



International
Labour
Organization

A Reflection on the Future of Work and Society

Preprint edition



Copyright © International Labour Organization 2017
First published 2017

Publications of the International Labour Office enjoy copyright under Protocol 2 of the Universal Copyright Convention. Nevertheless, short excerpts from them may be reproduced without authorization, on condition that the source is indicated. For rights of reproduction or translation, application should be made to ILO Publications (Rights and Licensing), International Labour Office, CH-1211 Geneva 22, Switzerland, or by email: rights@ilo.org. The International Labour Office welcomes such applications.

Libraries, institutions and other users registered with a reproduction rights organization may make copies in accordance with the licences issued to them for this purpose. Visit www.ifrro.org to find the reproduction rights organization in your country.

A Reflection on the Future of Work and Society
International Labour Office – Geneva: ILO, 2017

ISBN 978-92-2-131416-5 (print)
ISBN 978-92-2-131417-2 (web pdf)

The designations employed in ILO publications, which are in conformity with United Nations practice, and the presentation of material therein do not imply the expression of any opinion whatsoever on the part of the International Labour Office concerning the legal status of any country, area or territory or of its authorities, or concerning the delimitation of its frontiers.

The responsibility for opinions expressed in signed articles, studies and other contributions rests solely with their authors, and publication does not constitute an endorsement by the International Labour Office of the opinions expressed in them.

Reference to names of firms and commercial products and processes does not imply their endorsement by the International Labour Office, and any failure to mention a particular firm, commercial product or process is not a sign of disapproval.

Information on ILO publications and digital products can be found at: www.ilo.org/publns.

Printed in Switzerland.

A reflection on the Future of Work and Society

Work and Society workshop, 21-22 September 2017, Turin, Italy

Table of Contents

Background.....	3
Objective of the workshop	3
What is meant by future?	3
In the context of a dystopian world	3
Three Main Points of Convergence	4
(1) We should all work.....	5
(2) A changing value and definition of work	7
(3) New social model(s) with the participation of all	8
Annex 1: List of Participants.....	10
Annex 2: Links to visuals.....	12
Annex 3: Articles submitted for the meeting	13
• Ingredients for a new social model	14
• Psychology and the International Labor Organization: The Role of Psychology in the Decent Work Agenda.....	16
• The future of work in Latin America	28
• Workshop of Experts on Work and Society: A contribution to the Future of Work Initiative Turin, Summary of recent research	32
• The Future of Work: Thoughts from a Developing Country Perspective.....	37
• Unions and society	40
• Gender Equality in Employment: Current status and possible futures.....	45
• The Future of Work and 21 st Century (Digital) Skills	50
• Transitionary competence:A framework for cognitive competence as critical dimension to pro-silient socio-economic participation.....	68
• Position paper on Innovation, work, and social revolution.....	70
• Notes for the Meeting of Experts on Work and Society	75
• Some Notes on Technology and its impact on the world of work: A view from India	80
• Emerging Technologies + the Future of Work in India	86
• Work and Society in a Developing China.....	90

Background

The workshop was organized in the framework of the Future of Work Initiative, with special focus on the “Work and Society” centenary conversation. The workshop offered a unique opportunity to reflect on the issue of work and society from a multi-disciplinary perspective. It gathered together a range of experts from different disciplines (including history, psychology, sociology and education), who met in Turin on 21 and 22 September 2017.

The workshop was designed and supported by María Prieto and María-Marta Travieso (FOW Unit), who are also the authors of this report.

Objective of the workshop

Work and society, and how they interact, are major components of the discussions around the future of work. These are dynamic and complex issues that need to be analysed from multiple perspectives. A range of experts from different disciplines came together with the objective of understanding the current analysis, thinking and debates on the issue of work and society. Discussions revolved around how the meaning of work has evolved and the impact that this has had on society (and vice versa) in both developing and developed economies. The workshop examined the opportunity to reclaim the centrality of work in the quest for personal and social development. In so doing, it took into consideration the various aspects of issues such as: work and material well-being, societal changes, ideology, personal development, dignity and cultural aspects, work-life balance, consumer awareness, stress management, burn-out and harassment.

What is meant by future?

A key dimension of the discussion on the future of work is the **time horizon**. In other words, how far into the future we are looking: five years, until the end of the 2030 Agenda for Sustainable Development, or 100 years? The time scale fundamentally informs our vision of the future and how to best address the challenges and opportunities that arise.

Relationships between the individual, work and society as a whole have changed over time, and the pace of this change has accelerated in recent years and is continuing to do so. It was within the context of an often unimaginable speed of change, in an unforeseeable future, that the experts offered their projections for the future. However, an assumption underlying much of the discussion is that the **future is not predetermined**.

In the context of a dystopian world

Differences in economic and social development between and within countries must not be overlooked when reflecting on the future. What is a reality for one country, town or person, may

not be an issue for another. Logically, therefore, drivers of change affect different places and people differently over time. However, it is not possible to avoid a global approach when addressing the future of work in view of the ever-increasing interconnectivity between all, including between people, institutions and communities.

In addition to the often discussed technological advances, the future of work and the way in which it relates to society is deeply affected by **demographic trends** and changes in the composition, organization and regulation of the workforce. There is a generational and cultural aspect to demographic issues. On the one hand, in some regions or nations, such as Africa and India, there is “a demographic dividend” with an expanding young population, which could reinvigorate the economy. In contrast, European and other high-income countries often have an ageing, and in many cases shrinking population. Moreover, although migration has always existed, there seems to be an exponential rise in large-scale movements of people. Nor should internal migration from rural to urban areas, particularly in poorer countries, be overlooked. All of these factors have a bearing on the supply and demand for labour and services, and call for different contextual, as well as global and regional solutions. For example, it was highlighted that demographic shifts may lead to increased demand for care or health services, or for greater investment in education for both young and older populations.

More specifically, it was argued that labour **migration** may have both positive and negative aspects. On the positive side, it results in increasing diversity in society and the workplace. It can meet the needs of employers for specific skills, or can fill low jobs that do not meet the demand in the domestic labour market (many times low-skills jobs). On the other hand, it may lead to a “race to the bottom” if migrants are willing to work under worse conditions, or may swell the numbers of people working in unacceptable forms of work and/or in the informal economy. Migration can also give rise to social tension and an increase in populism, as well as xenophobia and/or racism. It is the responsibility of governments to integrate this diversity, although the social partners also have a role to play in this respect. It was also recalled that a person’s place of birth will continue to have a huge impact on his or her future.

Moreover, there are **gender** dimensions to this issue. For example, in some countries, women have moved – and are increasingly moving - into paid employment, from unpaid care work. This results in demand for services (care services), which can be met by migrant workers. Questions were also raised on the effects that the digitalization of work will, and is already having on migration, as workers are increasingly able to obtain work through platforms (through their mobile phones, computers etc.) wherever they are located, which reduces in some cases the need to migrate (within or outside the country of origin) to find work.

Three main points of convergence

The rich diversity of the participants at the workshop (see Annex 1: List of participants) contributed to the inclusion and examination of a broad range of topics and views. Although there were many differences of perspective, three main points of convergence could be noted: (1) we should all

work; (2) the value of work is evolving and; (3) new social model(s) with the participation of all should be considered.

(1) We should all work

A key question concerning the interaction between work, society and the individual is whether or not we will work in the future, and how it will be decided who does or does not work. This key question also raises a number of other issues, including potential inequalities (or the deepening of existing inequalities) and power structures, which are of particular importance in view of the current fragmentation of work (short-term contracts, gig work, project-based work, etc.) and the imbalance of power between employers and workers. In the short to medium term (and also potentially in the longer term), this key question will also depend greatly on the context and level of development, as work can be a necessity, not a choice.

There was consensus that indeed we should all work, as by so doing we contribute to society. There is a fairness or egalitarian argument as to whether or not we should work, as well as a developmental argument for the individual and society. In addition, even if an individual's work does not contribute to society, it develops, sustains and advances the individual.

There are also strong cultural and psychological reasons for working, including making a contribution to society/the community, personal dignity and self-worth. The desire to work is part of the obligation to work. This raises the important distinction between work as a right and work as a duty. It should be noted, however, that no form or structure is acceptable which creates an obligation to work.

There should also be **exceptions** to the idea that everyone in society should work, for example for the elderly, children, the sick, people caring for others (which, even though it may be considered work, is often unpaid), students and those engaged in training. Even people who want to work sometimes need to drop out of the labour market temporarily for a variety of reasons, and should be able to re-enter the labour market at a later stage.

Although there are many fundamental reasons why people need to work, the problem increasingly lies in the fact that economies are not generating sufficient jobs. This is likely to be exacerbated by technological transformation. It was also argued that, in a world where jobs are becoming scarce, societies should “**share**” job opportunities with a fair distribution of what are considered to be “good” and “bad” jobs. Again, this raises the question of how to decide who does which jobs, both paid and unpaid. In this regard, it would also be important to rethink the notion of working time and to avoid the one-size-fits-all approach of a “typical” length of the working week (for example, with 40 hours being considered as full-time work).

Basic universal income as a possible alternative

The question was discussed of a basic universal income as a possible alternative (to work). Although this idea could partially address the probable challenge of fewer jobs and less work in societies, it seems unlikely that it will resolve all the related issues. An ethical dimension also arises of whether it is acceptable for everyone to be provided with a fixed sum of money at regular intervals on an unconditional basis.¹

The concept of a universal basic income also raises profound questions about personal freedoms and choices versus the needs of society. Even so, it is clear that there is a need to reform and modernize social protection systems, depending on the country, to adjust to the future challenges of the world of work. Any reforms should be based on the underlying principles of equality and inclusiveness.

It was highlighted that many of the issues regarding universal basic income are not necessarily relevant in **developing countries**, where most people need to work to survive, which is likely to continue to be the case for the foreseeable future.

In view of the increased levels of interactivity, global solutions are necessary. If this is linked to the idea of basic income, it could lead to the management (or governance) of basic income at the global level, with basic income being provided in some countries, but not others.

Tax systems are a key component as they are a tool for the redistribution of wealth. Further research and analysis is however required on taxation systems and models that can address both the challenges and opportunities in the world of work of the future. International relations between States as well as distributional issues are at the heart of the redistribution of resources from those that have them and to finding ways of sharing. This debate can therefore no longer be held entirely at the national level. Global phenomena require global solutions.

From manufacturing to services

Analyses of the future of work and society, in particular with regard to the structure of production, are based on industrial or manufacturing models of production. But this needs to be adjusted in view of the current and future growth of employment in services.

New technological developments and the so-called 24/7 society, in which services are increasingly demanded instantaneously, may have consequences for wealth distribution, working time and health issues. Discussion of this raised a number of questions: (i) If we assume increased productivity with new technologies, is distribution of wealth happening? (ii) Can distribution also cover hours of work? This needs to be discussed in all countries, within and between countries,

¹ Studies have been carried out in Germany where, if everyone received 1,000 euros a month (equivalent to 31.4 per cent of GDP), this would still not be sufficient to cover unforeseen additional costs (such as illness and accidents).

and between generations. (iii) Another element that can be observed, but which is likely to grow in severity unless tackled is the relation between work and health (particularly mental health) and its impact on societies. Unless adequately addressed, it seems likely that these consequences will be exacerbated. There is also a tendency to believe that the future holds an eminent decrease in the proportion of permanent employment contracts, which would have an impact on stress levels, as short-term “project-based” tasks and jobs would increase precariousness. Research has shown that most workers with non-fixed contracts still seek the security of a permanent contract.

With new technologies, the responsibilities of employers have shifted towards the broader responsibilities of society and public institutions. The **sharing of responsibility** has both risks and benefits. It could mean that workers do not know who their employer is (it could be an algorithm!), but could also result in greater participation by individuals as both workers and citizens.

Another aspect of this issue is the **informal economy**, which is the reality for many, but is not usually taken into consideration for the purposes of social protection, freedom of association and collective bargaining.²

(2) Changing values and definitions of work

Many of these issues have their roots in the understandings, values and meanings given to work, the individual and society. Values are often contextual and based on the norms of a specific society. However, it was observed that such norms may change over time. A society without work would require fundamental changes in societal norms.

Although strong cultural and psychological norms push most people to work (as well as reasons of survival for the majority of the world’s population), it can be argued that what human beings need ultimately is to engage in **meaningful “life projects”**. These do not necessarily have to be linked to work (paid or unpaid), as it is commonly defined. The meaning of work is also to a great extent subjective, as work may be a matter of life and death to one person, but may be a lifestyle choice for another. It was agreed that the **definition of work needs to be flexible in this respect** so that it is not only linked to the workplace. Although many seem to believe that work is confined to the workplace, it needs to be recalled that care and household work, etc., are also work.

How should work therefore be **defined**? There are arguments for and against definitions of work, or at least definitions that are more or less narrow. If the definition is too specific (for example, only paid work is considered to be “real” work), it may be detrimental to the world of work and to individuals who do not fit into such narrow definitions. But, similarly, broad definitions also run the risk of making labour market regulation and policies extremely challenging. How work is defined has far-reaching repercussions on other social policies, and accordingly on society in general. For example, if work is defined narrowly in terms of wage labour, those who work “outside the definition”

² Regulatory approaches are possible and necessary for informal workers. The case of Chile was cited, where informal work is included in the labour legislation to ensure workers’ rights, including trade union representation.

could be excluded from social protection. One fundamental aspect that was highlighted is that, whenever work creates **value** (including in the gig economy, task work or platform work), it should be considered as work and duly regulated. In terms of the value of work, it is clear that unpaid work is not valued as highly as paid work, even though its intrinsic value may be high (for example, unpaid care work). It is also important to bear in mind that value is also, consciously or unconsciously, attributed to individuals based on their job.

(3) New social model(s) with the participation of all

When looking to the future, it is important to avoid linear views of development and progress. The fact that our world is extreme in dystopias, and that there is a risk that this aggravates over time, should also not be overlooked. It was argued that, if the current model persists, in which markets and economic growth are the primary concerns, existing problems will worsen, particularly as the current development path is inherently regressive. The current model is arguably in crisis, and market forces are not equipped to resolve the inherent imbalances. Although legislation can help to find solutions, the moral or ethical considerations involved require cultural or normative changes. It was argued that **new models** need to be found that will address these underlying issues. In view of the increasing frequency and depth of political, economic and social crises globally, it may even be that new forms of “moral codes” are needed to address these multidimensional issues from a different perspective.

The advent of new technologies is leading to increased diversity, both in the world of work (for workers and employers) and in modes of consumption and production. At the same time, new technologies may be concentrating the benefits of work in the hands of fewer people. This may not necessarily seem problematic from a strictly economic perspective, but there is a moral element involved which means that new solutions need to be based on moral “codes”. This is creating new challenges for the regulation of the world of work. Such diversity can be beneficial (for example, in the form of new flexible ways of working and combining family and professional responsibilities), but needs to be managed effectively in order to avoid an increase in precarious low quality or dangerous jobs, and increased inequality. Further research is also needed to determine how organizations, and particularly enterprises, can address discrimination and facilitate integration. National laws as well as international labour standards have a role to play in this respect, as do the social partners.

It is important that, when researchers and policy-makers look to the future, they do not ignore the current process of transformation. Indeed, it is crucial to plan and prepare as much as possible for this transformation, which will structure the future of work and society. The objective is to move away from a dystopian world characterized by highly productive societies/sectors with highly skilled and paid workers alongside societies (as well as sectors) characterized by the prevalence of low incomes and inequality.

There was a strong feeling, particularly among participants from the south (especially former colonized countries) that there needs to be a redistribution of wealth that also includes the benefits of technological change. In other words, it is time to “pay back centuries of inequality”.

The quest for increased participation

The idea was rejected that we are passive bystanders in the face of technological changes that affect the world of work. Future societies are likely to be increasingly interconnected, and there is a need for engaged citizens to participate more fully in civic life to help develop more sustainable, equitable and inclusive policies, and the respective implementation strategies.

New technologies may offer an opportunity to change governance systems and structures to allow individuals to be represented through a more direct form of democracy. Underlying issues, such as inequality and exclusion in the world of work, now and in future, could be addressed (at least partially) through greater voice for workers and individuals. At the same time, in many countries, political parties are struggling to engage citizens, who appear to be increasingly disillusioned.

The discussion also considered how **social dialogue** could be revisited to make it more inclusive, for example by including academia, as well as people in general. This also raises issues for ILO constituents, as their traditional roles (particularly in the case of workers' and employers' organizations) are being transformed.

Education systems are also key to increasing the **participation of citizens** in debate (and ultimately action) for the creation of more inclusive and equal societies. It was argued in this regard that current education systems focus on producing workers, rather than citizens. Education systems could contribute to facilitating entry into the labour market, so that skills and knowledge meet the emerging needs of employers, especially for the young in view of the high rates of youth unemployment, and of young working poor, particularly in developing countries. They could also help to integrate migrants into society, provide lifelong learning for people of all ages and help in retraining workers during labour market transitions caused by disruptive technological change.

Ultimately, it is important to ensure that **the human being is at the centre** of the society of the future, and that the world of work contributes to this aim. Participatory approaches are crucial to achieving this. The many cultural and normative/value issues running through these debates argue for contextual solutions. However, there are also current global trends that require some type of global framework, including international norms and standards, particularly in an ever more technological world in which national borders are easily circumvented.

Annex 1: List of Participants

Name	Organization	Field of Expertise
Uma Rani Amara	Senior Economist, RESEARCH, ILO	Development economics, informal employment
Anita Amorim	Head of the Emerging and Partnerships Unit, ILO	Technical cooperation and development programs
Urvashi Aneja	Director, Tandem Research, India	Governance and sociology of emerging technologies
Bjorn Serritzlev Bedsted	Deputy Director, Danish Board of Technology Foundation	Social anthropology, ST and innovation
Janine Marie Berg	Senior Economist, INWORK, ILO	Employment and labour market institutions
David Blustein	Professor, Boston College, USA	Counselling psychology
Gerhard Wolfgang Bosch	Senior Professor, University Duisburg-Essen, Germany	Economics and sociology
Magdalena Maria Claro Tagle	Assistant Professor, Pontifical Catholic University of Chile	Sociologist, digital technologies in education
Enrique Modesto De La Garza Toledo	Professor, Metropolitan Autonomous University of Mexico. (UNAM)	Sociology
Susan Hayter	Senior Specialist, INWORK, ILO	Labour relations
Kjeld Aagaard Jakobsen	Trade Union Confederation of the Americas	International relations
Rie Vejs Kjeldgaard	Director of PARDEV, ILO	Technical cooperation and development programs
Qiannan Li	Junior Professional Officer, Future of Work Unit, ILO	Technical cooperation
Pierre Jean-Marie Benoit Martinot-Lagarde	Special Advisor, ESPU, ILO	Technical cooperation and development programs
Prabhu Prasad Mohapatra	Associate Professor, University of Delhi, India	Historian
Morné Mostert	Director, Institute for Futures Research, Stellenbosch University, South Africa	Management of technology and innovation
Susan Piazza	Future of Work Unit, ILO	Assistant
Maria Prieto	Specialist, Future of Work Unit, ILO	Youth employment and development policies
Tatiana Razumova	Professor, Moscow State Lomonosov University; Russian Federation	Labour and personnel economics
Lynn Marie Roseberry	Co-founder & Managing Director, On the Agenda Aps, Denmark	Employment, gender equality
Xiuyin Shi	Professor, Academy of Social Sciences, China	Labour relations
Daniel John Smith	Programming and Liaison Officer, ILO in charge of the minutes during the Workshop	International relations and development studies

Michael Franz Schoenstein	Deputy Head, Federal Ministry of Labour and Social Affairs, Germany	Skilled labour supply policies
Roberto Suarez Santos	Deputy Secretary General, International Organization of Employers	International labour law and labour relations
Pietro Terna	Retired Professor, University of Torino, Italy	Econophysics
Maria-Marta Travieso	Specialist, Future of Work Unit, ILO	International labour standards, labour relations, equality
Imraan Abdul Kader Valodia	Dean, University of Witswatersrand, Johannesburg, South Africa	Employment and industrial development
Maria Luz Vega	Coordinator, Future of Work Unit, ILO	Labour law, labour administration and labour inspection

Annex 2: Links to visuals

<https://vimeo.com/239465249> Password: ilo

<https://drive.google.com/drive/folders/0B8jPTFM023dpWUs2anFtcmlyd1U?usp=sharing>

Annex 3: Articles submitted for the meeting

All participants were invited to provide a note or an article on their research or their ideas concerning the future of work and how they linked to their domain of expertise. Participants coming from the south, were also invited to provide an insight of what they considered substantive from the point of view of south-south triangular cooperation. The following are the notes and articles provided by participants.

Ingredients for a new social model

How to include workers in a social dialogue about future solutions

Bjørn Bedsted, deputy director of the Danish Board of Technology

This one-pager argues for the introduction of citizen (or worker) participation in the elaboration of future policies for the governance and organization of work. Stakeholder organizations (such as labor unions and employers' organizations) have been successfully included in such social dialogues for several years, but mechanisms for the direct inclusion of workers themselves have not been equally well established.

There are several reasons why it would be a good idea to include and consult workers more directly: it is democratically fair to do so; it gives workers greater ownership to policies and solutions implemented; and it leads to more socially robust and innovative results. These are standard reasons and arguments for citizen participation, and there is no reason why they shouldn't apply to the future Work and Society as well. One additional reason for doing so is the increasing reluctance among workers in some societies to have their interests represented by professional membership organizations. This is not, I suspect, just a matter of workers being unaware of the benefits and collective strength such organization offers, but also a desire and expectation to be heard and included as individuals.

Successful citizen participation depends on the democratic opening up of governance processes by those with the power to make decisions. It should not be mistaken with direct democracy: when offered to participate, citizens understand that the decision is not necessarily theirs to make, but they also lose trust and interest if they don't have any real influence on the decisions they are consulted about. Thus, successful citizen participation firstly depends on the sincere willingness of decision makers to include citizens in a decision making process.

Secondly, successful citizen participation depends on methodological know how. The good news is that a multitude of tested and well-functioning methods exist. It is only the will and ability to use them that is needed. Some methods are better suited for early exploration of challenges. Others work well when challenges have already been identified and alternative solutions are debated. These are a few examples of citizen participation methods developed by the Danish Board of Technology:

- CIMULACT: A method for engaging European citizens in redefining the European Research and Innovation agenda in order to make it more relevant and accountable to society. Citizen panels in different European countries have developed wishes and visions for the kind of future they would like see, and experts and stakeholders have helped translate them into new research topics and agendas that are in the process of being implemented in the EU's research framework program, Horizon2020 (<http://www.cimulact.eu/>).
- The Consensus Conference: A group of citizens deliberates on a technological development (such as Industry 4.0), debates it with experts and stakeholders, and presents their recommendations for

how to deal with that development at a conference in the national parliament. This method has been used in 20+ countries (<http://www.loka.org/trackingconsensus.html>).

- World Wide Views: A method for multisite, global citizen consultations (the only existing method so far). Has been used thrice, lately in collaboration with the UNFCCC and the French Government in the lead-up to COP21 in Paris. 10,000 citizens in 76 countries were engaged in structured and informed deliberations about policy issues negotiated for the Paris Agreement (www.wwview.org).

