1 Introduction to Work, Organizational, and Business Psychology

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1.1 Introduction

Imagine that you inherited enough money, or won the lottery, to live comfortably without working. Would you continue to work anyway or not? How would you or employed people you know respond to this question? Morse and Weiss originally asked this question in 1955. Since then, 22 empirical studies conducted between 1969 and 2005 asked employees this same question. On average, 76% of the surveyed employees indicated that they would continue to work, whereas only 24% said that they would stop working completely (Paulsen, 2008). At first, these findings seem to suggest that a majority of employees are happy with their work and would still go to the factory or the office every day even if there was not financial need to do so. A closer look at the results of these studies on the so-called »lottery question« reveals, however, that on average only 37% of the surveyed employees would continue to work in their *current* job, whereas 39% of employees would prefer to continue working *elsewhere* or under different conditions (Paulsen, 2008). Thus, a majority of employees said that they would continue to work if they received a big inheritance or won the lottery, but approximately half of them would then like to change something about their work.

Responses to the lottery question are psychologically relevant because they represent employees' non-financial employment commitment (Warr, 1982). Findings regarding the lottery question have been replicated across many different countries and across Western and non-Western cultures (de Voogt & Lang, 2017). Additionally, longitudinal research finds only relatively weak declines of employees' non-financial employment commitment over several decades (Highhouse et al., 2010). Of course, the lottery question asks employees to respond to a hypothetical scenario that only very few employees will actually experience in their lives. Interestingly, however, studies who recruited actual lottery winners to participate in surveys or interviews suggest that most of these people who could live comfortably without working for pay would still choose to continue working in some way or another (e.g., Arvey et al., 2004; Cesarini et al., 2017). Taken together, research on the lottery question and actual lottery winners consistently demonstrates that work plays an important role in most people's lives and, for many, is more than just a source of income and financial security.

Research on unemployment also suggests that work as part of paid employment has a number of so-called latent functions (which means that people are not necessarily aware of these functions), in addition to the manifest function of earning money. Specifically, work provides people with (a) time structure, (b) social contact, (c) a collective purpose (or shared goals), (d) identity and status, and (e) the possibility to be

active and engagement in meaningful activity (e.g., Jahoda et al., 1972). Jahoda (1981) argued that paid employment is the most important life domain in modern societies that enables people to regularly experience these latent functions of work (as opposed to other work activities, such as unpaid caregiving or household labor). When people become unemployed, they no longer enjoy the latent functions of work (a state called »deprivation« by Jahoda, 1981), which can lead to psychological strain. Unemployed people, particularly men and people with a blue-collar (i.e., production work) background, experience higher levels of depression, anxiety, and psychosomatic symptoms, as well as lower well-being and self-esteem than employed people (Paul & Moser, 2009). Additionally, research finds that when unemployed people regain paid employment, their well-being increases significantly, even among those who enter precarious jobs after unemployment (e.g., jobs with low income, temporary contract, low fit between personal abilities and needs with job requirements; Grün et al., 2010).

In 2020, the average expected life time of working was 39.1 years in Germany (40.7 years for men and 37.3 years for women; Statista, 2022). The number of working hours in Germany has not changed much over the past three decades. Full-time workers spend on average 41 hours per week at work (approximately 10% spend more than 48 hours per week at work, a percentage that has also not changed dramatically over the last 30 years). However, the number of part-time workers has significantly increased over the last decades, who spend on average 19.5 hours per week working. These figures are important from a psychological perspective, as research demonstrates that work can have profound effects on the development of people's cognitive functioning (e.g., cognitive decline, early onset of dementia; Finkel et al., 2009), personality (e.g., openness to experience; Kohn & Schooler, 1982; Nieß & Zacher, 2015), and identity (i.e., who one »is«; Ashforth & Schinoff, 2016; Ibarra & Barbulescu, 2010).

In this introductory chapter, we first define what »work« is and how it is organized. Second, we introduce the scientific and occupational field of work, organizational, and business (WOB) psychology, including its central topics and practical applications. Third, we briefly describe the history of WOB psychology and outline future topics. Following this chapter, we outline several metatheories (▶ Chap. 2) and key methods used in WOB psychology (▶ Chap. 3). This will provide you with the basis for Chapters 4-21 in this book, which we co-authored with academic experts in each respective specialty area, and which address specific topics and applications of WOB psychology in greater depth.

1.2 What is Work and How is Work Organized?

At a very basic level, people need to work to obtain things they need to survive and procreate, including food, shelter, and a mate. The way people work changes across the lifespan; at younger ages they learn how to work, as adults they carry out work most of their waking time, and in older age they might increasingly disengage at least from the most strenuous work activities. Thus, the notion of work is very closely tied to our development as individual beings (ontogenesis).

