagoev, Costas and Kärreman

Notes:

* One of the UCU founder unions goes back to 1904
** WBITSA merged in 2014 with FITE (Forum for IT Employees)
*** The German self-help and solidarity group Netzwerk IT claims to have roots in the NCI (https://www.netzwerkit.de/ueber_uns/medienecho)