Psychology and the International Labor Organization:

The Role of Psychology in the Decent Work Agenda

Submitted, April 8, 2017, revised June 27, 2017

Prof. David Blustein, Boston College, Boston, United States of America

Prof. Jonas Masdonati, University of Lausanne, Lausanne, Switzerland

Prof. Jérôme Rossier, University of Lausanne, Lausanne, Switzerland

This text was reviewed and includes the remarks made by our following colleagues:

Prof. Nancy Arthur, University of Calgary, Calgary, Canada

Prof. Anuradha J. Bakshi, University of Mumbai, Mumbai, India

Prof. Geneviève Fournier, Laval University, Quebec-city, Canada

Prof. Rachel Gali Cinamon, University of Tel Aviv, Tel Aviv, Israel

Prof. Jean Guichard, Conservatoire National des Arts et Métiers, Paris, France

Prof. Maureen E. Kenny, Boston College, Boston, United States of America

Prof. Peter McIlveen, University of Southern Queensland, Toowoomba, Australia

Dr. Issa A. Moumoula, University of Koudougou, Koudougou, Burkina Faso

Prof. Marcelo Afonso Ribeiro, Universidade de São Paulo, São Paulo, Brazil

Prof. Guðbjörg Vilhjálmsdóttir, University of Iceland, Reykjavík, Iceland

Prof. Mark B. Watson, Nelson Mandela Metropolitan University, Port Elizabeth, South Africa

Note. We also very much appreciate the editorial input of Dr. Alice Connors-Kellgren, who graciously reviewed the final version of this report. Correspondence concerning this report can be addressed to David Blustein (David.Blustein@bc.edu), Jonas Masdonati (jonas.masdonati@unil.ch), or Jérôme Rossier (jerome.rossier@unil.ch). The contribution of Jérôme Rossier was partly made within the framework of the Swiss National Centre of Competence in Research LIVES – Overcoming vulnerability: Life course perspectives (grant number: 51NF40-160590).

The initial development of both the International Labor Organisation (ILO) and the psychological study of working can be traced to a period nearly a century ago when the labor market was in the throes of major changes. Now that many regions of the world are once again facing dramatic and far-reaching transformations in the world of work, we believe that it is important to connect the ILO and the psychological study of work and careers to maximize efforts to enhance the quality, availability, and security of work for all citizens across the globe. In this brief paper, we discuss some of the ways that psychology can inform the ILO mission.

SECTION 1: PSYCHOLOGICAL STUDY OF WORK AND CAREER

Over a century ago, psychologists moved from the laboratory and consulting office to the world of work and careers. Two specific specialties have emerged that focus intensively on the nature of work in the lives of individuals and organizations.

- One perspective, now known as vocational psychology, has concentrated on the experiences of individuals as they plan for and adjust to the challenges of developing a stable and meaningful work life. Vocational psychology has informed the training and knowledge base of career counselors, school counselors, and psychologists who are interested in helping people navigate the many transitions of contemporary life. Increasingly, vocational psychologists are examining the role of human rights, and social identities (rooted in race, social class, ability, sexual orientation, migration, region, and their intersections) in relation to individuals' access and adjustment to work. Vocational psychologists are also exploring how individuals are influenced by conditions within the workplace and emerging from the social and economic network of resources and barriers that support or inhibit access to decent work. This increased focus on the context, broadly conceived, clearly links vocational psychology to the ILO agenda and to related initiatives that have been advanced in the UN Sustainable Development Goals.
- Another perspective, known as work psychology or Industrial-Organizational (I-O) Psychology, has focused on understanding how organizations and employers can use psychology to enhance the quality of their workforces, leadership, personnel selection, training, and related challenges within the workplace. I-O psychology has provided the knowledge base to enrich the work of organizational psychologists, human resource professionals, and others who are focused on developing a vibrant, productive, and effective work environment. Other psychologists from such fields as social, counseling, clinical, and health psychology also have focused on occupational health issues, mental health problems at the workplace, and other issues that are reflected in the Decent Work Agenda that the ILO has advanced.

When considered collectively, the various psychological examinations of work have identified a number of compelling research findings and initiatives that are relevant to the ILO's mission. In the brief review that follows, we summarize some of the major findings that psychologists have contributed to promoting the health and well-being of individuals, organizations, and communities.

- Having access to decent work (using the Decent Work Agenda as a guide) has been associated with individual and family well-being, and thriving communities. In short, people do better in life when they are working. A stable and secure job provides people with the capacity to survive financially, connect meaningfully to others, and to determine the course of their futures. Moreover, access to

stable and dignified work provides people with a powerful means of cohering their own identities, which we explore in fuller depth later in this paper.

- The flip side of the connection between work and well-being is reflected in a very rich literature on unemployment and mental health. Losing a job and/or not being able to obtain access to the labor market is causally linked to the development of mental health problems and increases in family violence. A summary of research findings on unemployment and mental health reveals that the best way to resolve the psychological problems that occur when someone is out of work is to have them obtain a new job that is decent, dignified, and stable.
- The growing prevalence of precarious work is clearly associated with mental health and physical health problems, as described by the Organisation for Economic Co-operation and Development (OECD) and considerable research in psychology. Precarious work is characterized by a lack of explicit or implicit long-term trajectory, inadequate benefits, and deficient opportunities for skill development that might lead to sustainable and meaningful work. Precarious work is often manifested in underemployment, short-term and part-time contracts, or work in the informal economy.
- While work within the traditional labor market has become more precarious, the informal economy is becoming increasingly important for many people, especially those living in the Global South and other less industrialized regions of the world. In some regions of the world, the informal economy can represent up to 80% of the jobs and may be considered as a positive and productive option for meaningful work within some communities. Psychologists have been examining the impact of cultural beliefs, the level of support within one's relational networks, and other structural factors in shaping the nature of work in the informal economy.
- Psychologists have also been exploring the aversive impact of child labor, which remains a major obstacle in achieving the Decent Work Agenda and in promoting decent lives globally.
- Another relevant line of research is on the relationship between caregiving work and market place work. Psychological scholarship is contributing to the understanding of how gendered roles continue to result in unfair work burdens for women, who are often subordinated to caregiving work while also being compelled to work in the marketplace.
- Under certain conditions, work provides considerable opportunities for satisfaction and meaning. Extensive research has demonstrated that decent work is associated with greater resilience in other domains of life and with an enhanced level of health and well-being.

In short, a psychological perspective allows for a better understanding of the relationship between the socio-economic context, diverse work and life conditions, and the overall level of health and well-being of individuals and the stability of communities.

New Developments in the Psychological Study of Work

During the past few decades, the psychological study of work has identified the intersection of social identities within various aspects of the career development process. The impact of racism, sexism, and classism, along with other forms of marginalization and oppression has been identified as a critical barrier for people seeking stable and decent work. Psychologists have been able to identify how discrimination, harassment, stigma, and micro-aggressions impact on people's capacity to develop and sustain work lives of meaning and purpose.

Similarly, gender continues to play a major role in people's experiences at work, as reflected in many of the ILO's reports. Across the world, major disparities exist with respect to the access that girls have to basic education, training, and post-secondary education. Within psychology, we have been able to identify how gender role socialization impacts the ways in which people consider their options in the workplace. For example, girls and boys are able to identify career options that are "appropriate" for their gender by the time they are in pre-school. The gender-role socialization process affects not just the external attributes of the workforce (such as gender pay gaps, differential representation of men and women in occupational sectors, and distribution of household labor), but also impacts powerfully on individuals' internal aspirations, beliefs, and identities about work.

Other marginalized social identities, such as non-dominant sexual orientations, ability/disability status, and religion all intersect with each other and with other aspects of our identities to influence both individuals' beliefs about themselves and the existence of external barriers in the labor market.

Psychologists have been able to identify how oppression and marginalization affect people's identities and their access to opportunities. Building on these movements that are identifying the resources and barriers that frame the career development process, psychologists have now developed new initiatives to promote their growing focus on human rights and justice in the workplace. One of the most notable exemplars of this new focus is in the UNESCO Chair of Lifelong Guidance and Counselling, which has explicitly connected vocational psychology to many of the tenets of the ILO and UN, including the Decent Work Agenda and the Sustainable Development Goals. Other initiatives that are exploring the shared space between social justice agendas, public policy, and the psychological study of working have been developed in various parts of the globe, with promising new ideas and programs emerging from these collaborations.

Within the world of theory and research, two new developments, one coming from vocational psychology and the other from I-O psychology, are reshaping discourses in psychology about working.

Within vocational psychology, the psychology of working movement has created an interdisciplinary approach to understanding the nature of work by articulating the impact of social and economic factors in the development of both internal and external resources that promote well-being and work fulfillment. In a similar vein, the humanitarian work psychology movement has sought to apply principles and research from I-O psychology to developing nations and impoverished communities with the intention of enhancing opportunities for decent work. Both of these new perspectives share many of the same values and mission as the ILO; for example, the concept of decent work, which is central in both the psychology of working perspective and humanitarian work psychology, provides an explicit connection among these two fields and the ILO.

SECTION 2: IDENTITY AND WORK

The analysis of the influences of the experience of work on how people define themselves is an exemplar of how the psychological study of working can enrich our understanding of the impact of work in people's lives. Working is actually considered not only a productive activity but also as a psychological, symbolic, relational, and social space. At the workplace, for example, people potentially and ideally have the

possibility to express themselves and their personality, to learn and grow, to identify and interact with others within a social group, and to find meaning and purpose in their lives. A psychological approach to the act of working as a psychosocial phenomenon is then pertinent to understanding what links people to work beyond the prescribed tasks they are paid for. Identity and identity development are therefore considered as a core psychosocial dimension affected by the experience of working.

Identity Tensions

Identity consists of the answer people give to the question “Who Are You?” In this question, the “You” reflects both an individual and a group identity resulting from the combination and articulation of personal and social facets. *Personal identity* is the definition that a person gives of himself or herself throughout different, sometimes disparate life experiences and roles; this might lead to the feeling that one is the same person at home (e.g. as a husband or wife, as a parent), at work (e.g. as a colleague or as a professional), as well as in leisure activities (as a friend or as a hobbyist). The question of identity also implies the dimension of time and the search for continuity between the past, present experiences, and self-projections in the future. Personal identity processes underlie a double tension: the challenges of balancing *sameness* and *difference* throughout life experiences and *continuity* and *change* over time.

Social identity refers to how people define themselves in relation to the social groups to which they belong, as well as to those they do not belong. Life experiences are never isolated from the social sphere and every role a person is engaged in involves being part of something bigger than the individual. For example, the transition to parenthood not only consists of preparing to take care of a child and changing the concrete organization of one’s life, but also in integrating a new social role and being socially represented as parent or caregiver. Social identity processes entail, then, another tension that people must cope with, namely between the feeling of *belonging* to a social group that is more or less socially and personally valued and the search for *uniqueness*. For example, a soccer goalkeeper might both feel a sense of belonging to a team—and of being more or less proud to belong to it—and struggle to be defined as a goalkeeper with unique characteristics.

Because people always occupy parallel roles, the general identity of an individual, also known as self-concept, is the result of the combination and articulation of the *multiple identities* constructed in each of these roles. The global definition I have of myself results from my multiple roles as a family member, as a leisure person, as a partner, as a worker, and as a friend. These multiple identities are systemically embedded and the general self-concept depends on the relative importance people attach to each social role they are engaged in. For example, a student having academic difficulties might preserve a strong general identity thanks to popularity among friends and skills at sport, if sports and social relationships are more central in life than academic achievement.

Identities are not only multiple but also constantly *in construction*. People are in a constant process of rethinking and redefining their identities by considering and conciliating their environment, who they want to be, and their understanding of who they are. Identities evolve according to people’s development and life course, as well as in relation to their life experiences and social interactions.

Currently, this continuous identity development is crucial because social structures (e.g. family, work, and leisure) are changing faster than ever and are a less stable external point of reference for identifications and identity construction. For example, family structures are taking multiple new forms, and family roles are less predictable and stable, pushing people to constantly adjust their definitions of their own roles within the family. The increase in social mobility also forces people to frequently reinvent themselves in relation to others, in effect redefining themselves each time they integrate a new life context or culture (e.g., building new relationships). Given the multidimensional and evolving nature of identity processes, people also must cope with an *integration-fragmentation* challenge, which is another form of identity tension. This dimension of the identity process involves having an integrative posture on one pole when people are able to harmonize their different social roles; the other pole is characterized by fragmentation, which occurs when people split their social roles in an effort to protect their general self-concept from identity threats coming from a given life sphere.

Identity and Work

Like other postmodern social structures, post-industrial labor markets are characterized by frequent and rapid change, increasingly complex transitions, and unpredictability. As a result, the work sphere is less capable of offering people stable external and stable points of reference for the construction of their identities. For example, a decreasing number of workers can identify as being part of an organization, knowing that they probably will want or have to change employers or being unsure that the current organization will even exist in the long term. Because people have to cope with diverse sources of identity tensions throughout multiple, and often fragmented, marginalizing experiences on the labor market, identity work—that is people’s efforts to (re)form, maintain, or repair their identities—is currently intensive and psychologically demanding. As such, we understand and analyze identities at work focusing on the notion of *subjective career*, which reflects how people define themselves at work and as workers according to their perceptions of continuity through or despite constant change.

Despite the rapid evolution of the structural configuration of the labor market due to globalization, work is considered in many cultural contexts (although not all) as one of the most *central life spheres* for identity construction. Work is seen, among other functions, as allowing and promoting social recognition and social mobility. When a person is not engaged in remunerative work, she or he generally tries to find a defensible explanation or justification of the reasons why he or she does not work (such as “I am in a transition phase” or “I’m running a business” for people working in the informal economy). Naturally, considerable variability exists in the extent to which cultures value remunerative work, with some cultural contexts providing people with diverse alternatives for meaningful and rich lives outside of the market place, such as caregiving work, volunteer experiences, and other community-based activities.

What happens at work strongly influences people’s lives outside of work, and vice-versa. Accordingly, one’s identity at work is recognized to have important impacts on one’s general self-concept. Moreover, the growing appreciation of the myriad ways in which people find meaning in their lives (which may or may not occur through remunerative work) is creating a multi-faceted understanding of the importance of work in the development of identity.

Given the focus of this paper on the ILO's Decent Work Agenda, we return to the concept of identity at work by exploring the question "Who Are You... and Who Are You Not... at Work?" which generally covers two dimensions: work identity and occupational identity. *Work identity* concerns the statutory aspect of work, regardless of what you do, in your job. It is constructed in contrast to people who do not work, such as students or unemployed people, and depends on how individuals identify with, value, or attach meaning to their role as a worker. *Occupational identity* concerns the vocational aspect of work and consists of the answer to the question "Who Are You... and Who Are You Not... as a professional," that is, as a worker in a specific occupation. People define themselves at work according to the characteristics and social representation of the trade or the job they do, and to what this job evokes for them (e.g., in terms of prestige or gender stereotypes). Their occupational role identification might then be more or less strong and assumed. For example, people who do jobs that are socially or morally less valued (low skilled jobs in some contexts or working in the informal sector in other contexts) often have to develop arguments—for themselves and society—to preserve a positive identity at work.

Identity Threats in the Work Sphere

Considering identity at work as the combination of *work* and *occupational* identities stresses that identity at work depends both on the opportunity to work—which contrasts workers vs. unemployed people—and on the quality of the work experience—which contrasts decent vs. indecent working contexts. Decent and sustainable work provides clear answers to the "Who Are You at Work?" question, for both work identity and occupational identity. Moreover, decent, purposeful, and meaningful work contributes to positive identity development. For example, being proud and happy to practice a given profession will contribute to people's hope for the future that will, in turn, have an impact on their well-being. On the other hand, however, identity construction at work is threatened for two groups of people: unemployed people or those engaged in chronically precarious work and workers doing "indecent" work.

The first identity threat concerns people living in marginalized contexts, that is *people permanently or recurrently excluded from the work sphere*, particularly when exclusion is not a choice and is unpredictable. Their answer to the "Who Are You at Work?" question is, "Nobody," which indicates that their work identity cannot be constructed because the work sphere is "empty." Their identity construction within their work role is impossible or, at best, unsteady. Unemployed people or those engaged in chronically precarious work do not have access to the status of "worker," which may be stigmatizing. Additionally, given the centrality of the work sphere for individuals' construction of their general identities across many regions of the globe, the lack of a work identity tends to spread to other life spheres—family, social relationships—which threatens their general self-concepts. For example, psychologists have demonstrated that long-term unemployed people have a higher risk of developing chronic illness, addictions, mental health problems, and experiencing social isolation.

Having a job or an occupation is a necessary condition for developing a positive identity at work, but it is not sufficient. The second identity threat concerns *people who work without access to decent work*. Although they might be able to construct a work identity (i.e., they identify themselves as workers and endorse the worker status and role), their occupational identity might be affected. Workers doing

“indecent” work answer the “Who Are You at Work?” question with “Someone I do not value” or basically “I do not know.” This scenario is less documented in research and deserves more attention, particularly in socioeconomic contexts that tend to marginalize substantial communities of adults who are seeking work. Identity at work depends on the personal and social meaning and purpose people attach to work and, consequently, on the degree of meaningfulness of the job they are currently engaged in. “Indecent” work is often associated with a negative meaning because it does not provide the psychological purpose workers expect from it in that it does not fulfill values and functions people ideally attach to work. When work is not decent, the resulting experience threatens the identity dimensions of continuity and belonging; in this context, people often struggle with constructing future plans on the basis of their current and past experiences and often feel disconnected from others and the broader social fabric. Like unemployment, it might also have negative impacts on identity building processes in other life spheres and on general self-concept, which leads to fragmentation of a person’s life spheres.

To recap, professional difficulties, unemployment, poverty, and precarious work have an impact on people’s identity construction at work and on their general self-concept. In turn, these conditions have an impact on their mental health. They also affect their ability to position themselves in the labor market in order to get decent jobs and, thus, to have access to decent lives. This negative spiral keeps people in chronic situations in which the levels of distress are also chronic. This may be especially the case in emerging countries where contextual resources are scarce. If jobs and decent jobs are not accessible to people, identity at work might be replaced by an identity associated with some non-market-place activities. And even when people can access work, the quality of it might not be decent and working may not fulfil the psychosocial needs people expect from it. The question that we can raise here is: what is the cost of these changes in the work force on the welfare of people and communities? Ensuring survival, of course, is central in our lives, but the loss of meaning, purpose, and identity can have devastating impacts around the globe (e.g., the rates of depressions or family violence are empirically linked with this problem). Psychology can help to answer these questions and perhaps develop optimal solutions as work becomes more precarious, especially for those without 21st century skills. In this context, and given the central role of work in the formation of personal and social identities, we claim that decent work should be considered as a core human right.

Identity as a Resource

An analysis of the relationship between identity and work is central not only to identifying the threats of unemployment and “indecent” work and to prevent or limit these risk situations; it also leads to the understanding of positive career paths that can generate interventions aimed at fostering successful professional trajectories. When working has positive meaning, workers are able to link the work sphere with their general self-definition. The congruence between professional activities (what people do at work), the values associated with these activities (what they consider useful and important to do at work), and identity (the definition of self at work) can promote and sustain work engagement and work satisfaction, which, in turn, fosters productivity and health at work and elsewhere. Moreover, when professional activities are in line with individuals’ expectations (in terms of content or benefits), these activities contribute positively to individual identity. This identity gives meaning to one’s work, which promotes not

only work engagement and health at work, but also overall well-being. This causal sequence is, however, moderated by contextual and systemic factors, such as the ebb and flow of the labor market, the welfare system, political decisions, and different degrees of marginalization according to people's ascribed social identities (e.g., gender, ethnicity, sexual orientation, etc.).

When people accumulate several jobs or have occupational paths with a succession of disparate jobs, finding meaning and subjective coherence in these different work experiences is crucial, yet very challenging. In this case, work identity functions as a meta-cognitive skill that helps to organize these different experiences in a coherent and meaningful overall structured representation. This representation fosters meaning both for realities occurring in different social spaces and at different times by structuring events coherently as they occur in different contexts (at work, in family, etc.) and at different moments in one's life. This socially defined self-representation also includes expectations concerning the interactions between people and their social, cultural, and economic environment. The prospective component of this self-representation demonstrates that it may contribute to helping people guide themselves in their interactions with their environment and may help them to cope with constraints. This identity may help people to activate and allocate their resources or to seek support in order to achieve their goals. Taking into account people's identities provides a better understanding of the link between access to and the sustainability of decent work, which largely depends on both external working conditions and internal well-being, which is characterized by subjectivity.

The idea that identity can function as a meta-cognitive competency and contribute to the organization of people's self-representations implies that identity also contributes to self-directedness. In this context, identity helps people to manage their professional paths and life courses and contribute to their overall well-being. Helping people to develop their meta-cognitive competencies and helping them to develop and structure their work and overall identities will contribute to helping them to self-direct their life course and improve their ability to have access to decent jobs and work, if the context offers such conditions. For this reason, action at the individual level, taking into account psychological aspects, must be complemented by action on the social, economic and political levels.

CLOSING THOUGHTS

Vocational and I-O psychology have been concerned for many years with challenges that are also central in the Decent Work Agenda. If precarious work is known for being associated with mental and physical health problems, it has also been demonstrated that access to decent work promotes overall well-being at work and in other life domains as well. Vocational and I-O psychology can contribute to describing the relationship between the socio-economic context, work and life conditions, and well-being at a social and individual level. Promoting access to decent and sustainable work implies also promoting social justice and fighting against social inequalities. However, decent work should not only be described in terms of objective work conditions, but also in relation to subjective career perceptions. Indeed, access to a decent work is also a form of social recognition that sustains people's positive identity development. This development in turn contributes to people's ability to cope with new life contexts or cultures.

This report reflects input from its three authors as well as a number of colleagues from varied regions of the world, who have helped to ensure that our contribution is as meaningful as possible across diverse nations and regions. We believe that the time is urgent for more intentional and systematic collaboration among labor economists, policy analysts, government officials, and psychologists interested in work and careers, so that we can ensure that the full range of experiences of people and communities are considered carefully as our world adjusts to a rapidly shifting work climate.

References

- Arthur, N. (2014). Social justice and career guidance in the age of talent. *International Journal for Educational and Vocational Guidance*, 14, 47-60. doi:10.1007/s10775-013-9255-x
- Arulmani, G., Bakshi, A. J., Leong, T. L., & Watts, A. G. (Eds.). (2014). *Handbook of career development: International perspectives*. New York, NY: Springer. doi:10.1007/978-1-4614-9460-7.
- Bakshi, A. J. (2017). Child career development in developing world contexts. In M. McMahon & M. Watson (Eds.), *Career exploration and development in childhood: Perspectives from theory, practice and research* (pp. 114-126). Abingdon, Oxon: Routledge
- Blustein, D.L. (Ed.). (2013). *The Oxford Handbook of the psychology of working*. New-York, NY: Oxford University Press.
- Blustein, D. L., Kozan, S., Connors-Kellgren, A., & Rand, B. (2015). Social class and career intervention. In P. Hartung, M.L. Savickas, & W. B. Walsh (Eds.), *The APA handbook of career intervention, Volume 1: Foundations* (pp. 243-257). Washington, DC: APA.
- Carr, S. C., MacLachlan, M., & Furnham, A. (Eds.). (2012). *Humanitarian work psychology*. New York, NY: Palgrave Macmillan. doi:10.1057/9781137015228
- Crettaz, E., & Bonoli, G. (2011). Worlds of working poverty: National variations in mechanisms.
- N. Fraser, R. Gutiérrez, & R. Peña-Casas (Eds.), *Working poverty in Europe* (pp. 46-69). Hampshire, UK: Palgrave Macmillan UK.
- Di Fabio, A. & Maree, J.G. (2016). Using a transdisciplinary interpretive lens to broaden reflections on alleviating poverty and promoting decent work. *Frontiers in Psychology*, 7, 503. doi:10.3389/fpsyg.2016.00503
- Duffy, R. D., Blustein, D. L., Diemer, M. A., & Autin, K. L. (2016). The Psychology of Working Theory. *Journal of Counseling Psychology*, 63, 127-148. doi:10.1037/cou0000140

Fouad, N. A. (2007). Work and vocational psychology: Theory, research, and applications. *Annual Review of Psychology*, 58, 543-564. doi:10.1146/annurev.psych.58.110405.085713

Guichard, J. (2009). Self-constructing. *Journal of Vocational Behavior*, 75, 251-258.

doi:10.1016/j.jvb.2009.03.004

Guichard, J., Drabik-Podgórna, V., & Podgórný, M. (2016). *Counseling and dialogue for sustainable human development*. Torun Poland: Wydawnictwo Adam Marszałek.