Work is also closely tied to our evolution as humans (phylogenesis). Indeed, work has accompanied humans at all times in their evolutionary history. Our ancestors had to hunt animals, make fire, organize a comfortable cave to sleep in, and collaborate with other people to ensure their survival and to take care of themselves and their families. Our ancestors organized themselves in groups or tribes of hunters and gatherers who worked together, and later in human history they settled down in groups to farm crops and animals. In the middle ages, people traded the goods they had produced with each other, increasingly across longer distances, and offered their services to others. Starting approximately 250 years ago, technological developments led to the industrial revolution, when people started working with increasingly sophisticated machines in factories and exchanged their labor for money.

Generally, work can be characterized as goal-directed, planful behavior or action. To carry out work, people use their physical and cognitive abilities to make use of various tools that help them accomplish work tasks. One of the first tools created by humans was the hand axe made out of stone to hunt and slaughter wild animals. Later, humans developed and used more complex tools, such as a bow with arrows, ploughs, or machines powered by steam engines. The modern tools used in different occupations today (e.g., computer, garbage truck, operating robot) are much more complex and some even make humans unnecessary. However, these tools are also the result of, and their application mostly still requires, the use of physical and cognitive abilities. Modern work in the context of paid employment requires the fulfillment of work tasks, using human abilities and tools in the context of organizational goals (e.g., profit), structures (e.g., hierarchies), and processes (e.g., performance management). Today, work does not only help fulfill basic needs or earn an income to fulfill basic needs, it also allows us to be socially mobile (e.g., overcome a background of poverty), give meaning to our lives (e.g., by helping others), and leave a lasting legacy for future generations (e.g., by developing ideas, products, services, organizations that exist long after we die). At the same time, modern work does not only lead to various positive outcomes, such as well-being and meaning, but increasingly also to physical ill-health (e.g., obesity), experiences of stress, exhaustion, and psychological strain.

Another important defining characteristic of work is that the vast majority of humans carry out their work as part of a broader social systems. In these systems, work is divided into several smaller parts or specialized duties or tasks. The most important purpose of teams and organizations is to organize different sets of work tasks that share and contribute to the same overarching goal and that cannot be accomplished by a single person (or would at least be accomplished less efficiently by a single person). This division of work tasks already took place when humans hunted wild animals in small groups (i.e., hunters and gatherers). These groups allowed humans to distribute and coordinate different tasks, and to achieve their goals more efficiently, but of course these groups also made individuals quite dependent on each other.

An organization is a social system, made up of individual human beings that strive for a certain number of shared goals; additionally, an organization uses certain rules, structures, and resources to coordinate and direct the activities of its members toward these goals (Kieser & Kubisek, 1992; ▶ Chap. 22). The organization's structure is required for the coordination of different tasks (e.g., supervisor and subordinate roles), thus tasks represent an important link between people and the organization. To accomplish its goals, an organization needs to hire and employ people («personnel« with a work con-

tract) with certain knowledge, skills, abilities and other factors (in short: KSAOs), who are able to carry out specific tasks efficiently and effectively. Moreover, an organization needs structures, processes, and resources to enable and motivate its members to carry out their tasks (e.g., training, leadership, rewards). Finally, organizations are social systems that interact with and exchange resources with their broader environment (e.g., customers, other organizations, or regulatory bodies). Of course, these interactions and exchanges are carried out by individuals, not the organization – an abstract concept – itself. The nature of these interactions is determined by the goal or goals of the organization. For profit-oriented businesses, the market for selling products and services to customers is essential for achieving organizational goals.

1.3 What is Work, Organizational, and Business Psychology?

As a subfield of psychological science, WOB psychology is concerned with people's experiences and behavior in the context of individual and team-based work, in organizations, and in the economy more broadly. The objective of WOB psychology is to derive scientific principles of individual, group and organizational behavior and apply this knowledge to the solution of problems at work (APA, 2008). Note that the focus of this book is on work as part of paid employment in business («for profit«), non-profit, public organizations, or self-employment. However, many of the topics, theories, methods, and findings covered in this book can also be applied to understand people's experiences and behavior in other work contexts, such as non-paid childcare or eldercare work, household work, volunteer work, and activism.