International Labor Organization. (2008). ILO declaration on social justice for a fair globalization. Retrieved from: http://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/genericdocument/wcms_371208.pdf.

Lent, R. W., & Brown, S. D. (2013). Social cognitive model of career self-management: Toward a unifying view of adaptive career behavior across the life span. *Journal of Counseling Psychology*, 60, 557-568. doi:10.1037/a0033446

Masdonati, J., Bangali, M., & Cournoyer, L. (Eds.) (2016). *Éducation et vie au travail: Perspectives contemporaines sur les parcours et l'orientation des jeunes*. [Education and life at work : Contemporary perspectives on youths' professional and vocational paths]. Quebec-city, Canada: Presses de l'Université Laval.

Masdonati, J., & Fournier, G. (2015). Life design, young adults, and the school-to-work transition. In L. Nota & J. Rossier (Eds.), *Handbook of the Life Design paradigm: From practice to theory and from theory to practice* (pp. 117-133). Göttingen, Germany: Hogrefe.

McWha-Hermann, I., Maynard, D.C., & O'Neil Berry, M. (Eds.). (2015). *Humanitarian work psychology and the Global Development Agenda: Case studies and interventions*. New York, NY: Routledge. doi:10.4324/9781315682419

Nota, L., & Rossier, J. (Eds.). (2015). *Handbook of life design: From practice to theory and from theory to practice*. Göttingen, Germany: Hogrefe.

OECD (2015). *Fit mind, fit job: From evidence to practice in mental health and work*. Paris, France: OECD Publishing. Doi:10.1787/9789264228283-en

Paul, K. I., & Moser, K. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior*, 74, 264-282. doi:10.1016/j.jvb.2009.01.001

Ribeiro, M. A., Silva, F. F., & Figueiredo, P. M. (2016). Discussing the notion of decent work: Senses of working for a group of Brazilian workers without college education. *Frontiers in Psychology*, 7, 207. doi:10.3389/fpsyg.2016.00207

Rossier, J., Maggiori, C., & Zimmermann, G. (2015). From career adaptability to subjective identity forms. In A. di Fabio, & J.-L. Bernaud (Eds.), *The construction of the identity in 21st century: A Festschrift for Jean Guichard* (pp. 45-57). New York, NY: Nova Science Publishers.

Savickas, M. L., Nota, L., Rossier, J., Dauwalder, J., Duarte, M. E., Guichard, J.,... Van Vianen, A. E. (2009). Life designing: A paradigm for career construction in the 21st century. *Journal of Vocational Behavior*, 75, 239-250. doi:10.1016/j.jvb.2009.04.004.

United Nations Development Program. (2014). *The role of the private sector in inclusive development: Barriers and opportunities at the base of the pyramid*. Retrieved from:

http://www.undp.org/content/dam/undp/library/corporate/Partnerships/Private%20Sector/undp-psd-iicpsd-barriers_and_opportunities_BOP_full%20report_updated_2014.pdf

The future of work in Latin America

Enrique de la Garza Toledo³

We cannot pretend to analyze the future of work throughout the world. As we will see, the diversity of working contexts is so great that any attempt to generalize could lead to unilateralizing the analysis. Instead, we will focus our reflections on Latin America, using its most emblematic countries.

We must also say that from our perspective on social science studies of the future, we find of little usefulness past forecasts, whether simple or complex, made strictly through structural variables. Because the future, from our viewpoint, is not simply the result of structures self adjusting, but rather, also of reflection and interaction on the part of social subjects—in the case of work, consisting primarily of business owners or managers, labor unions and the state—with influence of macroeconomic variables, as well as the institutions and interactions between subjects such as those mentioned above. To that extent, dealing with the future from a social perspective is more a question of defining the space of possibility, framed by structural parameters and within which the fundamental subjects interact themselves, in such a way that the future result as a product of structures and institutions, but also of collective subjects with the capacity to reflect.

It would also be useful to clarify what we understand by the future of work. It would be reductive to think about this future only in terms of the future of jobs, the number of workers employed or their skills. The future of work should include jobs, but also labor and labor union relations. The latter two of these are pressured by changes in the types of jobs, but also by the system of labor relations, the economic and political model, as well as the power relations between these three major actors. This means that there is no linear relationship between changes to jobs and the labor policies of companies, the state, or labor unions. In any event, the new forms of work pressure, but do not linearly determine the latter.

In particular, the future of work does not depend exclusively on the level of informatization, robotization and automation of jobs. The technological factor, providing labor savings at the same volume of production, is mediated in Latin America⁴ by parameters such as the following:

1. Whether the economic model is extractivist or export manufacturing. In very schematic terms, the most part of Latin American economies depend of the export of commodities such as meat, leather, agricultural products, and mining (a model that corresponds to almost the entire region), or export manufacturing, as in the emblematic case of Mexico and its partial extension to some countries of Central America and the Dominican Republic. This latter model is more susceptible to robotization than the former.

³ Professor of the Autonomous Metropolitan University in Mexico City. Email: egt57@hotmail.com. Web page: <http://spgwe.izt.uam.mx/pages/egt> and <http://www.izt.uam.mx/sotraem>

⁴ Although we are focusing on Latin America, part of our reflections could be a point of departure to analyze other contexts such as the industrialization of undeveloped Southeast Asia or extractionist economies in Asia or Africa.

2. However, most people in Latin America work in services, which is the fastest growing sector in contrast to the stalling of industrial activity. Most of these services are informal with the low productivity and labor skills that entails, with 46% of all those employed working in the informal sector. However, wage earners remain the largest group (64% of the Total Employed Population), and while the percentage of those who are self-employed is growing, they remain a minority (27% of the economical active population). While most of those employed are in services, which are tending to grow, they involve precarious services lacking any trend toward automation.
3. It is true that precarious services exist alongside modern ones (banking, telecommunications, and both healthcare and part of educational services), which tend toward greater informatization. However, this trend may be tempered, first, because an important part of the tasks the workers undertake involves direct interactions (face to face, over the internet or by phone) with users, and these interactions include emotional, esthetic, cognitive or ethical dimensions that would be difficult for a robot to supply. As for informatization, the low degree of internet penetration in this society favors direct attention in offices, unlike in other countries (bank tellers, customer service centers, etc.). At the same time, TICs-enabled services in which employees intervene do not necessarily entail high skill levels. Many writers use today the category of Taylorization of informatized or modern services, such as call centers.
4. The future of work depends, first and foremost, on the persistence or lack of the prevailing economic or production model. And there may be significant heterogeneities within each country.

Let us analyze the extreme case of a clearly manufacturing-export economic model in which the greatest percentage of its exports are manufactured, as is the case of Mexico (manufacturing exports/total exports = 82.5%). This model has involved, above all, a special type of in-bond manufacturing, the maquiladora industries (maquiladora exports/manufacturing exports $\times 100 = 42\%$). These are low value-added industries that pay low wages to large numbers of low skilled workers for to assemble products for shipment to the United States, largely on behalf of multinational firms. Such plants offer wages below the average paid by Mexico's manufacturing industry, import most of their inputs or components, and wages account for the greatest part of their value added. Low wages have been one of the conditions that allowed for these sorts of plants to multiply in Mexico. Most are labor intensive and do not employ high technologies. They are concentrated in auto parts, electric or electronic products, and apparel. So far in the 21st century, we have recognized a new phenomenon in this model of manufacturing with the arrival of a new generation of affiliates of the major final assembly automotive corporations, though the focus of this branch remains on auto parts. The new generation of car assembly plants is robotized, and it is worth analyzing the future effects of a greater degree of robotization in this type of plant, rather than in those producing auto parts. Auto-parts facilities, which generally consist of labor-intensive maquiladoras, employ 850,000 workers, while maquiladoras in general employ three million. Automotive assembly plants with advanced technology only employ 68,000 workers. So the automotive industry in general, despite its dynamic export activity, accounts for a mere 3% of GDP, 8% of the total of the exporting, with 26% of domestic inputs, and 0.6% of the country's Economically Active Population (EAP). Workers at auto-parts plants earn less than the national manufacturing industry average. In contrast, auto assembly plants pay better-than-average wages, but those wages account for a scant 6.6% of value added of this plants. While assembly plants in Mexico pay higher wages than those producing auto parts, people working in auto assembly plants in the United States make nine times more than their counterparts in Mexico. This means that despite the technological

changes in auto assembly, the export manufacturing model remains, above all as maquiladora —including the production of auto parts— and the thin high-tech strata is also low-wage compared to what workers are paid in similar plants abroad.

Now let us return to our problem regarding the future of work, which in some of its current versions is depicted as the end of work in the face of automation, especially robotization. Historically, each industrial revolution has been labor saving, if one analyzes specific job positions. But it is not possible to demonstrate that such revolutions have translated, over the long term, in an increase in unemployment. Instead, labor savings have been achieved at the same time as the new technologies have given way to new occupations. For example, the previous revolution in telecommunications (digital system, fiber optics, cellular) lowered the number of workers in switching stations, but required customer care centers, which have become the most abundant category. Moreover, the new technologies do not absolutely eliminate low skilled jobs, but instead transform them in knowledge, skills, and experience, thereby producing a segmentation of the internal labor market between low-skilled robot monitoring as opposed to technicians dedicated to logistical, programming and monitoring of platforms or their sophisticated maintenance.

German researcher J. Beckman (Seminar on New Union Scenarios and Policies in the Automotive Industry in Mexico, Ebert Foundation, April 3, 2017, Mexico City), says that trends related to the effect of robotization on jobs are not clear, and we can add that in countries such as those of Latin America, they are mediated by:

- 1) The polarization of the productive apparatuses between a formal and an informal sector. In the latter case, the new technologies are not likely to have a significant repercussion unless they are the minority of cases that are related to computerization or information technologies.
- 2) Extractive or export manufacturing models. Automation is more feasible, in the abstract, in the latter of these. However, we have seen that the links in value chains installed in Latin America are of lower value added and more labor intensive. Their automation is offset by very cheap labor, which can make an only slightly automated process competitive relative to robot introduction.
- 3).The predominance in Latin America of precarious service employment, especially street vendors, makes it difficult to foresee its automation. The informatization of modern services can be limited by the characteristics of a clientele with limited computing experience (in Latin America only 8% of workers use the internet on the job), and which seeks warmth in the provisioning of services, especially when they consist of the interaction or shared generation between the employee and the user of emotional, esthetic, cognitive or moral meanings. Moreover, in general, not all the operations of all productive processes can technically be robotized at present.
- 4) Obviously, other delimitations that frame the possible impacts of automation on work in Latin America would act as an extension of the current economic model and its growth. As we noted in the introduction to this piece, there is no inexorable future determined solely by structural questions. Instead, social actors have a more or less broad range of options from which to explore solutions, although they are never free to propose just any project at any given time. To that extent, there are

limits to the trends toward automation, robotization and informatization in countries like those of Latin America such as we have described, and labor relations (trends toward precarious flexibilization, atypical labor, the marginalization of labor unions as interlocutors of labor relations) not only depend on the extent to which jobs are automatized, but also on the balance of forces between such actors. A dependency of political forces on state power and corporate policies, and the activity or passivity of labor unions. This fundamental part of the future of work is also marked by economic and institutional structures as labor laws, but there will always be a space, whether vast or restricted, for viable action by workers to push for decent employment.

Workshop of Experts on Work and Society: A contribution to the Future of Work Initiative Turin, Summary of recent research

Professor Gerhard Bosch, Institute of Work, Skills and Training, University Duisburg-Essen, Germany

1. Increasing inequality in the developed countries

In the years following the Second World War, income inequality in most developed countries was significantly reduced by strong trade unions and high rates of coverage by collective agreement. In 1957 Dunlop could still assume that 'collective bargaining must be taken as the normal case' (Dunlop 1957: 125). In recent decades, job quality in many countries has deteriorated considerably as a result of increasing income inequality, the increase in low-wage work and the constant fear of loss of income, even among well-paid workers.

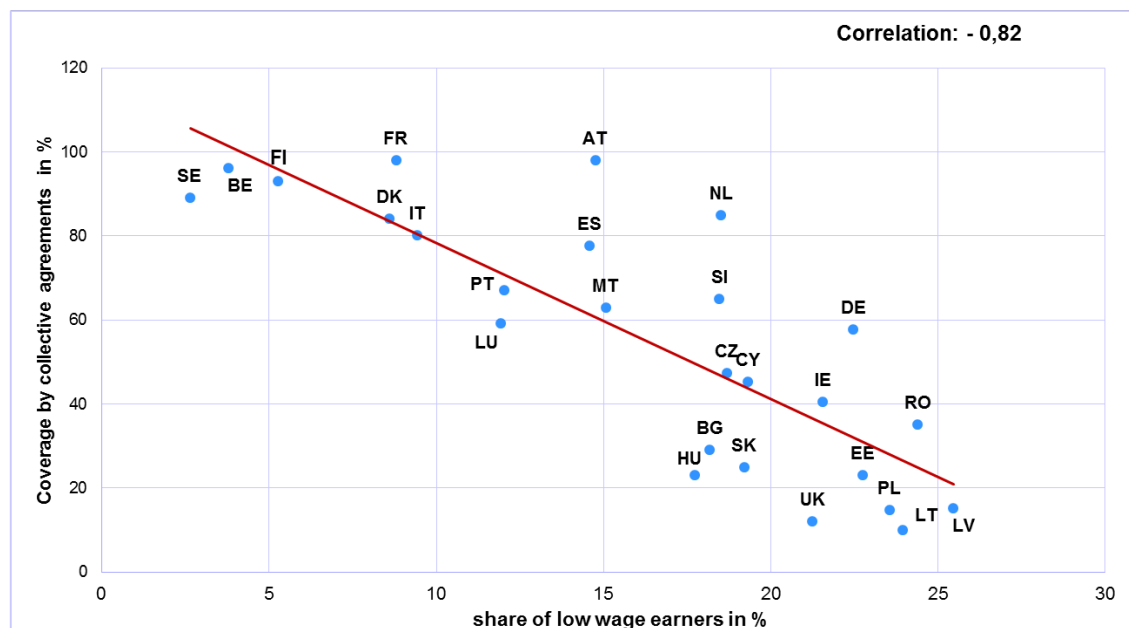
Because of the multiplicity of influencing variables, explaining the increasing income inequality is anything but simple. Universal explanatory models, such as the skill-biased technical change so beloved of economists, for example, do not help, since their effects are filtered by institutions. The Scandinavian countries prove that the negative effects of this skill bias – which is undoubtedly a challenge for all countries – on the income distribution can be avoided by a high level of coverage by collective agreement and an active training policy, i.e. by intervening simultaneously on both the demand and supply sides of the labour market. The widening wage differentials between companies and employees with varying levels of qualification can be attributed primarily to the erosion of the once inclusive wage systems, which was able in the past to keep such differentials low by means of industry-wide collective agreements.

2. Inclusive wage systems not just minimum wages

Research has shown that the level of inclusiveness of the wage-setting system is the main factor in explaining inequality of market incomes for dependent employees, over and above the median wage level. By contrast, inclusive systems allow workplace negotiations to be managed collectively by employees with varying degrees of bargaining power. The agreed terms are then made universal for all employees working in that particular company or industry or for the overall economy (Bosch, Mayhew and Gautié, 2010).

In the EU the correlation between the rate of coverage and the share of low-wage workers is very strong with 0.82 (Figure 1), while it is only 0.34 for minimum wages (Grimshaw/Bosch/Rubery 2014). This is hardly surprising, since the pay scales negotiated by collective bargaining are generally higher than the minimum wage and extend into the intermediate or even higher pay brackets well above the minimum wage. They set not only lower limits but also norms for fair pay that ensure that skills, additional responsibilities and, in particular, difficult working conditions and unsocial hours attract extra remuneration.

Figure 1: Correlation between the coverage by collective agreements and the share of low wage earners in the EU 2014

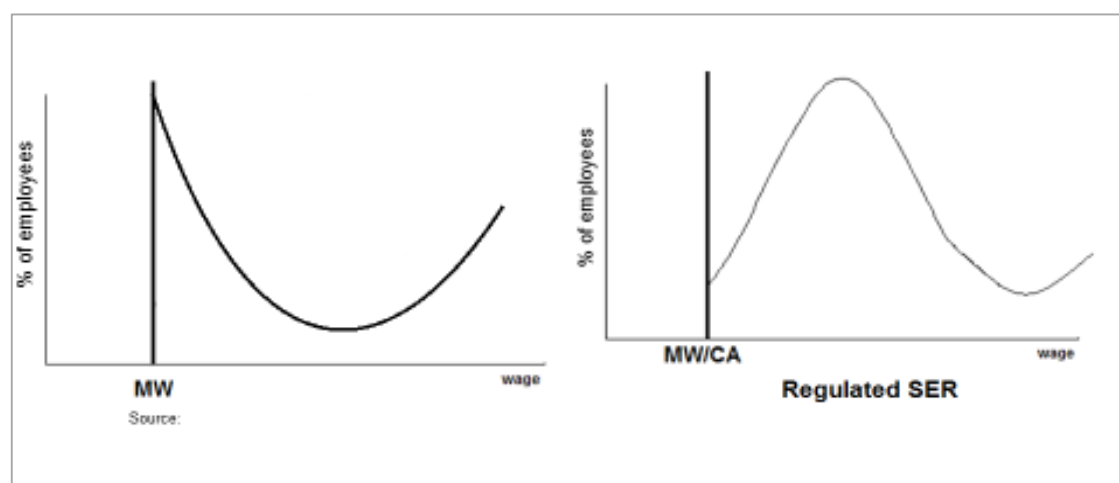


Source: Visser 2015, Eurostat, own calculations

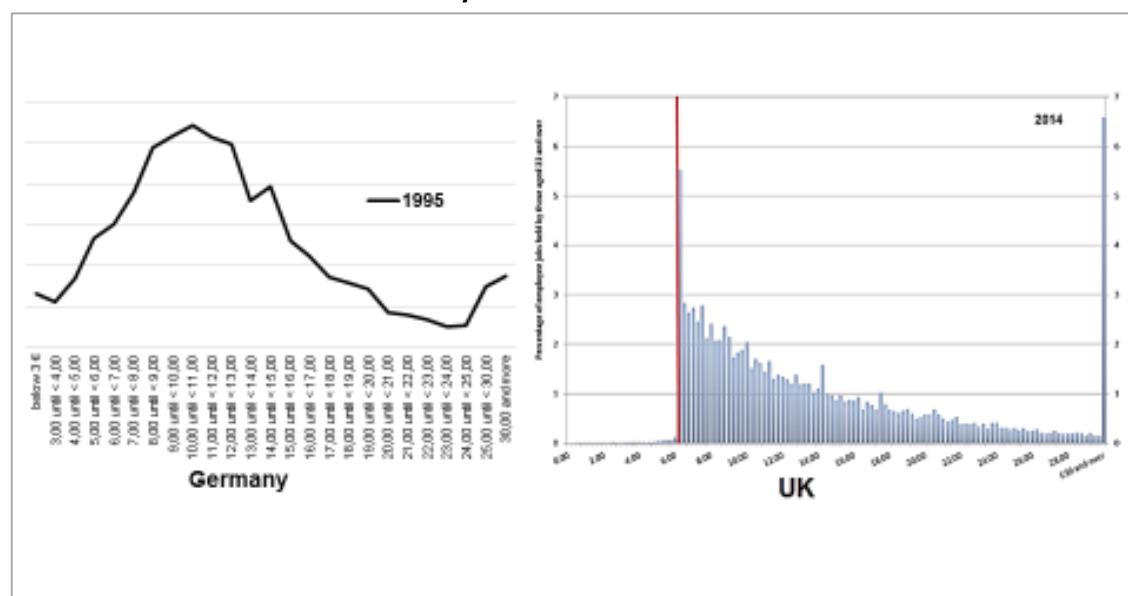
3. Strong middle class depends on multi-company bargaining

The influence of collective bargaining on the income distribution is all the greater the more inclusive they are. Decentralized bargaining at company level may even support the growth of dualistic labour markets, since negotiations only take place in big companies. National or industry-wide collective agreements are significantly more inclusive than company agreements, since the collectively agreed standards are extended to employees in companies with weak bargaining power, such as small firms in particular. Minimum wages, on the other hand, are generally below the low-wage threshold (less than two thirds of the median wage) and therefore compress wages only in the lower deciles of the income distribution.

Figure 2: Wage distribution in a liberal market economy with MW and in coordinated market economy with high coverage by collective agreements



Two real cases: UK 2014 and Germany 1995



Source: SOEP 2012, own calculations; Dickens (2015): The Low Pay Commission and the National Minimum Wage. Presentation to NEDLAC 2016

In countries with decentralized bargaining systems and decreasing coverage by collective bargaining the peak of hourly wages is at the level or near the minimum wages while in countries with strong multi-employer collective bargaining and a stable standard employment relationship (SER) the income peak is far

above the minimum wage. Two real cases like the UK or Germany before the deregulation (1995) confirm the high importance of collective bargaining for the stabilisation of the middle class (Figure 2).

4. Strengthening collective bargaining by protective or participative labor standards

The distinction Sengenberger (1994) makes between protective and participative standards can help us to understand more clearly the differing kinds of state influence on wage setting and other labour standards. Protective standards, such as minimum wages or the extension of collective agreements, directly establish norms governing employment conditions. Participative standards confer consultation or codetermination rights on employees or their representatives and organisations, who are protected from discrimination when they seek to exercise those rights or equipped with resources (time and money). By establishing participative standards, the state can, as it were, enable others to influence working and employment conditions in its stead.

Table 1 shows considerable differences between seven EU member states in the mix of these standards. In the two wage systems traditionally described as autonomous – those of Germany (before 2007) and Sweden – the state does not intervene directly in the wage-setting process with protective standards. Rather, the weaker side of the labour market is strengthened by means of strong co-determination rights at establishment and company level.

As an ‘enabling state’, the Swedish state has acted to compensate for the unions’ structural inferiority by establishing strong participative labour standards. This makes it possible to delegate the negotiations to the social partners without the state having subsequently to intervene with corrective measures, such as minimum wages, because of high shares of low-wage workers. The counter-example is Greece where, at the behest of the ‘institutions’, the state was able in no time at all to rip out the few anchors that had kept the collective bargaining system in place over the previous 20 years. This underscores the importance of co-determination rights at establishment and company level which in a number of countries stabilise the collective bargaining systems by establishing statutory rights to participation.

Table 1: Statutory protective and participative labour standards in five national wage setting systems (2010)

	Germany	Sweden	UK	France	Belgium	Greece	Spain
Statutory standards							
- protective	(X)*	-	X	XXX	XXX	(XX)***	(XXX)***
- participative	XX	XXX	-	X	XXX	-	X
Trade union density	19%	68%	27%	8%	52%	24%	20%
Rate of coverage by collective agreement (employees)	61%	91%	31%	92%	96%	64%	82%**
Share of low wage workers (>2/3 of median wage) 2010	22.2%	2.5%	22.1%	6.1%	6.4%	n.a.	14.7

* From 2007 with the introduction of industry minimum wages 2015 with the statutory national minimum wage, ** 2009, *** Deregulation after 2010 (Intervention of the Troika)

State-imposed standards: - none, X weak, XX moderate, XXX strong

Source: Bosch/Lehndorff 2017

References:

- Bosch, G., Mayhew, K. and Gautié, J. (2010), *Industrial relations, legal regulations, and wage setting*, in J. Gautié and J. Schmitt (ed.), *Low-Wage Work in the Wealthy World*, Russell Sage, New York, pp. 147-182.
- Bosch G., Lehndorff S. (2017), Autonomous bargaining in the shadow of the law: from an enabling towards a disabling state, in: D. Grimshaw, C. Fagan, G. Hebson, I. Tavora (eds.), *Making work more equal. A new labour market segmentation approach*, Manchester University Press, Manchester (appearing)
- Dunlop, J.T. (1957), 'The Task of Contemporary Wage Theory' in G.W. Taylor and F.C. Pierson (eds.) *New Concepts in Wage Determination*. New York/Toronto/London.: pp. 117-139.
- Grimshaw, D., Bosch, G. and J. Rubery (2014), 'Minimum wages and collective bargaining: What types of pay bargaining can foster positive pay equity outcomes?' *British Journal of Industrial Relations* 52(3), pp. 470–498.
- Sengenberger, W. (1994), 'Protection – participation – promotion: The systemic nature and effects of labour standards' in W. Sengenberger and D. Campbell (eds.), *Creating Economic Opportunities: The role of labour standards in industrial restructuring* Geneva: ILO: pp. 45–60.
- Visser, J. (2015), *Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts (ICTWSS). An international database*. Amsterdam Institute for Advanced Labour Studies (AIAS), Amsterdam

The Future of Work: Thoughts from a Developing Country Perspective

Professor Imraan Valodia: Dean, Faculty of Commerce, Law and Management,

University of Witwatersrand, Johannesburg, South Africa

Introduction

The Fourth Industrial Revolution is here. Across the world communities are adjusting to new ways of doing business, consuming goods, socialising and doing research through technology. The sheer speed and scope of technological developments probably means there is no stopping these new ways of doing, but at the same time it is crucial we remain vigilant about the possible repercussions that technology can have. For a country such as mine – South Africa – as for many others, two issues, job security and inequality, are especially important. Already technological advances are impacting on both skilled white-collar and unskilled workers. This is in contrast to the digital revolution, which affected mainly semi-skilled, blue-collar workers. As is the case with all new innovations there are opportunities for interesting new developments that benefit humanity (technology could greatly assist in areas of health, conflict and the environment for example) but also threats of bringing about significant negative consequences – including under-employment, large job losses, smaller proportions of the workforce having access to jobs, increased inequality and a rise in poverty.

Given complex current labour market challenges internationally, we need, as a society, to carefully consider this debate, engage with the research in the area, and develop plans for how we will be dealing with these developments. After all, technological change is not a process that is independent of social norms and regulations. Instead, these social norms and regulations fundamentally shape both the process of technological change and its outcomes. However, while the technological changes will affect the labour market globally, we should not assume a one-size-fits-all approach that is based on how wealthy countries will adjust to this new world of working. South Africa and most other developing countries unfortunately have a combination of very serious structural economic problems, which suggests that the impacts on these societies is likely significantly to differ from the current developed country “work-leisure” paradigm. Our massive inequality, high levels of poverty, and millions of citizens – qualified and unqualified – who cannot find work, means that we are already far more vulnerable to these sweeping and inevitable changes than wealthy countries. It also means that we need to urgently start having these important conversations in order to ensure we are drivers, and not responders, of the fourth industrial revolution.

Work and the realities of the current labour market

1. In countries such as South Africa, as in many other African countries, the concept of ‘work’ is

inextricably linked to a long history of exploitation and dispossession. Our history is one of forcing indigenous South Africans off the land (through land taxes) and into waged work on the diamond and gold mines.

2. In much of the developing world, the informal economy provides a livelihood for the vast majority of poor workers. Yet, informal workers need constantly to fight for access to basic infrastructure to conduct their work. Notwithstanding the progress that has been made, informal work continues to be hidden from much of our economic and labour market analysis.
3. In much of the Southern African region, current patterns of economic growth have not generated sufficient employment opportunities for large proportions of the workforce. In South Africa, for example, up to one third of the workforce is unable to find employment. Among sections of the population – for example young workers and rural workers – unemployment rates are above 70%.
4. In many countries, the vast majority of workers earn extremely low wages. For example, in South Africa, research aimed at assessing an appropriate level for a national minimum wage showed that more than 50% of workers earned income well below the poverty line. This is the pattern over much of the developing world, but in the developed world a not insignificant number of workers earn very low wages.
5. Thus, to consider the future of work we should start from the premise that the traditional view of the labour market – full employment, high wages, low levels of inequality – is very much the exception in much of the world. Furthermore, we should be careful not to focus only paid work and completely ignore unpaid work, and the interactions between paid and unpaid work. The reality is that there is a gendered distribution of unpaid work, with a large number of women in our society having to deal with the burdens of low-paid work and an unequal burden of unpaid care work. Technological change has the possibility of significantly changing the nature of both paid and unpaid work.
6. There is a tendency to see the nature and pace of technological change as exogenous. Thus, most of the analytical work sees the latest period of technological change as displacing workers and favouring capital. But, surely technological change is endogenous – its research funding, pace, adoption and impacts are determined very much within power relationships that shape our overall economic and social outcomes. And, it is affected by and in turn affects policy.

Some Thoughts on Labour Markets in the Future

1. Developments in society are controlled by us, through our policy and governance systems and by how we choose to use them. We cannot avoid technological advancements but we can decide how technological change impacts on our world, and we have power to determine how to maximise the benefits, manage the shocks and minimise the risks. Two current examples of this which are evident in South Africa are AirBnB and Uber. They do not function independently of the regulatory environment (even if they would like to).
2. We have to acknowledge that technology will be disruptive. New advances are likely to result in extra costs for businesses as they adjust. There is also a chance that some of the advancements (particularly in the Artificial Intelligence arena) are going to replace human beings. Many of our large firms in manufacturing, financial, social and other services are likely to change the composition of their workforces over the coming decades.

3. The focus must be on looking at innovative ways to ensure technology serves to support, rather than replace, workers. Furthermore, countries will have to consider more social policy measures to ameliorate the shocks and manage the risks that are likely to flow from the changes that artificial intelligence is generating in employment patterns.
4. Technological change has different impacts on different groups. We need to understand how these new technological changes will impact on our already high levels of inequality and understand what policies and mechanisms can ameliorate the costs on the most vulnerable sections of our population (who are unable to absorb these 'shocks'), and how technology can lead to greater levels of equality.
5. In most developing countries, most jobs - especially for women- have, over the last three decades, been created in the informal economy. The conversation around technological advances must also look at work in the informal economy. Given that workers in the informal economy earn very low incomes, and are the most vulnerable, we should expect that the adjustment costs will be borne disproportionately by workers in the informal economy. We should, however also recognise that technology has the potential to increase incomes for informal workers, and to improve their conditions of work.
6. This means that it is incumbent on us as academics, policy makers and social partner leadership to start urgently having conversations that talk to measures to protect and promote the Decent Work agenda. At the very least there should be measures to ensure that workers who are most vulnerable are protected by some basic standards. One of these of course is a national minimum wage which would guarantee an income which – although still below the living wage – is a significant increase for 47% of workers in South Africa right now. But there are other social measures – such as a Basic Income Grant – which should be considered as protection mechanisms for the most vulnerable of society.
7. Technological change is a global phenomenon and its implications – positive and negative – are felt across all countries of the world. While there will be winners and losers in all countries, it will probably be the case that the negative impacts are felt disproportionately in the Global South. We need, as a global society, urgently to begin to consider compensatory mechanisms that will balance the costs and benefits of the fourth industrial revolution across the globe.
8. Finally, artificial intelligence and the fourth industrial revolution are seen as exogenous and their negative implications on employment are seen as inevitable. In his last book, *Inequality: What can be Done?*, the doyen of inequality studies Tony Atkinson, urges us to see technological change as endogenous. Furthermore, he suggests that the direction of technological change should be an explicit concern for policymakers. Policy should encourage innovation and technological change that increases the employability of workers, and improves levels of social and economic delivery).

Unions and society

By Kjeld Jakobsen

Introduction

The creation of trade unions by the workers has always been a collective reaction facing the exploitation caused by capitalism. The form of their organization along the history of capitalist development usually depended on the enterprises structure and how they managed the labor force. The way how trade unions were structured at the dawn of the first industrial revolution was not the same as the kind of organization achieved by the workers under the second one.

The point raised by this article is that the trade union organization stagnated in the industrial model apparently ignoring that the vertical “Fordist” model of production changed into a new model of horizontal global production chains and this is on the edge of going through deep technological changes with the fourth industrial revolution the so called 4.0 revolution.

So, if the present trade union organizational model isn’t able to deal adequately with the characteristics of the third industrial revolution represented by the global production chains, what can we expect from it when the fourth industrial revolution starts? The symptoms of the trade unions insufficiency are visible particularly considering the decline of trade union membership in the industrialized countries in comparison to the data of the 1970ies.

The aim of this affirmation is to call attention to the fact that the trade unions by not considering the need of organizational innovation are forcing themselves to limit more and more the scope of their representation to the workers on the tops of the global production chains and leaving the workers of the supply companies, subcontractors, informal activities and other kinds of labor relations out of their coverage. Beyond the issue that many trade unions have also not been able to deal adequately with the changes within the labor market like the rise of the presence of women, youth, migrants and others that require specific policies to organize.

Trade unions during the “30 Golden Years” of capitalism

According McCormik and Hyman (2013) four elements are necessary for a trade union to get powerful and influential as a social and political actor. Those are the strategic and structural role of the economic sector where they act, a large membership and consequently financial power, organizational capacity and institutional influence.

Those elements become more visible while analyzing the progress of industrial workers unions since the end of the nineteenth century and the legal institutionalizing of freedom of association and collective bargaining during the 1930ies in most of the developed part of the world.

The apogee of the trade union power was achieved after the end of the Second World War and the inauguration of the thirty golden years of capitalism when a strategic alliance was issued with social democratic and Christian democratic parties of different styles in the industrialized countries leading to the establishment of important welfare states. At that time, trade unions were stronger, more representative and also recognized by national societies because many of the issues they struggled for, like social protection, spilled over in benefit of other social sectors but the formally contracted workers represented by them.

Even in countries like Brazil and Argentina, that went through authoritarian regimes the trade unions played important roles to restore democracy and to guarantee the application of public social protection schemes. For instance, Lula the trade union leader from the end of 1970ies and 1980ies started his fame at that time by defending issues that went beyond just wage increases and further got recognized by the Brazilian society as a politician worth to become president of the country.

The main characteristic of the production model since the beginning of the XX century until the 1970ies was its centralization in big plants where the companies were responsible for the whole process since the operation of raw material, production of spare parts, assembling of the goods and in some case even for the sale of the final product. Thus, frequently the labor force in certain plants was composed by thousands of workers. Those, usually were not skilled because they only had to operate at the assembly line and for that reason no specialization was required. In the USA, many workers in the industries were emigrants and some were not even fluent in English.

Particularly, in this country where the first unions came out from craft activities and were nationally represented by the American Federation of Labor (AFL), this federation didn't accept the industrial unions as members under the argument that it was impossible to organize crowds of non-skilled people locked inside a big factory. Those workers got organized by industrial trade unions that later on founded the Congress of Industrial Organizations (CIO) in the 1930ies. However, the merger of the AFL and the CIO only happened twenty years later when the kind of production model was clear and defined.

The fact is that the trade union organizational model that we know is the one of industrial unions constructed during the second industrial revolution with huge groups of workers inside the factories affiliated to them and this form has been applied to any new group of workers who got the right to organize even later like the agriculture workers and the public employees without any major consideration whether the industrial model was or not adequate for other economic sectors.

What changed?

The first technological innovation in the industrial production already started in the 1950ies when some factories in the USA introduced the use of automatic presses eliminating the jobs required before to handle manual ones. Afterward another innovation with huge impact on dock workers happened by the creation of containers managed by cranes at the harbors eliminating an important part of the manpower used to

load and unload the ships. Another change almost at the same time, with visible effects on employment, was the replacement of typewriters by computers in the administrative areas of the companies.

Nevertheless the crucial change of the “Fordist” production model came from Japan with creation of the “Just in Time” way or “Toyotist Model” which started to be introduced elsewhere initially in the 1960ies and increased in the next decades. This new way to manage industrial production aimed to increase profits by eliminating the surplus of raw material, spare parts and the final good because paralyzed material meant wasted money. However the fine adjustment of the production to avoid waste of material, energy, manpower and to issue the final good just in time according the demands of the consumers required another kind of administration than the “Fordist” model.

That led to the exchange of the vertical organization of the production toward an horizontal one. The further development of informatics as well as the progress of international telecommunication and transportation means allowed companies to decentralize the production and to benefit from comparative advantages of regions and countries too. For that to happen other initiatives also were necessary like the reduction or elimination of external tariffs and the introduction of new ways to manage the production like outsourcing and subcontracting.

The tariff reduction started mainly at the Tokyo Round of the GATT (1973 – 1979) and was completed at the Uruguay Round (1986 – 1994) which one was the most effective and broad international deal to liberalize trade so far. Outsourcing, despite trade union opposition became a reality everywhere and in many case supported by changes in the labor laws like a recent reform approved in Brazil allowing subcontracting in any sector of the production.

The technological advance, the change in labor management and the trade liberalization allowed the decentralization of the production internationally in a scale never seen before changing the profile of the labor market. The market that before was composed by thousands of formal workers belonging to the same company with other colleagues belonging to its subsidiaries in foreign countries with consumption capacity, changed radically. Now the number of workers in the plants of the mother country was reduced mainly to define the design of new products and to monitor the production chain. Eventually the company at the top of the chain produce some of the more sensitive goods but most of the production is decentralized.

The workers of the top of the chain, in a much smaller number, probably continue to be represented by their trade union as usual but those below in the production chain might have gotten unorganized because their part of the production chain moved to other places with no trade union organization or with weak labor legislation or even both.

Since the global production chains belong to the same company it’s necessary that the trade unions start looking to them as single companies and try to organize their workers as they were part of a single union or of various unions organized in a federation. It’s important to include the mother company as responsible for what happens along the production chain.

Conclusion

There isn't any prompt recipe about how to respond to these challenges. Nevertheless, we are only talking about the problems created by the third industrial revolution. If we are not capable to resolve those in a satisfactory manner, how can we expect to face the problems of the fourth one? A revolution where some predict that intelligent factories will need just a minimum number of workers and that millions of industrial workers may lose their jobs?

And, we are not even mentioning the situation of countries that are still dependent mainly on commodity exportation and just trying to introduce some characteristics of the first industrial revolution like developing a basic production of food, construction material and clothing.

The study issued by McCormik and Hyman (2013) despite pointing out the difficulties that the European trade unions are facing today and the hard choices they have been obliged to adopt to keep power and influence as well as their resilience, also call the attention to the issue that they are not too conservative to an extent that impede them to reflect about the need to change and innovate.

The latter is of supreme importance because more than ever, the reflection about the future of work shall include a world level discussion about the present of work and how the trade unions could organize workers and defend their rights in order to resume the political influence they had on society once in the past, because the coming technological revolution is expected to cause effects to everybody and not just to the workers.

This reflection needs to include the debate about national and regional sustainable developments like the trade unions in the Americas are trying to do at the present through the document elaborated by the TUCA, the Development Platform of the Americas (PLADA in its Spanish acronym). This initiative aimed to be discussed with several progressive political forces and governments in the American hemisphere was undertaken because the socio – political trade unionism defended by the TUCA proposes not only to deal with the problems faced by the workers during their presence at the labor places but also with the issues provoked by the moments they are merged into the society like economy, environment, public services and so forth.

The PLADA has a coverage in terms of content that deals with politics, economy, social issues and environment where any group can extract proposals for the purpose of adding to the discussion of national and regional development independently of their progress phase at the time. This kind of trade union intervention is crucial to influence the role of nations regarding the global production chains pretended by the multinational companies (MNCs). The question of whom decide about national development and production model is fundamental because it's clear that the MNCs plan a presence of developing countries in the global production chains mostly as suppliers of natural resources rather than producers of high tech goods.

This problematic generate another concern about power relations. National inclusive development and decent work will not be given by the MNCs by free. The only guarantee of inclusiveness is that workers and their allies in society together construct a strong political pressure on them to force the adoption of sustainable development policies, democratic management and social inclusion.

So, to finalize this debate, we need to return to the organizational issue and the international cooperation between developing countries and between their trade unions is a key element in front of the necessary improvement of development and the technological changes. Therefore, South – South country cooperation is a corner stone of any development strategy of the global south as shown by the potential of UNCTAD figures related to international trade and direct investments flows in the global south. These data also enforce the need and potential of South – South trade union cooperation in order to influence the national paths of development to ensure workers' rights and decent work based on instruments like the PLADA and others.

However, to face the present hegemony of MNCs and the production frame they try to impose on the world through the global production chains, a broader alliance is needed. Beyond South – South trade union relations to strengthen the position of the workers from the global south, it's very important that northern trade union organizations also realize that there is a common struggle in front of all of us because the headquarters of MNCs are mostly under their representation. Those who are still dealing with issues of the first industrial revolution and those who are on the edge to deal with the effects of the 4.0 revolution must act together.

Bibliography

McCORMICK, Rebecca G e HYMAN, Richard. Trade Unions in Western Europe: Hard Times, Hard Choices. Oxford: Oxford University Press, 2013

Gender Equality in Employment: Current status and possible futures

Lynn Roseberry, Ph.D

1. Little and slow progress towards gender equality in employment

Much progress has been made towards eliminating gender inequality since the ILO began to address the subject in the 1950s.¹ Sex discrimination is now nearly universally condemned by governments around the world.² Yet gender inequality in employment persists. Even in the Nordic countries, generally considered to be gender equality pioneers, women are severely underrepresented in leadership positions, are clustered into fewer occupations with lower pay than men, and are overrepresented among the poor.

Data collected by the UN, World Economic Forum, OECD, and European Institute for Gender Equality show that gender equality has not been achieved yet – anywhere. According to the UN's *Progress of the World's Women 2015-2016*,³ the global gender gap in labour force participation has narrowed slightly, but is still wide at 26.4%. Women are over-represented in clerical and support positions (63%) and service and sales workers (55%) compared to managerial occupations (33%). Women also earn on average 24% less than men with variation across regions. In 22 out of 34 countries with data, women are more likely than men to be in low-paid jobs. In some developing regions 75% or more of women's employment is informal, and thus outside the scope of labour laws and social protection. In most countries, women are less likely than men to contribute to a pension scheme, and to receive an old-age pension. In countries where large numbers of both women and men receive a pension, there are often large gender gaps in benefit levels.

¹ ILO Convention 100 on Equal Remuneration is the first international convention to address gender inequality in employment. Convention 111 on Discrimination (Employment and Occupation) followed in 1958.

² The Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW, or the Treaty for the Rights of Women), which was adopted by the United Nations in 1979 and entered into force in 1981 is held up by some international law scholars as evidence of a customary norm of international law. As of 2017, 189 countries have ratified it. The United States is among a small minority of countries that have not yet ratified CEDAW, and is the only country in the Western Hemisphere and the only industrialized democracy that has not ratified the treaty. However, US law, with regards to employment and most other civil rights, is largely in compliance with CEDAW.

³ UN Women. *Progress of the World's Women 2015-2016: Transforming economies, realizing rights. View the report at <http://progress.unwomen.org>.*

Some gender gaps in employment are smaller in developed regions. The gender gap in labour force participation has narrowed from 23.4% to 14.2% across developed countries. Sweden and Norway have each narrowed this gender gap to 8%. However, the pay gap persists at nearly the same level in developed regions as globally. Women in developed regions earn on average 23% less than men – just 1% more than the global average. A substantial part of the persistent pay gap is due to parenthood and marriage.

Lower rates of labour force participation, higher rates of participation in informal employment, gender pay gaps, and less access to pensions and other social protection contribute to large lifetime income gaps, making women more vulnerable to poverty than men, especially as they age. These trends are occurring in all developed countries. In France and Sweden, women's lifetime income after all social transfers is 31% lower than men's. In Germany, women can expect to earn 49% less than men.

2. The drag of history, the mirage of progress

Women's continuing struggle to support themselves and their children is due in large part to the difficulty of implementing the principle of gender equality in a labour market that developed and is still largely regulated according to the 20th century industrial model of "work". According to this model, "work" is something you do for someone else at a location outside your home for pay. This model arose during the time when women still did not have equal rights to an education, work, or own property. Sex discrimination in employment, particularly against pregnant women, and women with children, was permitted and quite normal until well into the 1970s in many countries.

Accordingly, the only kind of person who fit the 20th century industrial model of work was, and in many respects still is, male – hence the "male breadwinner" and the "housewife". These concepts appeared in the early phases of industrialization and have stayed with us ever since.

The influence of the 20th century industrial model on legislation, policy, and management practices continues to disadvantage women. Since the 19th century, the concept of "women's work" has been widely recognized as caregiving and housework. When they do this kind of work in the home, it is not considered work. When they do it in the labour market, it is poorly paid and lower status than male-dominated occupations.

However, the 20th century industrial model is becoming obsolete in practice. The new possibilities for "agile working" brought about by the Internet, smartphones, and portable computers make it less accurate to think of work as something you do at a fixed workplace outside your home. The distinctions between what you do at home and at work are breaking down as well. Much of what is regarded as home activity is performed at some kinds of workplaces – listening to music, changing clothes, taking naps, allowing children to come to work – and vice versa (checking e-mails, reading work-related documents, networking at home or outside of the office).

Such changes present opportunities for imagining a new, more gender neutral model of work, but lingering social norms from the industrial age prevent employers and policymakers from seeing them. The discourse about "work-life balance" is one example of this failure of imagination. The blurring of traditional distinctions between work and leisure make the discourse of "work-life balance" seem like a relic of the industrial age, out of touch with current realities. The distinction assumes that time not spent on work is

“leisure” time, but the only people who could claim that kind of leisure are men who do not share responsibility for household work equally with their female partners. When work is defined as something you do for pay, the time and effort that goes into keeping a job - getting to and from work, networking, further education, and the basic tasks of human survival (sleeping, preparing meals, washing clothes etc.) - do not count as work. The work that goes into raising children – the next generation of workers and citizens – does not figure in common definitions of work and is therefore largely regarded as leisure. The distinction between work and leisure is thus largely a mental construct, not a reflection of social reality.

Finally, job insecurity and falling wages make it difficult for people to spend time and/or money on participation in cultural activities, such as listening to music, going to theater, reading for pleasure, joining a sports club, or participating in politics. These factors contribute to maintaining male domination of public and cultural life, as the majority of men tend to have more time and money (but especially time) available to them than the majority of women, and they thus can better “afford” to participate in public and cultural life.

3. What can be learned from the Nordic countries?

The popular picture of the Nordic countries is of generous welfare states based on universalist principles where gender equality is close at hand.

While all industrialized democracies have passed legislation prohibiting sex discrimination in employment, only the Nordic countries have institutionalized universal welfare services. This difference is the main reason the Nordic region displays a higher degree of gender equality (and social equality generally⁴ⁱ). Universal access to publicly provided affordable welfare services – health care, education through university, childcare, eldercare, paid maternity and paternity leave, unemployment insurance, etc. – created the framework in which women were relieved of most care responsibilities at home and could enter full time employment. However, many continued their care work in the public sector, which has resulted in pronounced occupational segregation. For example, in Denmark, 84.4% of the employees working in the care sector – which includes education, health and social workers – are women. Men still represent the majority of private sector employees, while women represent the majority of public sector employees. More than half of the women are employed in the "Public Administration, Education and Health" sectors, while men are employed in a wider variety of private sector industries. This picture has changed little over the past 20 years.