Work psychology deals primarily with the influences of work tasks and working conditions on people's experiences (e.g., satisfaction, strain) and behavior (e.g., performance, safety behavior, turnover). Moreover, work psychology focuses on the individual characteristics, actions, and training that are necessary to successfully complete work tasks (i.e., work performance). To this end, work psychology is particularly concerned with the systematic analysis and design of work tasks, jobs, and work more generally. *Organizational psychology* aims to describe, explain, and potentially change people's experiences and behavior in a social context, the organizational context, and it is concerned with how being a member of an organization with certain characteristics, structures, and processes (e.g., communication, leadership, conflicts, negotiation, socialization) impacts on people's experiences and behavior. The area of *personnel psychology* is traditionally considered to be an important sub-area within both work and organizational psychology. Personnel psychology considers people in their roles of employees of an organization (i.e., with a contract that requires them to complete tasks according to their job description). The focus is on people's requirement to show ideally high work performance in exchange for an income. Accordingly, personnel psychology is concerned with personnel recruitment (sometimes also called personnel marketing), personnel selection, and personnel development (including training, but also making vocational and choices and longer-term career development), as well as performance appraisal and performance management. Finally, the

area of *business psychology* addresses the question which characteristics, behaviors, and work conditions (e.g., emotional job demands) contribute to successful business relationships, service quality, and customer satisfaction.

In general, the sub-areas of WOB psychology use constructs and theories, methods and diagnostic tools, as well as intervention and evaluation strategies at the individual, group (or team), and organizational levels. WOB psychology is an applied empirical science that draws from theories and findings in several basic psychological sub-areas, such as cognitive, social, personality, and developmental psychology. Moreover, the study of people at work is not only an area where WOB psychologists are active. Multiple disciplines cooperate to advance the scientific understanding of people at work, such as management, organizational communication, economics, sociology, and other social sciences. A strength of WOB psychology is that researchers draw not only from basic psychological sub-areas, but also enrich psychological insights by drawing from other disciplines. For example, the study of teams at work is a multidisciplinary endeavor, with rich opportunities for interdisciplinary research collaborations (e.g., Lehmann-Willenbrock et al., 2017). As another example, research on workplace meetings is a growing area where WOB psychologists collaborate with many other disciplines to advance our understanding why people spend so much of their work time in meeitngs, and what makes meetings satisfying and effective for individuals, teams, and organizations as a whole (for an overview, see Allen & Lehmann-Willenbrock, 2022).

Similar to other applied psychological sciences, such as clinical, pedagogical, counseling, or environmental psychology, WOB psychology primarily addresses problems and attempts to answer research questions that have implications for practice, and particularly for paid employment and organizations. WOB psychology uses the »scientist-practitioner model,« according to which insights based on empirical science inform practical applications and vice versa. In other words, the science of WOB psychology attempts to describe and explain people's experiences and behavior in the context of work, organizations, and business, while practitioners adopt a data-driven, evidence-based approach that applies scientific knowledge to solve problems in workplaces and organizations. For instance, WOB psychologists have studied the predictors and consequences of people being late to meetings at work – a common practical phenomenon (Allen et al., 2018) – and organizational practitioners may use this knowledge to prevent meeting lateness in practice. To this end, WOB psychology practitioners may read academic or practice-oriented journals that disseminate scientific findings; some of them, however, may also conduct their own research in the companies that they work for. Oftentimes, academic WOB psychologists collaborate with organizational practitioners to investigate a phenomenon (e.g., health behavior in teams; Schulz et al., 2017). However, it is important to note that WOB psychology is not only an applied science, but also has goals related to basic psychological science. That is, WOB psychologists also aim to develop generalizable theories and hypotheses about people's experiences and behavior and test them using rigorous research designs, such as experiments, observational, longitudinal, daily diary, or qualitative studies (▶ Chap. 3).

You might ask, why does psychology need a specialized sub-discipline that studies people's experiences and behavior in the context of work, organizations, and business? Wouldn't it be sufficient to rely on insights from the basic psychological disciplines? Of course, several findings from the basic fields of psychology, such as selective attention or the motivation to reduce

cognitive dissonance, also apply to employees in organizations. However, work, organizations, and businesses create unique contexts that lead people to experience and behave differently in these contexts than they do outside of work and organizations (i.e., »in general life«). These contexts entail job requirements, rules and constraints, as well as social relationships with colleagues, supervisors, subordinates, and customers that are not present in everyday life. It is important to understand these contexts and their potential influences on people's experiences and behavior. For these reasons, WOB psychology is taught as a mandatory subject in most Bachelor of Psychology programs at universities and also at a growing number of applied universities in Germany. Moreover, WOB psychology is frequently taught as part of the Master of Psychology program or as a standalone Master at many universities in Germany. Adjacent disciplines of WOB psychology are business and management, education, sociology, biology, medicine, engineering, and computer science, and students from these disciplines often take elective courses in WOB psychology.