Some of this occupational segregation is due to educational choices, but not all. For even where there has been a trend toward a slightly more equal gender distribution within individual educational programs, it has not led to less horizontal gender segregation in the labor market. The gender-specific sectoral choices – men are overrepresented in the private sector, while women are employed in the public sector – also appear among women and men with the same education.

⁴ Andreas Bergh, IFN Working Paper No. 1109, 2016. The Future of Welfare Services: How Worried Should We Be about Wagner, Baumol and Ageing? Research Institute of Industrial Economics, Stockholm.

The data support the conclusion that industrial-age gender norms continue to exercise a strong influence on educational and occupational individuals' choices. The mere existence of formally equal opportunities, professed commitments to gender equality, and high rates of labour market participation that result from universal access to welfare services are not enough. More and different instruments are required to close the remaining gender gaps.

4. The future of gender equality in employment: Risks and opportunities

The main risk the Nordic countries face in maintaining their status as gender equality leaders is the political response to the economic crises that have affected the entire Nordic region from the 1970s into the 1990s and then again since the financial crisis in 2008. Low-skilled jobs began disappearing, and unemployment rose and persisted throughout this period. The Nordic countries have responded to these crises by implementing labour market reforms involving less generous unemployment insurance (except in Norway) and increased use of activation measures.

Throughout the region, center-right political parties have gained power arguing that the high tax rate, which has financed the welfare services on which gender equality is based, inhibits economic growth and that unemployment insurance inhibits motivation to work. The commitment to universalist principles underpinning welfare services has been eroding as center-right parties argue for privatization of health services and education and limiting immigrants' access to welfare services.

The main opportunities for making further progress towards gender equality in employment lie in:

- 1) Providing a legal and policy framework that recognizes family care (children, aging parents, etc.) as productive work and the equal right and responsibility of both men and women, regardless of their occupation.
- 2) Addressing gender bias in childcare and educational institutions.
- 3) Educating employers and managers about management practices that have been shown to promote gender equality.

As for the first point, Denmark's lower ranking on gender equality rankings as compared with the four other Nordic countries could be partially explained by the fact that Iceland, Norway, Sweden and Finland have earmarked at least 8 weeks paid leave for fathers while Denmark has only earmarked 2 weeks of paid paternity leave. Further, the segregation of men and women between the public and private labour markets may be due to the fact that the public sector seems to provide the flexible working conditions that women with children prefer whereas many men opt to work in the private sector because private sector jobs tend to pay more.⁵ Rethinking the relationship between paid work and family care responsibilities, how we define and value "work", and the links between "work" and social protection could yield substantial gains for gender and broader social equality.

As for the second point, the Nordic countries adopted gender equality as a goal of education in the 1970s. There have been various Nordic and national cooperation and research networks on gender equality in education since the 1980s. Despite this four-decade-long history of collaboration on gender equality in

⁵ Iselin Løvslett Danbolt. 2016. Think Piece: The Ultimate Balancing Act: Work and family in the Nordic region. Nordic Council of Ministers.

education, progress has been slow. Young men and women are still making starkly different educational and professional choices. Gender equality and active citizenship are considered fundamental principles in Nordic compulsory education, but they do not appear to be covered explicitly in the subjects taught in schools. Nor is gender equality education a regular part of all teachers' initial training.⁶

A recent project funded by the Nordic Council of Ministers identified the following as the most promising practices for furthering gender equality in education⁷:

- 1) gender mainstreaming in education, both in teaching and learning;
- 2) gender equality planning at schools (GEP);
- 3) recruiting gender equality educators to municipalities;
- 4) creating a national or a Nordic gender-equality certificate for educational institutions to acquire;
- 5) promoting gender balance and diversity among educational staff; and *six*, gender equality work with the parents of students.

Together, these six practices present a comprehensive strategy for promoting gender equality in education.

The third point raises a challenge that can and should be met by a range of different actors, e.g employer and professional organizations, government, trade unions, and business schools. The key point here is that there is a growing scientific literature presenting evidence on the kinds of management strategies and practices that promote gender equality in employment.⁸ However, this knowledge has not been widely disseminated – neither among business schools nor among governments nor among employer organizations. A first step toward meeting this challenge would be the establishment of national resource centers staffed by recognized experts in gender equality who would have the task of collecting and disseminating valid and reliable research on effective gender equality strategies and practices. These include new approaches to organizing work, hiring, evaluating performance, promotion, and task assignments.

Finally, as a general matter, and as the foregoing suggests, gender inequality in employment is a complex social problem that requires strong political leadership. Our leaders and fellow citizens must believe that gender equality is worth investing in. Achieving true gender equality – equal opportunities as well as equal results – requires comprehensive national strategies and sufficient resources to support development and implementation of new ways of working.

⁶ Mervi Heikkinen (Editor). 2016. Promising Nordic Practices In Gender Equality Promotion In Basic Education and Kindergartens. University of Oulu.

⁷ Id. at p. 120

⁸ See, e.g., Frank Dobbin, Alexandra Kalev. Why Diversity Programs Fail. *Harvard Business Review*. 52-60. July-August 2016; Iris Bohnet. 2016 *What Works: Gender equality by design*. Belknap/Harvard University Press.

The Future of Work and 21st Century (Digital) Skills

Magdalena Claro

The importance of skills for work and citizenship

As it has been widely documented, the global increase in the availability and use of digital technologies has changed the way contemporary societies are organized. Among other things, these societies are characterized by the movement from an economy based on raw materials and manual labor to one based on knowledge and global capital, and the development of interactive horizontal communication networks (Castells, 2004). As a result of this, new trends emerge in the way people do business, communicate, participate, work and spend their free time. New generations are increasingly growing up with the Internet, videogames and mobile devices; technologies that are being used for formal and informal learning, as well as social and recreational purposes (Erstad, 2012; Livingstone et.al., 2011)

This position paper will focus on the challenges and demands that an increasingly digital and knowledge-based society poses to education systems as centers of preparation of future citizens and workers. In most countries, education systems still prepare students for an industrial model of social and economic development, failing to equip them with the necessary knowledge and skills.

Digital technologies are driving new trends such as automated production and service delivery, and product innovations (Laar, 2017). These trends are eliminating certain types of jobs and impelling the creation of new ones, mostly related to knowledge-oriented occupations (ILO, 2016). Labour markets do not value technical skills per-se but higher-order cognitive abilities, especially in the context of the use of ICT. For the educational area, the economic sector's demand for high-skilled workers triggers the need to develop a high-quality workforce that together with a strong foundation on traditional literacy skills (reading, writing and Mathematics) is able to solve non-routine problems and deal with complex information often presented in digital environments. As Levy and Murnane (2004) put it, skilled non-routine employments, such as expert thinking and complex communication, augment. Expert thinking demands solving problems for which there are no rule-based solutions, and complex communication means among other things, persuading others of the implications of the information.

The rising importance of a highly skilled workforce means that there will be a growing income gap between less educated, relatively unskilled workers and highly educated, highly skilled workers. This threatens to increase existing social and economic gaps within and between countries. The OECD's Survey of Adult Skills (PIAAC) provides evidence related to this tendency. This study was applied in 33 countries and economies between the years 2013 and 2015, and measures adults' proficiency in three key information-processing skills, namely literacy, numeracy and problem solving in technology-rich environments. Results showed that

adults with higher proficiency in these skills tend to have better outcomes in the labour market. More specifically, they have greater chances of being employed and of earning higher wages. This holds true also when accounting for other factors, such as educational attainment, work experience, occupation and field of study. In addition, results showed that close to 50% of adults are proficient only at or below Level 1 in problem solving in technology-rich environments. This means they are able to use only familiar applications to solve problems that involve few steps and explicit criteria, such as writing an email and browsing the web. Also, in all countries/economies, an important proportion of adults (ranging from one in ten to one in two) are proficient or below Level 1 in the domain of literacy or numeracy. At this level, adults have trouble extracting information from complex texts or performing numerical tasks involving several steps and mathematical information represented in different ways. Finally, there are important differences between countries: mean scores in all three domains were substantially below the OECD average in Turkey and Chile (the only Latin American country participating in this survey) and showed that countries/economies with lower mean scores tend to have more variation in scores among their adults (OECD, 2016a, OECD, 2016b).

21st century (digital) skills and education

These changes in society have significant implications for education, as they emphasize the importance of certain types of competencies and skills, often referred to as *21st century skills and competencies*, to indicate that they are closely related to the characteristics and needs of the emerging models of economic and social development (Aniandou & Claro, 2010). Within this debate, several initiatives share the vision of a society fully exploiting the possibilities of the knowledge economy, and push curricular reforms to emphasize higher-order thinking skills over memorization and reproduction of facts and fixed knowledge skills such as communication, creativity, collaboration, critical thinking, and use of ICT are common examples of these new set of skills (Trilling & Fadel, 2009; Griffin & Care, 2014).

An important part of the debate also addresses the current and future role of digital technologies in the school curriculum. First, the interactivity and the speed and volume of information flow fundamentally transform the content as well as the nature of teaching and learning in both schools and homes (Facer et al., 2003). This transformation is related to the fact that the educational challenge today is less about the transmission of knowledge, and more about how students learn to think critically and creatively. In a world where knowledge and information are readily available online, it is important to understand the impact that this new context has on learning school subjects. School subjects provide different perspectives and approaches for young people to actively make sense of their experiences in the world. Digital technologies not only shape and influence the ways in which school subjects are learnt; they can also affect what young people know about school subjects and the skills that they will need in order to master a certain subject (Hague & Payton, 2010).

Second, computational thinking and programming have started to be considered as key competences. Computational thinking refers to thought processes involved in formulating problems and their solutions in a way that they can be solved by computers (Wing, 2010); while programming is directly related to the design of algorithms and the definition of codes that are implemented in computer language. The argument

is that being able to understand and control digital technologies to solve problems is relevant in most professions and economic activities, not only in the technology industry. Countries such as the UK, South Korea, Israel and the United States have started to incorporate this competence into their national curriculums.

Third, digital literacy has become increasingly important in learning contexts. A technology-rich society requires that individuals acquire a new set of skills related to the use of digital technologies. That is, the population should have the necessary cognitive, practical and socio-emotional skills related to the use of ICT for their full participation in society (van Laar et.al., 2017; van Dijk & van Deursen, 2014). The concept of digital literacy has shifted from a more technical and restricted orientation based on the mastery of computer applications towards a broader perspective that includes critically using these tools to solve cognitive problems on a daily basis. This so-called digital literacy (Gilster, 1998) has been considered a mind-set to both easily and effectively access knowledge in different codes and formats (e.g., text, videos, images) in a digital environment (Fraillon et. al., 2014; Martin, 2008).

Many assume that new generations will develop digital literacy spontaneously and, as such, in comparison to the conventional literacies, they receive little attention from school systems (Selwyn, 2011). However, research provides evidence to suggest that these skills are not equally distributed across all the population and that, despite popular belief, they do not develop spontaneously for the generation of so-called *digital natives* (Eynon & Geniets, 2015). In fact, research on information-problem solving in the Internet shows that while students may have the ability to find information using digital technology, they have difficulties defining information problems, specifying proper search queries, evaluating and processing digital information (Claro et.al., 2012; Fraillon et.al., 2014). This evidence supports the idea put forward by some authors that being effective in solving information problems is more demanding in a digital context (Warschauer, 2012). Also, empirical research tends to support the so-called Amplification Theory, which claims that instead of leveling the playing field, technologies amplify existing inequalities (Kentaro, 2011; Claro et.al., 2015). Hence, digital technologies seem to become a new source of cultural and social inequality, building on existing structural differences and giving rise to the so-called digital divide (Helsper et.al., 2015, Warschauer, 2012)

The previous shows that the importance of teaching digital literacy as an important capability for continuous learning and participation in contemporary societies. In fact, today lifelong learning is more and more important as work demands are constantly changing. This implies a change in the notion of learning, from 'learning things' to 'learning to learn', which sets the basis of lifelong learning (Anderson, 2008). For this, educational systems need to find a better balance between the emphasis in contents and the development of skills. They must provide the conditions so teachers can play a different role, from deliverers of curriculum contents to developers of students' critical thinking, and switch from frontal to hands-on teaching methods, where learners can apply their knowledge to solve real world problems in digital and non-digital environments. High-stakes national systems put pressures to schools and teachers that make difficult to make these changes.

In synthesis, evidence related to the population's higher-order cognitive skills in and outside digital environments, shows that people cannot simply be left to learn skills by themselves, and that interventions are required to address the inequalities in skills in younger as well as older generations. The challenge for education systems is to catch up with the changes and new demands placed by society. In this sense, developing 21st century (digital and non-digital) skills in education is not about being fashionable or simply about trying to engage students in learning. It is about addressing the fact that young people will need different kinds of skills, knowledge and understandings to be effective, competent, and critical workers and citizens in the digital and knowledge-based society.

References

- Anderson, R. (2008). *Implications of the information and knowledge society for education*. In J. Voogt & G. Knezek (Eds.), *International handbook of information technology in primary and secondary education*. Volume 20, 1, 5-22, New York: Springer.
- Aniandou, K. & Claro, M. (2009). 21st Century Skills and Competences for New Millenium Learners in OECD Countries. EDU Working paper no. 41. OECD.
- Castells, M (Ed.) (2004). *The Network Society: A Cross-cultural Perspective*. UK-USA: Edward Elgar Publishing
- Claro, M., Cabello, T., San Martín, E., & Nussbaum, M. (2015). Comparing marginal effects of Chilean students' economic, social and cultural status on digital versus reading and mathematics performance. *Computers & Education*, 82(0), 1-10. doi: <http://dx.doi.org/10.1016/j.compedu.2014.10.018>
- Claro, M., Preiss, D. D., San Martín, E., Jara, I., Hinostroza, J. E., Valenzuela, S., . . . Nussbaum, M. (2012). Assessment of 21st century ICT skills in Chile: Test design and results from high school level students. *Computers & Education*, 59(3), 1042-1053. doi: <http://dx.doi.org/10.1016/j.compedu.2012.04.004>
- Eynon, R. & Geniets, A. (2015). The digital skills paradox: how do digitally excluded youth develop skills to use the internet? *Learning, Media and Technology*, DOI: 10.1080/17439884.2014.1002845
- Erstad, O. (2012). The learning lives of digital youth—beyond the formal and informal. *Oxford Review of Education* 38: 25–43.
- Fraillon, J., Ainley, J., Schulz, W., Friedman, T., & Gebhardt, E. (2014). Preparing for life in a digital age: The IEA International Computer and Information Literacy Study international report.
- Griffin, P., & Care, E. (Eds.). (2014). *Assessment and teaching of 21st century skills: Methods and approach*. Springer.

- Hague, c. & Patton, S. (2010). Digital literacy across the curriculum. Futurelab.
- Helsper, E. J., van Deursen, A. J. A. M., & Eynon, R. (2015). Tangible Outcomes of Internet Use. From Digital Skills to Tangible Outcomes project report: Oxford Internet Institute
University of Twente, London School of Economics.
- ILO (2016). Technological changes and work in the future: Making technology work for all. The Future of Work Centenary Initiative, Issue Notes Series.
- Kentaro, T. (2011). *Technology as amplifier in international development*. ACM, 2 Penn Plaza, Suite 701, New York, NY 10121-0701, USA.
- Levy, F. and Murnane, R. (2004). *The New Division of Labor*. Princeton University Press.
- Livingstone S., Haddon L, Görzig A, et al. (2011). *Risks and Safety on the Internet: The Perspective of European Children: Full Findings and Policy Implications from the EU Kids Online Survey of 9–16 Year Olds and Their Parents in 25 Countries*. London, UK: LSE-EU Kids Online. Available at: <http://eprints.lse.ac.uk/33731/>
- Selwyn, N. (2011). *Education and technology: Key issues and debates*. Bloomsbury Publishing.
- Van Dijk, J. A., & van Deursen, A. J. (2014). *Digital skills: unlocking the information society*. New York, NY: Palgrave Macmillan.
- Van Laar, E., van Deursen, A., van Dijk, J., & de Haan, J. (2017). The relation between 21st-century skills and digital skills: A systematic literature review. [Review]. *Computers in Human Behavior*, 72, 577-588. doi: 10.1016/j.chb.2017.03.010
- OECD (2016a). *Skills Matter: Further Results from the Survey of Adult Skills*. OECD Skills Studies, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264258051-en>
- OECD (2016b). Policy Brief on the Future of Work - Skills for a Digital World © OECD 2016
- Trilling, B., & Fadel, C. (2009). *21st century skills: Learning for life in our times*. John Wiley & Sons.
- Warschauer, M. (2012). The digital divide and social inclusion. *Americas Quarterly*.
- Wing, J. M. (2010). Computational Thinking: What and Why? Thelink - The Magaizne of the Varnege Mello University School of Computer Science, (March 2006), 1–6. Retrieved from <http://www.cs.cmu.edu/link/research-notebook-computational-thinking-what-and-why>

German Federal Ministry for Labour and
Social Affairs

WHITE PAPER WORK 4.0

Excerpt for the ILO Workshop on “Work
and Society”

21-22 September, Turin

CULTURAL CHANGE

The transformation of the economy and society is being accompanied by changes in lifestyles and values. Important issues in this context include individualisation, changed visions of family life and social cohesion, greater diversity in life plans and preferences regarding work, and new consumer attitudes.

FAMILY MODELS AND TIME NEEDS ARE CHANGING

The transformation of social values and relationships is also reflected in a more partnership-based **conception of gender roles**. Due to the steady rise in female labour force participation, both partners now work in more than half of all couple households, although women often

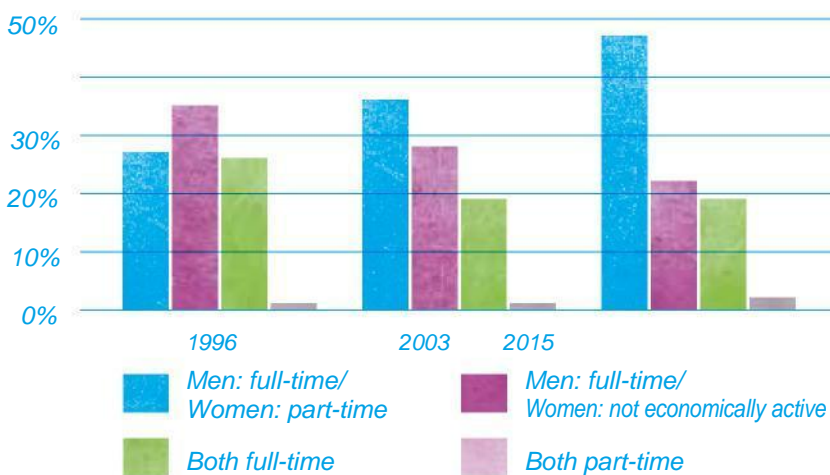
---»

---»

Work and Society

only work part-time.³¹ Traditional single-income households do still exist. However, the new normal increasingly also includes households with one and a half to two incomes, and working single parents. »»

Breakdown of labour market participation in couple families



Source: Federal Statistical Office, special analysis from the 2015 Microcensus.

In the course of these developments, individuals' **preferences regarding their own work** are also changing. Women and men want to work on a more equal basis, share family responsibilities, and also be able to pursue personal interests. The ties between generations have also changed. When parents and grandparents live in different places, there are huge differences in the extent to which the grandparents are available as a "flexibility buffer" in terms of childcare. At the same time, more children are living at home for longer, and in some cases they are being financially supported by their parents until well into adulthood. »»

The traditional family model centred around a (usually) male sole breadwinner is becoming less and less common. Ever more young couples want to split the time they spend on family responsibilities and work as equally as possible. «

Bremen Chamber of Labour

---» I would like to have more time for my children in future and be able to organise my working hours flexibly. Developing a suitable strategy for this would be great! «

22 Apr. 2015 via arbeitenviernull.de

Many people find it very challenging to combine work and family commitments in the way they would prefer. This is especially true in life phases with intensive caring commitments, such as when looking after young children or caring for elderly family members. «

Forum for Progressive Family Policy (ZFF)

- - -» *Long-term care is a task for society as a whole which is undertaken by an individual. «*

dbb – German Civil Service Federation

- - -» *Working time sovereignty for employees is still very limited, despite the introduction of greater flexibility. «*

German Trade Union Confederation (DGB)

- - -» *At the same time, workers' need for greater time sovereignty is rising. «*

Gesamtmittel – Federation of German Employers' Associations in the Metal and Electrical Engineering Industries

For the **stretched generation** of parents aged 30 to 55, who make up almost a third of workers, time is a scarce resource as they do their best to combine professional engagement and advancement, bringing up children and the pursuit of personal interests.³² This time crunch, which is exacerbated further in the absence of a care infrastructure, is likely to intensify in an ageing society if more and more workers face the additional responsibility of caring for infirm family members, on top of their work and parental responsibilities.^{33,34} Matters which have “traditionally” been of particular importance for workers, such as security and pay, are therefore being joined by the desire for greater **time sovereignty**^G. «

GREATER DIVERSITY IN PREFERENCES REGARDING WORK

The “discovery” of one new generation after another (such as Generations “X” and “Y”) points to a shift in values. Yet such generalised descriptions of different generations tend to overlook constants: for example, a secure and well-paid job remains the most important aspect of “good work” for today's new entrants to the labour market.³⁵

It seems more useful to look at the diversity in workers' preferences regarding work and the welfare state as a whole. The Federal Ministry of Labour and Social Affairs has therefore funded an unprecedented study, which draws on IT-based qualitative interviews with a representative sample of 1200 people in Germany. **The study “Value Systems in the Context of Work 4.0”** (*Wertewelten Arbeiten 4.0*) highlights the diversity in the reality of workers' lives and their preferences.³⁶

5 To date, it is predominantly women who limit their employment in favour of unpaid work. The Federal Statistical Office's 2012/2013 Time Use Survey shows both a gender imbalance in the distribution of paid and unpaid work and a higher overall burden on households with children. Unpaid work accounts for almost twice as high a share of women's working time as paid work. By contrast, 62 per cent of men's working time consists of paid work, while unpaid work accounts for just 38 per cent. (Federal Statistical Office (Destatis) 2015a).

6 Bauer et al. 2012.

7 Four out of five people in need of care are cared for at home (Federal Statistical Office (Destatis) 2015b). The rising proportion of people entering higher education means that graduates, in particular, are entering the labour market later in life. It is therefore increasingly common for workers to have to not only begin and advance their careers and start a family simultaneously or within a short space of time, but also to undertake advanced training and care for relatives in parallel.

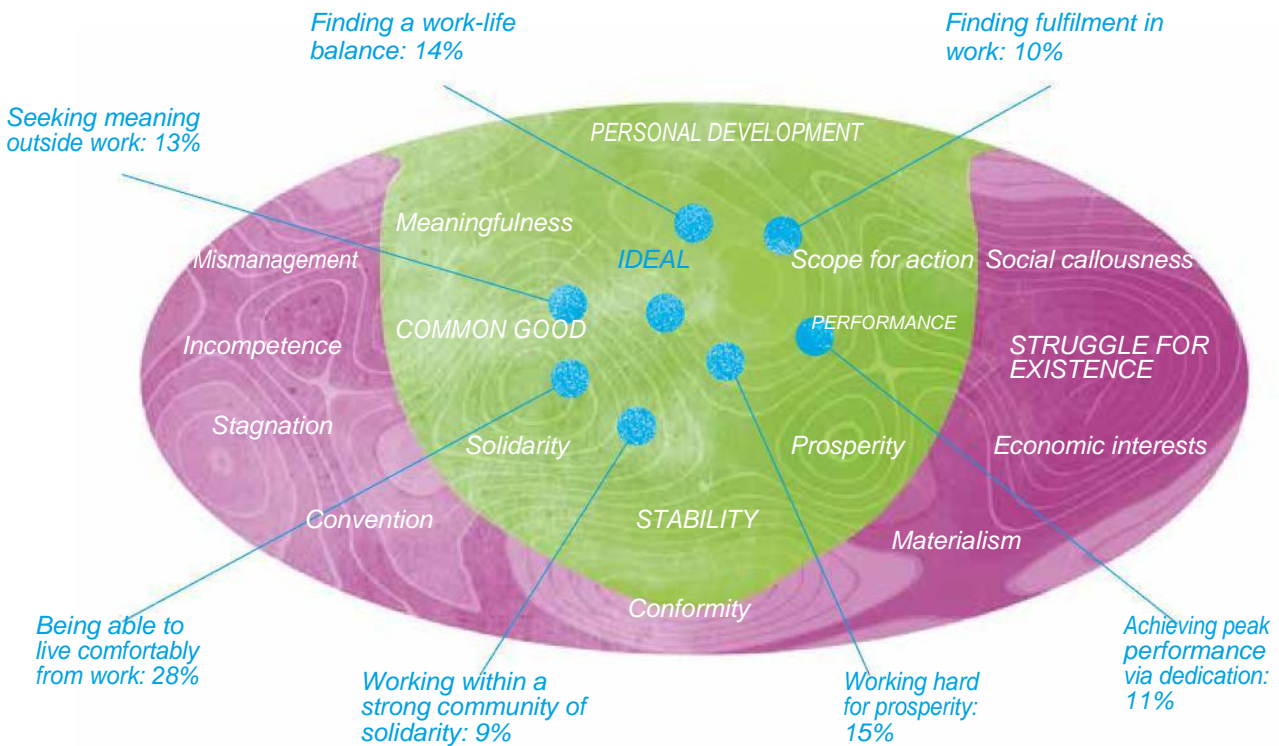
8 Federal Ministry of Labour and Social Affairs (BMAS) 2015a.

9 Federal Ministry of Labour and Social Affairs (BMAS)/Nextpractice 2016.

-->

Work and Society

Preferences regarding work: seven value systems



Source: Federal Ministry of Labour and Social Affairs (BMAS)/Nextpractice 2016

The study identifies seven typical value systems with discrete **perspectives on the subject of work**. Sociodemographic characteristics such as age, income or level of educational attainment can only partly explain the respondents' adherence to certain value systems – unlike in the case of traditional social environments in earlier times. In terms of the attitudes and positions which guide people's actions, these value systems are in some cases diametrically opposed (see box). Differences exist not just in people's perceptions of the status quo, but also regarding their views on shaping Work 4.0. What some regard as a desirable future is a threatening scenario for others. »

For me, work in the future means combining work and the personal sphere rather than separating them, and benefiting from this, e.g. coming up with ideas while cycling. «

21 Apr. 2015 via arbeitenviemull.de



SEVEN VALUE SYSTEMS

Being able to live comfortably from work (28 per cent of respondents)

People who share this value system primarily want to be able to lead a normal life in a secure community without material worries. They see work as part of this, but in some cases they are finding that it takes up so much of their lives that little time remains for personal matters. Being able to plan ahead is a key positive value for them, while they regard a faster pace of work and growing performance pressure as negative. They expect the state to provide a safety net for all those who contribute to society.

Working within a strong community of solidarity (9 per cent)

For people with this value system, an ideal world of work is characterised by mutual loyalty, appreciation for their performance, and participation in a community of solidarity. They find developments within society worrying in some respects. They have the feeling that more and more people are falling through the cracks and are no longer finding a place in society. They long for the days when, as they see it, companies cared about the wellbeing of their staff, there was work for all, and people stood by each other even in hard times. They believe the state and companies have a duty to return to focusing more on the wellbeing of all.

Working hard for prosperity (15 per cent)

A lifetime of hard work is regarded as a given by people who adhere to this value system. They believe that everyone who really works hard can succeed, although they are noticing that this is no longer as simple as it once was. And in their view, those who have made it are entitled to treat themselves to a little luxury. They expect the social partners to ensure that Germany remains strong in economic terms and that high achievers continue to have a home here. They expect the state to create conditions which ensure that everyone who works hard can achieve a certain level of prosperity. At the moment, however, they feel they are not experiencing a sufficient level of success and recognition despite working very hard.

Achieving peak performance via dedication (11 per cent)

For people with this value system, the ideal vision of work is characterised by responsibility, efficiency and striving to perform their best. They regard the rapid pace of developments in the economy and society, including those resulting from digitalisation, as a welcome challenge rather than stressful. In their view, it is up to every individual to get to grips with the new challenges, for example through lifelong learning. They expect the state to create conditions which enable individuals to deal with the individual challenges of a changing world of work. They regard these conditions as mostly being in place, as their experience has been that particular dedication leads to personal success.

Work and Society

Finding fulfilment in work (10 per cent)

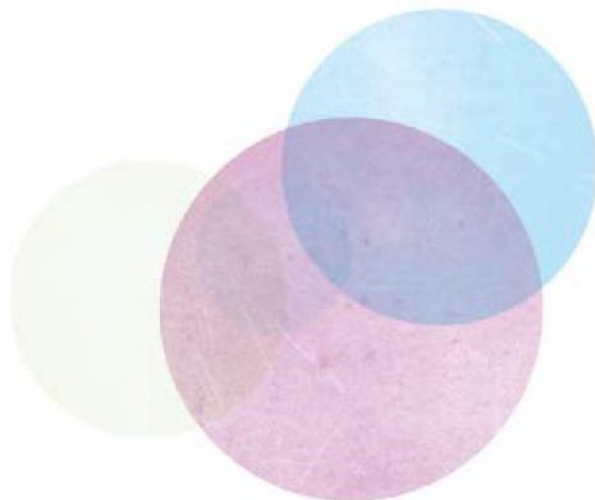
The ideal work situation for people with this value system is characterised by opportunities for them to constantly reinvent themselves and have many exciting experiences. They see themselves as part of a network of likeminded people, one which stretches beyond Germany. For them, there is no contradiction between personal fulfilment and performance and efficiency. They expect the state and employers to support people on their individual paths, for example through flexibility in working time and location, and comprehensive childcare.

Finding a work-life balance (14 per cent)

For people with this value system, work is ideal if it can be balanced with family commitments, personal fulfilment and involvement in shaping society. At the same time, they expect every individual to show a certain degree of personal responsibility. In their view, society's purpose is to jointly create good conditions for all. The business and working world should adapt to people's needs, not vice versa. They are not willing to sacrifice their principles for material security. They therefore expect the state to provide opportunities for effective involvement in shaping society.

Seeking meaning outside work (13 per cent)

The people with this value system do not regard paid employment as the only possible meaningful activity. They measure an activity's value by its contribution to the common good. They often regard charitable work as more meaningful than work carried out primarily for financial reasons. They expect the state to guarantee all citizens an adequate amount to live on, irrespective of what income they earn in the labour market.



---» *Greater self-determination in the context of work means shaping working conditions and giving people options so as to allow the emergence of life prospects with self-determined and selectable planning horizons.* «

*Association of Staff Councils of the
Supreme Federal Authorities*

---» *Cohesion in communities and in society as a whole is not ensured solely by economic goods; a shared stake in cultural goods also plays a part, including a shared experience, perception and organisation of time.* «

German Bishops' Office

For some respondents, digitalisation offers the possibility of greater self-determination in the context of work, while others see a risk of further work intensification or job losses. The picture is similar when it comes to the buzzword "flexibility". What is especially worrying is the contradictory views held about the world of work from a historical perspective: almost half of workers are sceptical or pessimistic about the future, believing that their ideal vision of work came closest to reality in the post-war decades. For the optimists, the opposite is true. However, there are also shared beliefs: the majority are opposed to precarious employment which violates the principle of fair pay, and to high levels of work intensification ^G. There is a strong desire for social cohesion and participation. «

The study shows that today there is less of a homogenous "**workers' perspective**" than ever, just as there has never been a single "**employers' perspective**". People in Germany have in some respects contradictory and in some respects shared visions of an ideal working environment and working life.



For example, temporary access to and time-limited use of products (e.g. cars) and data (e.g. music) seem to be gaining ground compared to traditional ownership. The desire to lead more sustainable lives and engage in more sustainable consumption is also inspiring a new

sharing economy ^G. At the same time, customers expect their needs to be satisfied more quickly in the “on-demand economy”. Both sides of the coin are examined in greater depth in [Chapter 2.2](#). As **prosumers** ^G or as “suppliers” of data and self-generated content, customers and users are active participants in the process of innovation and value creation. »

The implications for society are mixed, with positive prospects in terms of environmental sustainability and economic growth on the one hand, and growing **pressure on labour standards and pay conditions** and a potential increase in low-skilled work in the service sector on the other. The organisation of the work of the future therefore cannot be separated from the question of what demands we will and should make as consumers. » [Work and Society](#)

---»

CULTURAL CHANGE AND NEW CONSUMER NEEDS

The new possibilities of **digitalisation** and the changes in our **culture and everyday life** are **interrelated**. Widespread access to information, communication via social networks, the influence of algorithms ^G on our thoughts and actions – all of this will fundamentally change our society. It is not yet possible to say with any certainty whether a “digital culture”³⁷ is emerging and to what extent it, in turn, will transform the world of work.

What is already clear is that **changes in consumer habits** are having an impact on working life. E-commerce has radically changed many sectors. As customers, we shape the business and working world by our appetite and demand for services which others provide. In some respects, changes in social structures and values are giving rise to entirely new consumer habits and needs, which can in turn be satisfied better or in new ways by the digital economy.

The line between producers and

consumers is becoming blurred in the case of prosumers, for example if a consumer uses software to design an individual piece of furniture which is then produced in a digital factory. «

Bremen Chamber of Labour

---» Services in the logistics and distance selling sector are in demand around the clock – driven by consumers' desire to be able to purchase items

24 hours a day with the click of a mouse, and ideally to receive their purchases immediately by express delivery; driven by the competition between individual online retailers to achieve the highest turnover. «

Social Organisation Germany (SoVD)

Transitional competence: A framework for cognitive competence as critical dimension to pro-silient socio-economic participation.

Mostert, M. (PhD)

Abstract

The conceptualization of future of work is a catalyst for consideration of the future of competence. This article examines the set of cognitive competencies required for continued participation in the emerging corporate reality, which included a rapid foreshortening of horizons for decision-making. The proposed competencies are applicable at individual, community, organisational and governmental levels. They are posited as critical to enabling all four levels to navigate the risk and opportunity of high speed, high impact realities. The nomenclature of 'cognition' at these levels is positioned here predominantly in the intellectual function of high quality decision-making. The temporal foreshortening of windows of opportunity does not imply the disappearance of long-range implications. Concepts of sustainability, while potentially laudable, may simultaneously contain the risk of protectionism. Therefore cognitive development is offered as one avenue for enhancing individual and organisational agility beyond tenacity and resilience.

A set of competencies that may aid transition to a new epoch of work appears below.

- Imagination-Anticipation-Creativity-Innovation-Agility value chain creation
- Purpose-driven Curiosity & LLL, incl. meta-learning (cf. shift in university age profile), purpose to have a sense of direction, curiosity because of constant chance, incl. sensor network design
- Alternate (non-mechano) VUCA-embracing cognitive processing: Systemic, creative, adaptive & computational thinking & Contextual intelligence, JIT presentation, etc. incl. deep generalism; Divergence & Trans-disciplinarity (beyond multi-) and solution-orientation
- Competitive Enterprise, Intra- & Entrepreneurship (because competition will increase, even relative to collaboration, driven mainly by demographics),
- Experience Transcendence (incl. suspension of judgement & disbelief, change resilience & adaptability, role model transcendence, e.g. retirement, age appropriateness)

- Discernment, especially vis-a-vis the noise-to-signal ratio, trend transcendence, new media literacy, tacit knowledge acquisition
- Autodidactics, incl. digital dietician (appositional/pertinence editing);
- Social Intelligence, notably Empathic Collaboration & Design, including Diversity & Conflict Management, resilience (pro-silience)/failure tolerance/pursuit, persuasion & influence, crowd navigation, incl. sourcing & participation (cf. 9)
- Evolutionary ecologist, incl. conceptual, organisational, personal & institutional ecological integration due to rate of change
- Future funding, incl. failure fund, life-stage/transition education fund, geographic relocation fund, ERP fund, reflection fund (e.g. gap years/months/minutes), technology upgrade fund (incl. greenification, implants), crowd equity management, unique exposure insurance, etc.

Position paper on Innovation, work, and social revolution

Pietro Terna,

The New York Times of February 26, 1928, published on eight columns, at p.129, the famous "March of the Machine Makes Idle Hands" article, with the subtitle "Prevalence of Unemployment with Greatly Increased Industrial Output Points to the Influence of Labor-Saving Device as an Underlying Cause."¹

Recently, the Economist (2016) has resumed that title by opening a series of eight articles: the title of the first article, "March of the Machines," is preceded by the specification "Artificial Intelligence." Two words that well clarify the difference between the situation in 1928 and in our days.

The second article in the series, entitled "The return of the machinery question," echoes the title of Chapter 31 of "On Machinery" by Ricardo (1821) and also that of Marx's "The Fragment on Machines" in the Grundrisse.²

Machines, labor, and artificial intelligence

Quoting Ricardo (1821), we can easily underline the key point:

(rif.31.25) The statements which I have made will not, I hope, lead to the inference that machinery should not be encouraged. To elucidate the principle, I have been supposing, that improved machinery is suddenly discovered, and extensively used; but the truth is, that these discoveries are gradual, and rather operate in determining the employment of the capital which is saved and accumulated, than in diverting capital from its actual employment.

In the perspective of labor, the problem lies in (i) the extreme acceleration of the revolution in production and (ii) in the quality of change, now with the intelligence of the machines.

Quoting again the Economist series, "After many false starts, artificial intelligence has taken off."

We were close to this revolution, but we were waiting for more powerful and less expensive computers to have the possibility of a paradigm shift: switching from teaching to the machine what to do, to teach it how to learn! In technical terms, the transition to machine learning and especially

¹ <https://goo.gl/HfGnyG>

² The *Grundrisse der Kritik der politischen Ökonomie* or *Fundamentals of Political Economy Criticism* were unpublished until 1939 (in Moskow); *The Fragment on Machines* is at <http://thenewobjectivity.com/pdf/marx.pdf>

to that part of automatic learning based on artificial neural networks, with the name of deep learning.

For the specialist in the field, this is not true artificial intelligence; maybe they are right, but the question goes beyond the subject of this note. New learning machines can replace workers, especially because they can deal with very complex problems, anyway showing intelligence.

To get a measure, though very rough, of the phenomenon, see Figures 1 and 2. In the first, we find the installations of industrial robots in the three-year period 2013-2015. The car is overcoming the crisis by installing over 250,000 robots, a huge figure.

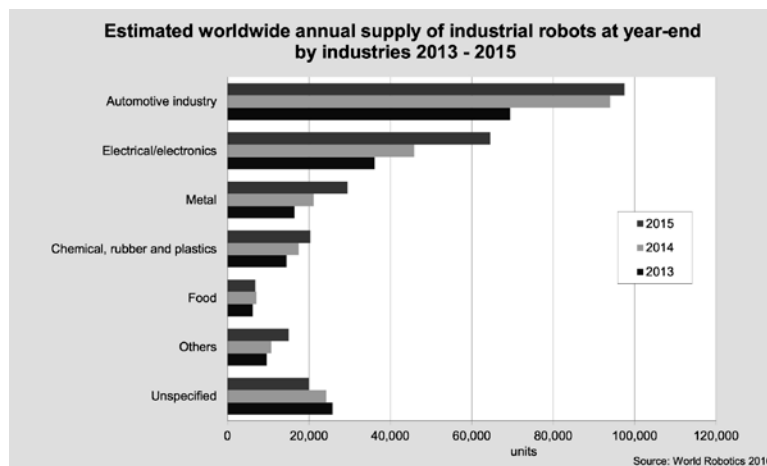


Figure 1 – Robot installations per year. Source: International Federation of Robotics, https://ifr.org/img/uploads/Executive_Summary_WR_Industrial_Robots_20161.pdf, Executive Summary World Robotics 2016 Industrial Robots.

Figure 2 gives us a projection of the phenomenon until 2019. Considering the three areas, in the final year, about 400 thousand industrial robots will be installed, mainly in Asia.

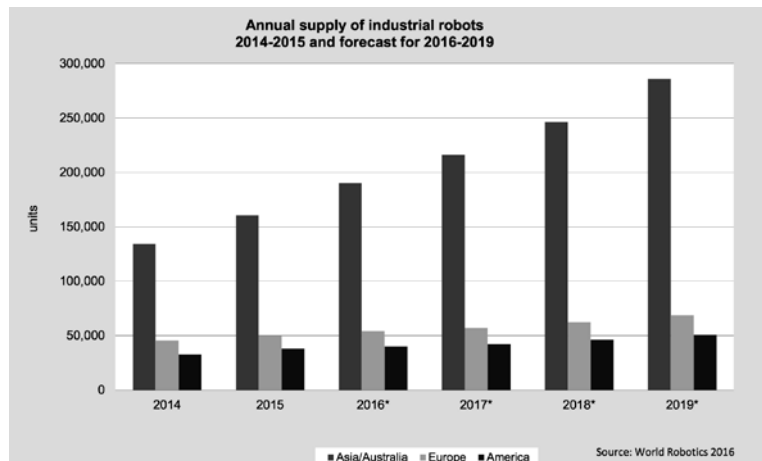


Figure 2 – Production of industrial robots. Source: International Federation of Robotics, https://ifr.org/img/uploads/Executive_Summary_WR_Industrial_Robots_20161.pdf, Executive Summary World Robotics 2016 Industrial Robots.

Observing the pace of the change

The development of production worldwide has considerably limited the perception of the acceleration of the ongoing change. This consideration has been true mainly until the arrival of the crisis, in 2008.

In Brynjolfsson and McAfee (2014), respectively director and co-director of the MIT Initiative on Digital Economy (<http://ide.mit.edu>), we find material of great interest on the ongoing change. The problem of concentration of wealth in a few hands is not new: it is now at a growing stage, but it is not negative in itself until even the less well-off people perceive the improvement of their condition. Instead, when people who want full-time jobs find it only part-time or do not find it at all, it is confirmed that while the benefits of new technologies are real, they are not enough to offset the growing gap between personal situations. A trend that is only partially due to the recession and that, above all, seems destined to be a not transient phenomenon.

Paul Krugman's reflection (2017) shows other aspect of the problem. In one of the writings that he publishes on his blog linked to the New York Times, he plays with the title *Main in America*:

I argued then that menial work dealing with the physical world – gardeners, maids, nurses – would survive even as quite a few jobs that used to require college disappeared. As it turns out, big data has led to more progress in something that looks like artificial intelligence than I expected — self-driving cars are much closer to reality than I would have thought, and maybe gardening robots and post-Roomba robot cleaners will follow. Still, the point about the relative displacement of cognitive versus manual jobs seems to stand.

The accelerated process can so produce unexpected effects.

In a changing society

So, the machines in place of the workers, in new and surprising fields. And the job?

Do we need to ask: are we inevitably condemned to work?

Everything is going to change, but the phases where change accelerates are the hardest for people. If the machines replace an ungrateful and tedious job, it is certainly a good thing. The replaced person, however, loses the job; he/she can find a better one. But if at the same time there are many persons who lose their jobs and very few who find a new one, they need reliable forms of social protection. If the framework is that there will always be less work, we need a complete rethinking of the organization of the society, making the transition periods less traumatic.

What to do?

Taxing robots, as proposed by Microsoft founder Bill Gates (various news reports at the beginning of 2017 attribute this proposal to him) is a diminutive way to deal with the problem, perhaps a temporary solution, certainly not a structural choice.

For an economist, taxing robots is equivalent to taxing capital, which is entirely legitimate, but we are now in a perspective of a true Copernican revolution. We need to imagine something of completely different.

Psychologists are horrified when an economist states shortly the work will be for a few and at a very different pace from the current ones. Work as a source of social relationships and personal satisfaction is deeply interlaced to the design of life that almost everyone considers positive and natural. I do no doubt the need for social relations, but do we need to work for that?

An extreme perspective (but, maybe, not so extreme)

How will I have an income if I do not work, but will I still have to buy the necessary goods? At the center of the answer, we have another question: who will produce the necessary goods? If the robots will produce nearly anything and robots will also produce new robots, who will be their owner and so the owner of the resulting goods? It is now challenging to imagine this transformation, and we see in perspective an infinite sequence of obstacles generated by the various transition phases.

Science must be aware that it will not be possible to evade that problem, trying to reconcile the tensions with remedies inspired by welfare, acting on the income of the citizenship. It is necessary to create new foundations to regulate the participation in collective life, given that most of the work will be done by machines and computers. And it will not be easy to decide who will have to give them the orders.

The central question is exactly the last one: to understand who will give the orders the robots (and who will be their owner, which is a non-irrelevant corollary). If you deal with this point, everything else becomes secondary. If robots produce robots and they are collective property, the goods and the services produced in that way will be extraordinarily abounding. The prices will tend to disappear, the money will no longer be necessary. Eliminating the money and the accounts, many other jobs, possibly survived to robots, will no longer have reason to exist.

To imagine the world without money can seem close to extravagance or madness: it is instead the design of a new society that has overcome both the scarcity and the related conflicts, and it is more protective and respectful of people.

Objection: without prices and without the profits of the distribution and production network, how to determine what to produce and for whom? The enormous difficulty of economic planning has led to the collapse of the Soviet Union. The computing systems and the data available were inadequate and paradoxically it was easier to plan Sputnik's orbit than to calculate how many socks to produce for every area in an immense country. Now, with super-sophisticated computing facilities and with big-data, Amazon and its (few) competitors know how to continuously restock the decentralized warehouses, minimizing stocks, but assuring deliveries mostly in twenty-four hours.

Certainly, the leap to the real end of scarcity, such as that of the food in the world, has to be gigantic, but thanks to production acceleration and balanced demography, we will see effects that today seem impossible. As an example, the situation in Africa is changing, thanks to the mobile phones that made it possible to create a connection infrastructure, which is indispensable as the first step in an organized economy. Via mobile phones, in few years the results are the same obtained in more developed countries with two centuries of complex changes. With robots and artificial intelligence, all changes can so be just as quick.

The full change can require twenty or fifty years or so; the apparently negative effect of the intelligent machines on society, with over-productions and missing work places, is manifesting its effects now, in the early part of the 21st century. Temporary solutions are related to income taxation formulas for people under a certain level of income, but we cannot handle this transition if we do not have clear in mind the long-term consequences pointed out here.

References

Brynjolfsson, E. and McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. New York: W.W.Norton & Co.

Ricardo, D. (1821). *On the Principles of Political Economy and Taxation*. London: John Murray, third edition (first edition: 1817). Online at <http://www.econlib.org/library/Ricardo/ricP.html>

Krugman, P. (2017). *Maid In America*. Online at <https://krugman.blogs.nytimes.com/2017/02/24/maid-in-america/>

Notes for the Meeting of Experts on Work and Society³

Tatiana Razumova, Dr.