In Germany, WOB psychologists working in academia are organized in (and attend regular meetings of) the Fachgruppe für Arbeits-, Organisations- und Wirtschaftspsychologie (established in 1985) of the Deutsche Gesellschaft für Psychologie (DGPs) founded in 1948 (www.dgps.de/fachgruppen/fgao). Applied WOB psychologists are organized in the Berufsverband Deutscher Psychologinnen und Psychologen (BDP) founded in 1946 and its section for Wirtschaftspsychologie (www.bdp-verband.de). WOB psychology academics and practitioners can also become members of the European Association for Work and Organizational Psychology (EAWOP; www.eawop.org), the Society for Industrial and Organizational Psychology (SIOP; www.siop.org), the Academy of Management (AOM; https://aom.org), or the International Association for Applied Psychology (IAAP; https://iaapsy.org).

1.4 Work, Organizational, and Business Psychology in Practice

WOB psychologists who obtain a Bachelor or Master degree work in many different applied fields, ranging from personnel selection and development over occupational health and safety management and vocational counseling to leadership and organizational development as well as management consulting. WOB psychologists work as employees for business, non-profit, and public organizations (including government agencies and universities), or as self-employed trainers and consultants. For example, WOB psychologists may be asked to complete the following tasks in these organizations:

1. Vocational counseling: WOB psychologists conduct psychometric assessments (e.g., abilities, interests) and structured interviews and provide evidence-based advice regarding potential career paths or career-related changes (▶ Chap. 5).
2. Occupational health and safety management: WOB psychologists develop and implement person-focused (e.g., training) and work context-focused (e.g., work design) prevention programs to

improve employee health and well-being (► Chap. 8).
3. Performance management: WOB psychologists develop and administer performance appraisal tools that differentiate among employees and identify opportunities for performance improvement. Performance appraisal systems are used to make promotion or termination decisions and to provide feedback to employees (► Chap. 14).
4. Work analysis: WOB psychologists conduct interviews or collect survey data to obtain information about jobs, which allows them to determine knowledge, skill, and ability requirements of jobs and to develop job descriptions and performance appraisal instruments (► Chap. 11).
5. Work design: WOB psychologists implement changes in the content and structure of work tasks, for example through job rotation or job enrichment initiatives (► Chap. 12)
6. Employee selection: WOB psychologists develop and use employee selection systems, such as tests and interviews, to assess whether job candidates fit the job requirements. They also evaluate selection tools to determine whether they predict future job performance and other valued criteria (► Chap. 13).
7. Training and development: WOB psychologists develop systems to identify training and development needs at the task, person, and organizational levels, design and conduct programs that meet these needs, and evaluate their effectiveness (► Chap. 15).
8. Organizational change management: WOB psychologists develop, implement, and analyze the results of employee surveys, facilitate group discussions, and advice organizations on introducing and evaluating changes to their processes (► Chap. 22).

1.5 History of Work, Organizational, and Business Psychology

Humans have always developed theoretical and practical solutions to work-related problems in their history. For instance, our evolutionary ancestors collaborated in functionally diverse groups to hunt animals in order to survive. In the middle ages, the Hanseatic League was formed, an organization of merchants to advance shared commercial interests and protect its members against piracy. In comparison, WOB psychology is a relatively young scientific discipline that was established only approximately 120 years ago. In the following, we briefly describe the beginnings and early history of the field.

From Wilhelm Wundt to Hugo Münsterberg

In 1879, Wilhelm Wundt (1832-1920) founded the worldwide first scientific institute of psychology in Leipzig, Germany. Wundt pursued two broad research streams: on the one hand, he conducted experimental research on physiological psychology (particularly consciousness); on the other hand, he pursued research on »Völkerpsychologie,« an early form of cross-cultural psychology, which focused on human involvement in more complex social and economic processes that Wundt believed could

not be studied empirically. Throughout his career, Wundt trained 186 doctoral students (116 in psychology) from various countries, including Japan and the United States, some of whom later became influential figures in the history of psychology themselves. In contrast to Wundt, who wanted psychology to be a basic science, many of his students were happy to apply psychological knowledge for the solution of practical problems. For example, Wundt's student Emil Kraepelin (1856–1926) experimentally studied factors that influence work performance, such as practice, work breaks, and fatigue. His applied studies on work performance were summarized in the book, »Die Arbeitscurve« (Kraepelin, 1902).