Nowadays the situation in the world of work is developing with respect to such key factors, forming the basis for understanding the future of work as inclusiveness, stability, work-life balance, accessibility, and productivity. There exists a well-founded notion that the vision of the future of work should be configured on the basis of the following principles: integrated approach, consensuality, and multistage development.

Freedom plays an important role in labour humanization. The problem of freedom and its boundaries is aggravated by the emergence of the phenomenon of the working poor and the occurrence of new economic slavery, including the shadow economy.

Science and technology promote a total rationalization of all aspects of economic life, standardization of human behaviour, and extreme formalization of decision making. This process results in an impersonalization and loss of human identity with respect to labour relations. In contrast, only a person can have true freedom. Additionally, technology becomes an independent living environment, and hence transforms and sometimes distorts the perception of the world by an individual while making it grotesque in the age of virtual reality.

Currently, when framing theoretical concepts many researchers proceed from the economic man or homo economicus model, i.e. a rational, knowledgeable, and egocentric fellow creature, who makes his visions of profit come true without love or hate and maintains only equivalent value-based relations with other people. It is a long way to go from the economic man (homo economicus) to the doer and innovator (homo creativus), and this path will comprise multiple stages.

The basic concepts of labour philosophy provide for taking a fresh look at the employment and labour market conditions and development prospects in the Russian Federation and ensure a new aspect for evaluation of the current progress and future policy priorities with respect to the labour market and employment sector. As a rule, despite the fact that the philosophical aspect of labour is the basis of labour and labour relations development, it is not considered directly in labour market policy formulation, though it serves as a background for working process analysis. Addressing the philosophical basis of labour provides new opportunities for profound analysis and can ensure greater efficiency of employment and labour market policy programmes aimed at providing equal job placement opportunities, increasing labour productivity, ensuring social integration and protection, and reducing social inequality. The elaboration and implementation of efficient

³ The text is based on the report “The Future of Work in the Russian Federation: Humanization, Quality Jobs, and Efficient Institutions” prepared by ILO experts Yelena Zotova, Leonid Tutov and Tatiana Razumova

employment and labour-market development programmes will result in further sustainable and inclusive economic growth.

The philosophical understanding of labour provides for setting the primary goals and specifying the main problems as related to the Future of Work initiative in Russia, taking into account the social-development targets of the Russian Federation.

The main goal is the humanization of the world of work in a broad sense, which suggests an opportunity for personal fulfilment and provides for taking social-policy measures into consideration when working out economic and financial development strategies. To attain this goal, it is necessary to address the following:

- (i) high-level job creation;
- (ii) increase labour-force quality; change labour-force composition; and promote the development of an up-to-date national qualifications system in Russia;
- (iii) harmonization of the legal base of the world of work in compliance with present-day economic relations; legalization of employment;
- (iv) provision of a decent working environment, including the encouragement of employers with respect to an improvement of labour conditions;
- (v) reduce the number of off-the-books employees and encourage them to move to the formal sector of economy;
- (vi) development of a compulsory social insurance system; and
- (vii) development of social partnership.

These issues can be addressed successfully only if labour is considered as a uniting principle for the nature-person-culture triad, which tends to manifest in certain interconnected forms. In the triad, the relationship between the person and technology holds a special position and should be regarded in multiple ways. Not only does the machine oppress the human spirit, it sets the person free from dependence on the forces of nature. At the same time, the technology is merely a means and has no value in and of itself. It is not regarded as an independent entity. The person it serves defines its meaning.

Labour and free work come together, and hence they should not be separated from each other in any analysis. First of all, there is a sufficiently flexible and historically ever-changing relationship between them. Secondly, under specific conditions, they both might have strong, clear, smooth and barely visible boundaries. Even very monotonous work could become creative, when properly organized.

The future of work in Russia appears to be a part of the learning economy in which knowledge serves as the basis for development. The doer and innovator (*homo creativus*) is the linchpin of the economy of knowledge, and he makes the pursuance of universal human values his target function. *Homo creativus* makes decisions, proceeding not only from his own interests, but also relying on the principles of social partnership.

The main features of the future of work in Russia are interconnected: the humanization of labour, quality workplaces, and full-fledged institutions.

The decent labour data depend on a number of components – general economic situation; social and economic policy priorities; availability of full-fledged institutions; demographic situation; natural and man-made factors, including climate change; new pieces of technology. The role of the components should be considered as a cohesive whole, because it is difficult to specify the influence of a separate component on this or that decent labour datum, and, in addition, the components are interdependent.

The Russian labour market will develop in terms of being able to provide employment for all who are eager to work; high labour productivity; decent remuneration and social protection. The minimum wage is expected to increase to the subsistence minimum of the working-age population, and there are other measures aimed at reducing the differentiation in labour remuneration within the framework of collective bargaining.

The future of work in Russia is based on the development of three main components: the humanization of labour; quality job creation; and full-fledged institutions. The humanization of labour is a key feature that distinguishes the Russian economy. Russia plans to continue to strengthen policy focused on ensuring equal labour rights for all – men and women, youths and older persons, persons with disabilities, migrants, etc.

The creation of quality jobs and the expansion of job-placement opportunities will step up labour-market efficiency. The establishment of full-fledged labour-market institutions on a tripartite basis is designed to provide targeted assistance to those who are searching for jobs and to ensure support for cooperation between employees and employers. Employment promotion and the provision of opportunities for professional training and retraining will become an additional guarantee of stable employment and the progressive development of labour relations.

The labour-market development policies pursued by the Russian Federation are aimed not only at the provision of full-time employment, but at the eradication of poverty and inequality and the achievement of sustainable and inclusive economic growth.

To address the problems related to the provision of decent jobs for citizens, full-time employment, and the elimination of structural unemployment, it is required not only to develop vacancy tracking,

a job-search database, as well as the skills of potential job applicants, it is also necessary to ensure that all Government policies (beginning with the monetary and financial system, and the responsibility of the State and businesses for job creation, and ending with wage adjustment and employment control) serve socially desirable purposes, and, hence, to avoid serious discrepancies in the labour market. Furthermore, governmental activities are of vital importance in terms of ensuring enough funds for the vocational- training system and personnel-retraining programmes while complying not only with the requirements of businesses, but suiting the interests of society as a whole society, as well. On top of that, the same factors determine the development of science, its integration with production facilities and educational systems, and ensure, in turn, an increase in innovation activity and labour productivity. They also provide for blocking ineffective public and private expenditures.

Russia is characterized by the high level of economic activity of its working-age population (except for youths receiving vocational training) and a relatively low rate of general and registered unemployment, as compared to other countries. Flexible, distance, and part-time employment are developing as a mode of expansion of opportunities for all, and especially for disadvantaged groups in the labour market. The all-important factors providing support for citizens in the labour market are the availability of general and vocational education and the absence of discrimination (gender-based, racial or nationality-based). The current stage of development is characterized by a total elimination of child and forced labour.

Humanization of the world of work in Russia has a solid regulatory framework. At all stages of its development Russian labour law has preserved a significant number of legal standards as elements of legal succession that had been first set forth by Soviet labour law – an exhaustive list of grounds for termination of a labour contract on the initiative of the employer, annual paid leave, limitations on the number of working hours and overtime work, heightened requirements to protect minors, women, etc.

Unlike many other countries, including highly developed States where gender inequality is still observed in all spheres of socioeconomic life, the Russian Federation has preserved and continues to augment considerably the long-standing traditions of extensive and equal availability of general and vocational education, employment, and sociopolitical activities for women.

The employment status of women, evaluated on the basis of the Decent Work Indicators, is characterized by factors bearing witness to the fact that, although not as high as that of men, the women's employment rate is high (60.1 per cent in 2015. At the same time, the women's unemployment rate is lower than that of men (in 2015 it was 5.3 per cent against 5.8 per cent among men). It is both significant and unusual, in terms of the global trend, that women's participation in off-the-books employment is lower than that of men. This proves that jobs are indeed available for women in the labour market. However, among women, the number of employees working over 48 hours a week is substantially lower than among men. Thus, the status of Russian women in the world

of work makes it possible to say that significant gender equality exists, and the relevant increase can be traced, for instance, with respect to the gender pay-gap index (36.8 per cent in 2001 and 24.4 per cent in 2015).

Women comprise 80 per cent of Government employees and hold key positions in the Parliament, ministries and agencies, local self-government authorities, political parties, and social organizations. Women actively engage in running Russian businesses. By 2014, about 28 per cent of Russian enterprises were owned by women. Furthermore, 34 per cent of women act as employers.

Challenges to Pay Attention to and Address:

- (i) The persistent gender pay gap;
- (ii) Women experience difficulties in building their careers due to the heavier housekeeping burden that they bear;
- (iii) Women encounter difficulties when attempting to enter the labour market after a long break in connection with childbirth and the rearing of children.

In order to improve women's employment, the Government implements programmes aimed at creating new jobs. A considerable wage rise has been observed in the public sector, which is the main source of employment for women (healthcare, education, culture, social services). The development of vocational education and the supplementary vocational education of women while caring for children and on parental leave (until the child is age three) supports the competitive abilities of women in the labour market.

To promote women's entrepreneurship, the local authorities implement measures to devise additional incentives and preferences for businesswomen with family responsibilities. In particular, new mothers enjoy opportunities to participate in entrepreneurial activity in the field of pre-school education and develop, for instance, private kindergartens, family groups, and social and play rooms, etc.

In order to level up women's employment in the constituent entities of the Russian Federation, measures are being taken to develop flexible employment, including remote, home-based, and flexitime jobs. Flexible employment expands job-placement opportunities for women, combining the responsibilities for bringing up young children with labour activity.

The implementation of scheduled programmes, monitoring of statutory compliance in the world of work, proliferation of flexible terms of employment, support of competitive abilities of women in the labour market, development of daycare centres and the improvement of quality of services provided by pre-school facilities are aimed at promoting decent employment for women and ensuring work-life balance.

Some Notes on Technology and its impact on the world of work: A view from India

Prabhu Prasad Mohapatra

1. The world of work is in a churn. A cluster of digitally driven technologies ranging from automation, Robotics, to Artificial intelligence and Internet of Things collectively known sometimes as the Industrial Revolution 4.0 or the “Second Machine Age” is seen as heralding a profound transformation in the world of work. Technology and its relation to society has long been a subject that has engaged the attention of economists, philosophers and creative artists at least since the beginning of Industrial Revolution in the late 18th century. Technological change and mechanization of production has alternately evoked fear and fascination. One has to think of the remarkable work of Mary Wollstonecraft which gave us the searing image of Frankenstein a mechanical monster that devoured its creator. On the other hand we have the powerful ode to machine written by Andrew Ure whom Karl Marx called the “Pindar of the Factory system”. Even today the world may be divided into “techno optimists” and the “techno pessimists”. Klaus Schwab and Stephen Hawking may be invoked to represent this divide.

2. There is however a specific temporal context to this churn- not only in the nominal characterisation of the technological revolution (Version 4.0 ,second machine age etc) but also in the way the change has emerged at the cusp of a shift in the paradigm of economic /developmental discourse triggered by the crisis of contemporary capitalism. It would seem that the long wave associated with globalisation, liberalisation and privatisation since the 1980s alternatively known as “neo liberal” phase of capitalism (Harvey) which had transformed the earlier notions of work and relation of work and society is itself facing a serious challenge from contemporary technology driven transformation.

3. The Great recession triggered by the financial crisis of 2008 provides the context in which the meaning of work and relation of work and society is being profoundly questioned. The current technological transformation is seen to have a far reaching impact not only in the advanced countries but also in the developing countries. The models of development of the last three decades (the neo liberal growth paradigm) based on expanding merchandise trade, global outsourcing of manufacture from advanced countries to developing world, rising exports and consequent shift from low productivity agriculture to manufacturing and subsequently to services(China model) seems to have hit a wall .Slowdown of global growth and back lash against globalisation and rising xenophobia and “economic nationalism” has been aggravated by the increasing possibility of “insourcing” i.e shift of manufacturing based now on new technology and automation to the advanced countries.

4. It may be important therefore to outline the key issues posed by the specific challenge of technological transformations in the present scenario in relation to both temporal and spatial contexts to see how technology impacts meaning of work and work relations i.e quantitative and qualitative aspects of work. To anticipate some of the later discussion the *key issues are* a) Nature and spread of contemporary Technological change i.e degree to which it is historically “unprecedented” and how evenly or unevenly it has spread across the globe e.g “digital divide or digital exclusion” b) *Question of automation and job loss* and its varying impact in the developed and developing countries c) *Issues of rising income and wage inequality* associated with new technology and its social and political *consequences* d) Changes in dominant models of work relation, specially the dismantling of the “employment contract”- and social security provisions associated with it.

5. *To take up the temporal aspects first:* There are broadly two ways in which history is invoked in the discourse on technological transformation and its impact on work and work relations. First It is argued that the nature of contemporary technological change is profoundly different to earlier times. The Fourth Industrial revolution, as it is termed, is so ‘disruptive’ in character that past experiences or history is a poor guide to the future. It is disruptive of existing business models and social and political infrastructure underlying them. Two aspects of this disruptive technology is *usually fore fronted* a) the “Intensive” as opposed “extensive character of *technology*... i.e technology is not merely extending the scale of processes and products that already exists but is fundamentally altering the processes *and production structures*. b) the accelerated and convergent nature of *spread of technology* so it is argued that while it took 119 years for the mechanical spindle and steam engine to be diffused across the world internet has reached the same global level of diffusion in mere 20 year. (World Bank *Digital Dividends*, 2016). However It is useful to recollect that similar arguments about unprecedented technological change had been made in many earlier contexts beginning from the middle of the 19th century in Marx and Engels’s memorable words in the communist manifesto “All that is solid melts into Air” or again during the 1920s during technological reorganisation of production under Fordist assembly line and in the debates on “rationalisation” and its social consequences and again in the 1960s with anxieties about automation in the USA led to the setting up of the Committee It is indeed instructive to locate in the vast Archives of the ILO important documentation of these previous moments of challenges posed by automation. (ILO 1931 and 1964).

6. Another way in which “history” is invoked usually is to allay the fears of “Techno Cassandras” about job loss due to automation. This is best represented in the ways in which Schumpeter’s formula of “Creative Destruction” is marshalled by the Techno Optimists- arguing that job loss in the short run due to mechanisation, rationalisation and automation since the beginning of industrial revolution has been more than compensated by increasing productivity and net creation of new jobs in the long run. Yet this argument remains vulnerable to the critique implicit in the memorable phrase of Keynes “*In the Long run we are all dead*”. The comforting thought of ‘creative destruction’ then singularly evades the question of who pays for the cost of technological transformation. Usually

the groups/generation of workers that lose out are rarely ever compensated by expanding job gains to the future generation and other groups.

7. *The Spatial aspects* of the issue of technology and work in many ways reflects the issues related to temporal dimensions discussed above. First it is asserted that contrary to past experiences of global disparities in conditions of work between the developed /developing countries -the contemporary technological change has the potential to erase these disparities. Contemporary technology therefore allows the developing countries (with adequate policy prescriptions of education, skill upgradation and “governance”) to leapfrog inherited and structural barriers. In a sense this is a version of the “The World is Flat” thesis of Thomas Friedman (which one must admit predates the current technological discourse). A more modest strand of argument while acknowledging differences in adoption and penetration of technology between the developed and developing countries nevertheless argues for gradual erasure of disparities. The problems with these mode of arguments lies in its implicit “Eurocentric” bias and adoption of a framework of “technological “diffusionism.” Europe” or the Global North remains the source of technological dynamism while the developing countries remain receivers of these “new Technologies”. Secondly the persistence of systematic and structural asymmetries in the relations between the Global North and the Global South and differences in the way technology has impacted work relations in these different spatial contexts is not taken into account in these arguments. The example of persistent digital exclusion measured by the rate of “offline “population between Global North and South is pertinent here. Of course this is not to deny changes in global configurations of economic power and shifts in level of asymmetries. The key question being how have these shifts impacted on the changing meaning of work and work relations.

8. Despite these caveats it is important to reiterate that in the discussions on technology and its impact on the world of work certain common features emerge across spatial contexts. First both in the Global North and South the current cluster of technological change seem to have been embedded in a trend of rising wage and income inequality and a radical reversal in the .share of wages and profit in the Gross value added demonstrating the sharp shift in the balance of power between Capital and Labour which has occurred over the last three decades. (OECD, The ILO 2015).This shift seemed to have worsened since the beginning of the present millennium. The decline in labour share across a wide spectrum of national economies has been caused by increasing gap between sharply rising labour productivity and stagnant declining real wages. (ibid). A second common feature is the increasing informalisation of labour relations dismantling of the standard employment relations .While developing countries had always had a larger share of informal labour (defined as absence of employment security and employer given social security) the trend towards precarisation is now visible across the countries of Global North. *The moot question* therefore is how will the contemporary technological change affect these well established trends of inequality and informalisation? Will they aggravate or ameliorate these trends?

9. *Technology and Changing meaning of work: Some illustrations from India*-There is nothing new in the assertion that nature of work and the meaning of work are historically produced i.e they are

context dependent at many levels. Further meaning of work has also been deeply contested by different social groups. Culture, religion and social norms of gender have shaped meanings of work as much as technology, legal regimes and production systems. It is therefore important to chart out different phases in the changing meanings of work in reference to the major variables noted above. I will take the example of India here to situate my arguments. Two issues that I take are the historical transformation in the structure of the workers world.

10. To summarise the present context in India to evaluate meaning of work I would emphasise specificity of three well known transitions. First is the Kuznetsian Structural transformation *i.e the sequential transition of* employment and output share from agriculture to industry and services. Historically this transition had marked economic development of the countries of the Global North. Typically agriculture share in employment share and output share of agriculture has declined drastically, Manufacture taking up the slack and reaching height of nearly 50 percent of employment and output before passing on the lead to services sector. In recent decades East Asian countries (latest being China) seemed to have followed suit. However in comparison Indian structural transformation has been marked by a specific pattern. First there has been what can be called atemporal lag and secondly a distortion in the pattern of transformation. While share of agriculture in output terms has declined drastically mainly since the 1980s attendant decline in employment share in agriculture has lagged behind considerably. Employment share of agriculture between 1901 and 1971 stayed remarkably stable at about 70 percent. The decline began in the 1980s and has considerably accelerated in the last decade touch below 50 percent. Employment in Manufacturing sector on the other hand has stagnated between 12to 15 percent while output share has risen to about 25 percent. The sharpest change has been in services sector which has seen output share rising to 60 percent (close to the Global north figures) while employment share has risen to 27 percent. This distortion in pattern of structural transformation has been termed “premature deindustrialisation” (Sukti Dasgupta and Ajit Sing, 20017, Dani Rodrik 2015) or “service led growth”. In the services Sector too output growth has been disproportionally high from a narrow range of occupations including financial services while the overwhelming bulk of employment in services sector is low end and low wage occupations(domestic service, transportation and urban selfemployment). The scenario is complicated by the simultaneous operation of what has been termed the *Lewis Transition* (Lewis 1954, Ghosh, 2016) *i.e* absolute decline and exit of surplus labour from “ traditional” agriculture sector to non agriculture. The fall in absolute numbers employed in agriculture has been recorded since 2005- on an average 8 million persons exiting agriculture every year. Both these above transitions are taking place at time when India is undergoing a unique “demographic transition” and rapidly emerging as possessing the most youthful population (share of prime age working population) in the world. This demographic transition or “demographic dividend” that India hopes to reap is playing out in the midst of stagnating manufacturing employment and preponderance of low end service sector employment and what has been of great concern for policy makers-“jobless growth” in recent years.

11. What has new Technology and changing meaning of work got to with the “triple transition scenario” I have sketched above? First the “technology” in the form of capital is already apart of the

story of transition. Bulk of India's growth has been through capital and technology deepening rather than through labour deepening. (BCG 2017) This partly explains the "distortions" and "deviations" noted above. It is in this context that the "new" technology associated with digitisation and automation is playing itself out. This has significant consequences for expectations about work and its meaning. Agriculture and ways of work and life associated with it are devalued and increasingly youthful workers have higher expectations about work in Hightech and high end service jobs precisely when automation is threatening to substitute these jobs. Overall decline in labour share in the GNP and yawning gap between labour productivity and real wages tends to "devalorise" the meaning of workers with consequences for deeply held ideas about "dignity" and self worth.

12. This trajectory of increasing redundancy of labour and its social and political implications can be worked out fully if we locate them in the historically constituted segmentation and inequalities and disparities in the labour market in India. I will briefly summarise the issue here pending its fuller elaboration during discussion. The first issue is the *multiple segmentation* of the labour market in India. While in an earlier framework structural dualism between "traditional" and "modern" was emphasised in recent formulations the distinction between "Formal" and Informal Labour has become standard ways of describing labour market segmentation. The expectation of transition from "traditional" to modern sector or from informal to formal labour has been belied in the Indian context. The characteristic feature of Indian labour market has been the persistence and deepening of this "dualism". In fact we have the scenario where informalisation of labour has instead breached the walls of the hitherto small but influential and productive "formal" sector with nearly two thirds of workers in the Formal sector in India being in it. Moreover it is now well recognised that the disparities in conditions of work, remuneration and relations of work between formal and informal worlds of work are further cross cut with traditional segmentations based on social identities of caste and gender. Persistence association of certain low value and inhuman forms labour (eg manual scavenging) with caste groups is a men/women case in point. So is the historically low level of participation of women. This complex intersection of multiple segmentation of labour (formal/informal, traditional/modern, low caste/high caste, dynamic/stagnating regions and sectors) provides the immediate context in which technological change and the consequent meanings of work is played out. Will new Technology aggravate or alleviate this persistent disparities and inequalities? Recent historical experience holds little promise for ameliorative view. It would seem that cluster of new technology and the process of automation would further widen the fissures in the labour market. Recent enthusiastic adoption of "digital" technology by the government to "formalise" the informal sector and "financially" include the hitherto excluded informal workers seems to have ended up as a economic disaster for bulk of the informal labour even as it has ended up providing an immense power of surveilling the poor to Government.

13. I would like to conclude by reiterating some key issues for discussion.

a) There is a great need to calibrate the and evaluate the impact of changes promised by the "Fourth Industrial Revolution" technology. That would mean even questioning how "new" is the new technology.

b) The qualitative impact of these technology in changing the meaning of work and work relations should be given greater importance than hitherto given in the literature

c) Temporal and Spatial variation and its impact on the world of work is to be considered as determining variables rather than merely as consequences of a uniform technological change.

d) Finally, I would think that the current discussion on technological change has been carried out primarily from the stand point of state and employers position and policy making perspective. There has been therefore hardly any discussion around “alternative” models of technological change. This is in sharp contrast to earlier discussions around questions of automation where worker cooperatives and work sharing practices were put forward as viable options.

Emerging Technologies + the Future of Work in India

Urvashi Aneja + Vikrom Mathur,

I. Introduction

Emerging technologies for artificial intelligence, machine learning, and 3D printing combined with the growth of the platform economy and related digital services are transforming the future of work. Concern over displacement of labor by machines is not new, but scholars argue that past interactions between automation and employment cannot be a reliable guide to the future in the Fourth Industrial Revolution.¹ Debates tend to oscillate between two positions: that new technologies are rendering workers redundant faster than they are creating new employment, or that aggregate gains in productivity brought on by technology will enable job creation in the long run, along with new forms of value creation and social protection.

These universalizing narratives however assume that the uptake, diffusion and impact of technological change will be similar across peoples and context. While emerging technologies are being developed and deployed globally, technological trajectories and their impact will be shaped by and mediated through local social, cultural and economic systems. Moreover, the job displacement versus job creation discourse has largely ignored the more nuanced social, cultural, and economic specificities around emerging technologies and the future of jobs.

II. Jobs, Growth, and Automation in India

Despite high growth rates in India over the past two decades, the rate of unemployment has been growing - the 2015-16 Economic Survey shows an increase in the rate of unemployment from 3.8% in 2011 to 5% in 2015.² Growth has been capital intensive rather than labor intensive; sectors that have experienced the highest rates of growth, such as financial services, are the ones that are the least labor-dependent.³ By 2050, another 280 million people are expected to enter the workforce, at a rate of approximately one million every month.

The specter of job-less growth has meant that the conversation around technology and the future of work in India has largely focused on the issue of job displacement. The World Bank estimates that

¹ D.H. Autor, Why are there still so many jobs? The history and future of workplace automation. *The Journal of Economic Perspectives*, 29(3):2015.

² Economic Survey 2015 – 2016, Ministry of Finance, Government of India, 2016.

³ BCG & CII, *India: Growth and Jobs in the New Globalization*, 2017.

automation will impact 69 percent of jobs in India.⁴ Other studies note that automation potential differs from technological adoption, given the relative cost of labor and labor laws in India.⁵ The declining cost and improved efficiency of automation and robots compared to labor nonetheless poses a particular challenge for emerging economies like India who are risk of 'premature de-industrialization.'⁶ The clearest example of this is the relocating of the textile industry back to industrialized countries. There seems to be a greater potential to increase employment opportunities within labor-intensive areas such as agriculture and construction (within the organized labor sectors) to boost the economy's growth capabilities. Still, it is in these two areas that automation and mechanized technological use is likely to cause the greatest economic disruption, in terms of labor displacement.

III. Differential Impact across Labor Segments

Job displacement and creation is only part of the story – impact on the quality of jobs and the differential impact on different segments of labour and social groups needs to be understood and unpacked. The bulk of India's work force is employed as informal labor, or self-employed micro-entrepreneurs, within the unorganized labor. The share of contractual labor within the organized sector has also been increasing steadily. The impact of technological change on the future of work in India will interact with this structure of Indian employment. The growth of the platform economy in India for example creates multiple new economic opportunities. However, unlike debates in industrialized economies, it is not contributing to a shift from formal to informal employment, at the cost of losing social protection mechanisms associated with formal employment. On the contrary, it is arguably reproducing existing structures of informality, most already devoid of access to social protection mechanisms. An alternative view is that the platform economy has the potential to organize India's informal sector, creating new opportunities for financial inclusion, collective bargaining, and training and re-skilling. Similarly, micro-entrepreneurship in the informal sector is widespread, and most workers in urban India already have multiple jobs without formal standing in labor laws and multiple employers through heavily subcontracted work.

IV. Technology, Gender, and Economic Participation

New ways of work and economic participation will also recast or reproduce social relationships of gender and class, among others, and create the need to reconsider social protection frameworks. In India, despite increases in the number of girls in education and in women's average incomes, the rate of female labor force participation declined from 34 % in 1999-2000 to 27 % in 2011-12.⁷ Census data from 2011 indicates that 66 % of women are literate as compared to 82% of men.⁸ These old

⁴ World Bank, *Digital Dividends*, World Development Report, 2016.

⁵ BCG & CII, 2017.

⁶ Dani Rodrick, 'Premature Deindustrialization', *NBER Working Paper*, 2015.

⁷ Ruchika Chaudhary & Sher Verick, *Female Labor Force Participation in India & Beyond*, ILO Asia Pacific Working Paper Series, 2014.

⁸ Census Data 2011, Ministry of Home Affairs, Government of India, 2011.

challenges are also contributing to a significant digital gender divide. Recent studies show that in urban India, only 29% percent of Internet users are women; the number is even less in rural areas. Women are underrepresented in Science, Technology, Engineering and Math (STEM) jobs, and the majority of women in the IT sector are confined to back-end, lower-level, employment.⁹ Studies indicate that the main factors keeping women at home are social customs and low education levels.¹⁰ In the digital age, 'online' and 'offline' are becoming increasingly intermeshed. Policy measures aimed at women's empowerment, and those aimed at technological innovation must not operate within silos. Steering technological innovation for the economic empowerment of women will require navigating several old and new challenges.

V. Social Protection + Labor Policy

Changes in the nature of work present multiple opportunities and challenges for shaping the social contract. Policy responses can be clustered around regulatory interventions; education and re-skilling; and labor policy. New forms of social protection will need to be devised and deliberated, and these will also entail making critical political and social choices. The idea of a universal basic income, for example, has been gaining currency in India as means to rectify the existing welfare system and ensure access to basic services; but it could effectively mean that the government abdicates its responsibility to provide people basic services. The idea of a Robot Tax recently proposed by Bill Gates has also been widely criticized for being not only impractical, but also potentially stifling innovation and the uptake of technologies; but, there is a broader question here about the distribution and accumulation of productivity gains.

VI. Technological Choice

Policy responses must be built on the recognition of technological choice. In other words, technological trajectories are not pre-determined and fixed; rather they are subject to 'social shaping' and 'policy steering'. There is thus a decision to be made about which jobs should be automated or which platforms should be promoted, a decision that must be shaped by the broader context and possible implications. Innovation is thus a fork in the road.

The regulation of Air BnB in Berlin and New York with a view towards protecting residents from rent inflation is a case in point. In contrast, one of India's leading banks has announced that it will be installing 'the first humanoid in India's banking' – a robot that automates some services.– In the context of growing unemployment, it is worth asking whether this is the kind of job that is necessary to automate. On the other hand, despite being banned, the profession of manual scavenging still continues in India - India still has 1,80,657 households that make a living from manual scavenging.

⁹ BCG & CII, *Decoding Digital Retail*, 2016.

¹⁰ Renu Singh & Protap Mukherjee, 'Whatever she may study, she can't escape from washing dishes': gender inequity in secondary education – evidence from a longitudinal study in India, *Compare: A Journal of Comparative & International Education*, (0): 2017

This example should also drive home the point that leaving innovation to market forces alone is inadequate; Balancing equity with innovation will not happen if left to market forces alone.

VII. SSC and the Future of Work

The insight that technological use, uptake, and diffusion will vary across socio-economic and cultural contexts highlights potential areas knowledge production and sharing within the framework of SSC.

- Consider potential technological trajectories by sharing common experiences and insights across countries
- Consider the different kinds of technological choice that exist for southern states – what is desirable and are feasible, given pressures of global capital and trade competitiveness?
- Technology sharing and transfer for socially beneficial innovation; how to bridge the digital divide?
- Labor policy and social protection mechanisms across global value chains and geographically dispersed service industry

(From an ILO perspective, SSTC is a horizontal and solidarity-driven means to promote and implement the Decent Work Agenda in the context of the 2030 Sustainable Development Agenda)

Work and Society in a Developing China

Shi Xiuyin

The past 30 years has witnessed dramatic changes in the relation between work and society in a rapidly developing China. Such relation is in a state of “space-time compression” with multiple facets and in multiple forms. Compared with western countries, it bears similarity to that in the early period of capitalism and also has certain modern features. This paper provides an overview of the changes and forms of the relation between work and society, and analyzes its inherent nature and logic.

I. The industrial transformation and the separation of work and society

China has a long history as an agricultural country. Until 1978, when the new round of economic reform began, the agricultural population still accounted for 71 per cent. There was no separation between work and society for those farmers who made a living by farming in rural China. Work and society were mixed for them as family was considered not only as a social unit but also a production unit. Farmers thought they were “labouring” or “farming” instead of “working”. In short, the relation between work and society never bothered farmers.

The problem of work-society relation came out in the process of industrialization and post-industrialization. China’s population working in the manufacturing and service industries accounted for only 29 per cent in 1978 but the number grew to 72 per cent from 1978 to 2015, exceeding 28 per cent of agricultural population. Those people live in towns and work in factories and companies outside their homes, leading to a separation of work from life. Today, 29 per cent of China's employed population work in the manufacturing sector and 42 per cent in the service sector, indicating that China is entering the post-industrial era. The problem of work-society relation has not only appeared but also grown. The loss of balance between work and life in the West has been repeated in China in less than 40 years.

In this process, not only the separation of work from family, life, and society but also the formalization and independence of work as well as its growing value and significance deserve attention. The value of work becomes greater than that of life, posing challenges towards the value of life and even that of family. As workers described, the home is just a hotel while the workplace is the main court.

II. The class difference in the relation between work and society

The past several decades has not only witnessed rapid changes in the relation between work and society but also growing social and class differentiation. The Chinese society is divided into ten major classes according to researchers, namely, the unemployed, peasants, workers, service people, business people,

clerical people, professionals, managers, private owners, and social governors. There is a great gap which keeps growing in their education, income and power, as well as work, family, life and social status.

Migrant workers are at the bottom of the social ladder in urban China. They work like “workers” but live like “peasants”. In other words, they take low-level jobs and fail to enjoy their lives in cities. Their families are still in rural areas; or couples work in two cities separately.

Surveys show that some migrant workers work overtime. Those who work 8 hours per day account for just 37 per cent. 45.9 per cent of migrant workers work 9 to 10 hours, 14.0 per cent work 11 to 12 hours, 0.9 per cent work 13 to 14 hours, and 1.4 per cent even work more than 15 hours a day. Most migrant workers work 9 to 10 hours a day and about 15 per cent of them have extremely long working hours, leaving nearly no time for leisure and entertainment. Moreover, the younger the workers are, the longer they work every day.

A large number of migrant workers are offered accommodation by employers, which leads to extra working hours according to surveys. They live in dormitories and barely have no time to spend with families. It seems that history repeats itself: the early stage of industrialization in the United Kingdom now repeats in China. Workers are enslaved by industrial production and market, and alienated by their work, with little or no time to enjoy their lives.

III. The group with most conflicts between work and society

White-collar workers suffer most from the conflicts between work and life, including teachers, doctors, nurses, researchers, aviation security officers and grass-root civil servants. Their work are intellectual, which requires them to spend time both at work and off work, blurring the difference between work and life. On the other hand, those people enjoy a higher pay and can afford high-quality entertainment, such as clubs, sports, and travel. They believe that both work and life are of value and they can and want to have both. It is in this sense that they are faced with the conflicts between work and life. It indicates that those white-collar workers are aware of the meanings of work and life and want to have both.

What bothers white-collar workers indicates a trend or a direction of the society. The value of life grows with the increase in work efficiency and income. White-collar workers begin to pursue a high-quality life as they enjoy a better labour relation and have got a decent job earlier than blue-collar workers. It can be inferred that the value of life will keep growing with the improvement of production efficiency and income.

Some special groups are faced with greater conflicts between work and life, such as the police, especially police officers in prisons and drug rehabilitation centers. Police officers in prisons in particular are exposed to high occupational stress. They work long hours facing prisoners under great tension and overload of work, and spend little time on socializing and family life. In addition, depression caused by long stay in prisons prevents them from enjoying a happy life after work, which may do harm to their physical and mental health.

Female white-collar workers are another group facing great conflicts. Well-educated women in China attach great importance to the value of work, and believe that work not only brings income but also serves as the basis for social status and self-esteem, which also helps to prove their value and maintain gender equality. Different from Japanese women who stay at home doing housework and enjoying family life, Chinese women prefer to work to pursue freedom and fun. However, Chinese women are required to be “good wife and mother” who can take care of their husbands, children and the whole family according to traditions. Thus, women face greater conflicts between work and life as they attach importance to both. However, they have never thought about returning to family and therefore they strongly oppose such opinions. They try their best to balance the two.

Those who have managed to keep a good balance are considered as successful women according to the public opinion. Studies have shown that women have the ability to well arrange work and life and make them benefit each other. Working women are more likely to make full use of their resources and knowledge beyond workplace when they feel their work are meaningful, encouraging and challenging. In addition, they are full of energy and positive emotions while working, which helps promote the performance of family roles.

IV. The new economy and new form of work and life

The new economy is characterized by the platform economy, which provides differential services to multiple participants and integrate resources and relationships to gain maxim benefits based on the modern information technology.

According to statistics by April 6, 2017, six of top ten listed companies are platform companies, including Apple, Google's parent company Alphabet, Microsoft, Amazon, Facebook and Tencent. According to the Digital Economy 2.0 Report published by the Ali Research Institute in 2017, China will have up to 400 million self-employed populations in 20 years working on a large platform through small front-end units or in the form of free links, which will account for half of the total employed populations. Alibaba itself will create 100 million jobs and provide support for 10 million small businesses worldwide. As people “bid farewell to the company and embrace the platform,” the 8-hour working system will be broken.

Platform companies characterized by Taobao have created numerous jobs and provide support for women to start businesses thanks to flexible working time, space and social relations under a de-gendering evaluation system. The platform economy provides more opportunities for the low-end labourers to start businesses as it can be replicated without any cost. The virtual and anonymous features of the platform economy break the traditional social structure and its imagination, which helps to reconstruct gender relations as well as urban and rural identities.

The platform economy also reshapes the relation between work and life, which is characterized by a mixture of both. There is no border between work and life as time and space are unlimited in platform economy. The growing working time and workload have posed great challenges to life.

(1) Time borderless. Online shopkeepers are unable to accurately predict when customers come and how many they will take. In addition, they usually stay up late to attract attention or take part in activities. According to those shopkeepers, they usually open the computer at the first time when getting up in the morning and work till late night at one or two o'clock. Therefore, no one else except themselves would like to take this job around the clock.

(2) Space borderless. Owners of small Taobao shops often work in living rooms and study offices, taking balconies and guest rooms as warehouses, in a bid to save costs. However, it blurs the border between workplace and living space. "We put goods in our balconies, or it is inconvenient to take goods from other places." For them, family is the shop and shop is the family, mixed together both in time and space.

(3) Mind borderless. As owners are responsible for their own profits and losses, they extremely care about shops and trends in the industry, failing to completely get off work. "As this is our own business, we cannot care more. I have to learn a lot of things, for sometimes others may have different thoughts or may not be so responsible. My husband also cares much and so we often discuss the business until sleep."

V. Where there is not work, there is not life

In the farming society, there is no such status as not having a job, meaning unemployment does not exist. However unemployment is an inevitable phenomenon in the industrial and post-industrial society where some people are always excluded from the labour market. The number of people unemployed has been gradually increasing since China adopted market economy system. It is officially reported that unemployment rate is around 4.3 per cent, while survey statistics show that the figure is around 10 per cent. Now here comes the question: those who "does not have a job", do they "have a life"?

Observation and research on these people suggest that they have no jobs and are not able to enjoy a good living. Despite that the government provides unemployment insurances and minimum living allowance which could support their lives without working, yet it cannot be called actually living in their perspective. They would rather get re-employed, find another job and enjoy their lives through their own work.

Those who do not work have a higher crime rate compared with those who work. That is, people without work have more time for committing crimes. According to a survey of Ningbo since 2000, the unemployed accounted for more than 20 per cent among the arrested suspects caught by the police. If the registered unemployment rate is 10 per cent, the crime rate of the unemployed is twice than that of the common citizens. Moreover, this figure is continuously increasing. The percentage of the unemployed among all the suspects arrested rose from 19.68 per cent in 2000 to 34.57 per cent in 2008, total proportion increased by 14.89 percentage points. From the individual point of view, the longer one remains unemployed, the greater the possibility of committing a crime is. It is also found in judicial practice that there is a difference in crime rate between the short-term unemployed and the long-term unemployed: the longer one remains unemployed, the greater the risk of crime is. Furthermore, it is possible that long-term unemployment could lead them to professional criminal gangs such as theft gangs, and fraud gangs for the sake of making

a living.

Why did the unemployed commit more crimes? One explanation is to survive. However, there are cases that crimes are not done because of living pressure or property. For some, one of the motivations of these crimes is "idleness", meaning making trouble out of nothing and the second is "mental emptiness". When there is nothing to do in life, it is possible that people would find something, which tend to cause trouble such as helping friends to fight, or simply finding troubles. For instance, in Ningbo City in 2005, the most serious crime of the unemployed is violence, where four out of five crimes are violence-related. Women crimes are mainly stealing, or children trafficking. For those who are mentally empty, drug abuse prevails. Drug crimes committed by the unemployed accounted for 36 per cent of all Ningbo drug crimes in 2000. Among the unemployed criminals, 8.42 percent are related to drug crimes, which ranks the third in the crimes of the unemployed. Since 2010, drug crime has remained second in the crime of unemployed people. In this case, it is obvious that drug abuse is clearly not because of "living pressure", which is contrary to survival and living.

No matter making trouble out of nothing or feeling mentally empty, these are all human natures. It is human instinct to conduct productive activities, just like chicken keeps pecking rice or cats preparing themselves for catching mice. Physical living status can exist, however, without productive activities, there is no mental life nor human living. Such kind of emptiness is unbearable.

VI. When there is no work, simulate having one

Chongqing Municipal Public Security Bureau has released a series of burglary cases, in which the perpetrators belong to a theft gang manipulating the deaf and the mute across many provinces. This theft gang consists of more than 30 suspects who have committed over 60 cases amounting to more than 300 million yuan. This group runs in the "corporate management model". There are organizational structures and internal divisions of labour under a general manager; there are also video conferences assigning tasks, good pay for members and clear rewards and punishments system. What's more, members with "excellent performance" are rewarded with overseas travel.

In fact, even beggars adopt a corporate management model, which is called "Gai bang" (beggar's organization) in China. Some beggar's organization has its own leader, which is called "boss" whose attendant is called "secretary". There is also a general manager to deal with business and affairs of the "boss", called "director".

Why would criminal gangs take corporate system? One of the answers is to legalize and socialize such criminal behaviors. In this way, the offenders do not think of themselves as committing a crime but deems themselves working. They imagine that they are engaged in some kind of social activities instead of doing harm to the society. Their criminal behavior is actually a simulation of work as they in fact do not have a job but imagine they are working and earning wages like ordinary people.

Other than that system, some criminal gangs adopt another model which is even closer to a company's

system. Such criminal gangs usually provide illegal goods like smuggles, drugs, etc., and illicit services including pornography, casinos, usury and so on. These companies take a legitimate form while doing their business and are registered in the national industrial and commercial administrative departments. For instance, those dealing with smuggling, drug trafficking are often registered as shipping companies; those that provide pornographic services, or open casinos are registered as entertainment companies; those that practice usury are often registered as investment companies or consulting firms. As offenders in the criminal gangs lack certain abilities to compete in a regular labour market, or are reluctant to work according to the employers' request, they tend to simulate an environment where they could avail their "expertise" in smuggling, drug trafficking, casinos. Under their simulated organizational structure of company, they believe that they are "working" and experiencing the meaning and value of their work.

VII. Is it possible to live a life without work?

Due to the constant innovation of technology, in particular the larger scope and shorter period of innovation, work efficiency has improved rapidly. Therefore, one's work and its product can meet the needs of not only the producer but also a wider range of other demanders. This generates a possible prospect that fewer people are working, and more people are in the state of not working. In other words, a few people mainly devote themselves into work instead of enjoying their life solely while others take the opposite position. This is made even more possible by the development of artificial intelligence and fictitious economy.

However, if such case as "the elite work while non-elites live" is possible, is this modality reasonable or not? What's more, what consequence could it bring to the society and all human beings?

One statement is that such modality is against human nature and could bring negative effect to all or even put human beings at huge risks.

Engaged in labour or work, is always deemed as an essential activity of the people. In the Bible, labour and fertility are described as a punishment for the original sin, both of which are considered a must for all human beings who have to survive. Labour and hard work are necessary to maintain the production and reproduction of individual life, and fertility and pain are unavoidable for the continuation and reproduction of human races.

The ancient Greek people have a vivid description of the process of separation of man from god, which shows their rational thinking on the close relationship between nature and human existence and labour. Labour appears after man broke with god. The meaning of labour is that it serves an intermediary to rebuild the relationship between man and god - by turning the product of labour into a sacrifice to god (nature) so that man regains the affection of god. It is also the fundamental skills to enable man's sustainable survival as god (nature) ensures that people could get "livestock and gold" to maintain their lives. Besides, labour is an intrinsic nature of expressing the uniqueness of human existence. It is the sacred duty of man in the earthly life that through creative labour work, people accumulate prestige, achieve their own self-value, and distinguish themselves from other living species.

From the point of view of Protestant ethics, at least starting from Luther, labour is used as a way of “disciplining the body” and “succumbing it to the Holy Spirit”, “pleasing God” and “loving your neighbor”²⁶. The professions of physical labour is one of the “thousands of things” that God wants humans to do, which “has the same value before God”²⁷, and is “favored by God”²⁸.

Karl Marx, though rebukes the capitalist system of labour slavery, emphasizes that labour is the first necessity of human and an integral part of life. “Those who do not participate in the production of materials but rely solely on other alternative labour to get food cannot be called human in its original sense.”²⁹

According to Chinese Confucianism, physical labour is not highly praised yet intellectual “work” is strongly stressed. Confucianism advocates devotion to the mundane world and encourages self-improvement and achievements. The most “noble man” should cultivate the moral self, regulate the family, run the state rightly and make the world peaceful. All these ambitions are included in their “work”. In Confucianism, it is hard to imagine that people without work are valuable and that non-work activities are meaningful.

Psychological studies find that the Chinese people's work value orientation and that of Westerners are different. American researcher Bellin et al proposed that there are three dimensions of personal value, namely (1) Job Orientation (2) Career Orientation (3) Calling Orientation. Individuals with job orientation tend to pursue personal interests so as to get material rewards. Those with career orientation aim at personal career development which brings them higher social status, professional prestige and comparative advantage. Labourers with calling orientation are more concerned with the intrinsic value and physical and mental pleasure brought by their professions.³⁰ Compared with the Westerners, calling orientation of the Chinese emphasizes mental satisfaction generated by their work, which has a strong sense of purpose and significance. Moreover, the Chinese tend to have a stronger inclination for calling orientation.³¹

In China today, the NEET Group emerges for a variety of reasons. NEET Group refers to the group of people who should have been able to earn their own living but still rely on their parents. The concept of NEET originates from English--Not currently engaged in Employment, Education or Training. In Taiwan it is translated as the NEET. It first appeared in the United Kingdom, referring to the 16 to 34-year-old young people. In the United States, they are called “boomerang child / kid”. In China, these people who have the ability to work yet refuse to work are widely criticized by the society. They are criticized as “lacking ability

²⁶ Martin Luther Anthology, Volume One. Shanghai, 2005

²⁷ A Collection of Weber's Works VII: Weber, Max. The Protestant ethic and the "spirit" of capitalism and other writings. Penguin, Guilin, 2007.

²⁸ A Collection of Weber's Works VII: Weber, Max. The Protestant ethic and the "spirit" of capitalism and other writings. Penguin, Guilin, 2007.

²⁹ Arendt, H. Karl Marx and the tradition of western political thought. Social Research: An International Quarterly. Nanjing 2007

³⁰ Rellah N. Madsen R, Snllivan M. Habits of the Heart: Individualism and Commitment in American Life [M]. Berkeley: University of California Press, 1985. 65-73

³¹ Tian Xizhou: Structure and Impact of Work Orientation in Chinese Context, *Soft Science* 2016

to support their parents and unable to bear the responsibilities to raise their own children.” In the long run, this could lead to “not only serious family problems, but also deeper social problems.”³² This also shows that Chinese society can not accept and can not tolerate “to live without work”.

To sum up, the answer to the question “whether it is possible to live a life without work” is negative. People must live a valuable and meaningful life. For most people, work is the carrier of value and meaning, without which there is no value or meaning at all. Although it is acceptable to spend more time enjoying life or making life more colorful, it is not tolerable to live a life without work.

³² Ma Zhiguo: “The NEET Group” affects thousands of families, *Chinese Youth Research*, 2008