Another student of Wundt, Hugo Münsterberg (1863-1916), is considered by many the founder of applied psychology. Münsterberg was also interested in the application and utilization of psychological knowledge, especially in the context of work, organizations, and business (Landy, 1992; Moskowitz, 1977). He was also influenced by William Stern's »psychotechnics« (i.e., using psychological insights to solve applied problems), which he applied to industrial settings. In 1892, he was offered a professorship at Harvard University. He briefly returned to Germany in 1895 but, also likely due to antisemitism, did not receive a comparable professorship there and permanently migrated to the United States in 1897, where he later became president of the American Psychological Association. From 1910 to 1911, Münsterberg was a visiting professor in Berlin, where he gave a four-hour lecture on the novel field of applied psychology to hundreds of students; this was the first time that this new scientific area was comprehensively presented at a university.

Münsterberg conducted research on personnel selection (e.g., to identify cable car drivers who are not prone to committing errors in 1910), worker motivation, work design, performance, and marketing. He summarized his applied research in the books, »Vocation and Learning« (1912), »Business Psychology« (1917), and »Psychology and Industrial Efficiency« (1913). With the latter, he aimed to formally establish WOB psychology, by outlining »a new science which is to intermediate between the modern laboratory psychology and the problems of economics: the psychological experiment is systematically to be placed at the service of commerce and industry« (p. 3).

Other founders of WOB psychology include Frank Parsons who published the book »Choosing a Vocation« (1909), Walter Dill Scott who investigated the effectiveness of marketing techniques and interrater reliability of personnel selection interviews (Scott, 1915), and Robert Yerkes and Frederic Terman, who conducted personnel selection for the U.S. Army in 1917 based on verbal cognitive abilities (Army Alpha Test, e.g., ability to follow directions given by others) and nonverbal cognitive abilities (Army Beta Test, especially for illiterate people and recent immigrants).

Frederick Taylor and the Principles of Scientific Management

Hugo Münsterberg was an admirer of Frederick Winslow Taylor (1856-1915), an engineer and management consultant, whose studies to increase industrial efficiency represent another important root of WOB psychology. At the same time, Taylor's studies are probably one of the reasons why many laypeople, students, and colleagues from the basic psychological disciplines are still skeptical of WOB psychology. In his book, »The Principles of Scientific Management,« Taylor (1911) outlined four broad approaches to increase production efficiency and outputs (an approach that was later called »Taylorism«): (1) Breaking down work tasks into their most basic elements that can be ana-

lyzed using time and motion studies to increase efficiency, and to identify performance criteria and associated performance-based pay, (2) Systematic selection, training, and development of workers who are best suited for a specific elemental task, (3) Clear separation of mental labor (i.e., management takes over planning and monitoring) and physical labor (i.e., workers are responsible for task execution), and (4) Mutual and friendly agreements between workers and employers, including high pay, to make unions unnecessary.

As an example for the first principle, Taylor observed how workers shoveled coal, determined the optimum weight to be lifted, and then designed a shovel for this particular weight. Taylor's principles were also applied in early automotive assembly line work, for instance by Henry Ford in Detroit, Michigan (which coined the term »Fordism«). While psychologists (in contrast to industrial engineers) have mostly criticized Taylor's methods as inhumane, his principles did pave the way for modern standardized personnel selection and training methods that are widely accepted today.

Taylorism was advanced scientifically by engineer and organizational psychologist Lillian Moller Gilbreth (1878-1972) and her husband, the engineer and consultant Frank Bunker Gilbreth (1868-1924). Lillian Gilbreth completed the worldwide first PhD degree in industrial and organizational psychology (or I-O psychology, the equivalent of WOB psychology in the United States). The couple developed motion studies as an early work analysis tool (e.g., video records and timing of elementary, optimal hand and arm movements to eliminate unnecessary time and energy expended). At the same time, they ran a very successful consulting business (e.g., their consulting work led to foot-pedal trash cans and shelves in fridge doors), and they increasingly merged principles of Taylorism with humanistic ideas. For instance, Lillian Gilbreth did not only study how workers could perform their jobs more efficiently, but also how workers felt about their jobs. Fun fact: her family life with 12 children is portrayed in the book and movies called »Cheaper by the Dozen«, and she invented several useful household appliances that you will recognize, including the electric food mixer, shelves inside refrigerator doors, and the foot lever trashcan.

Toward Organizational Psychology

In contrast to industrial, work, and business psychology, organizational psychology is a younger discipline and its roots are more challenging to identify. A key feature of organizational psychology is a focus on the social context surrounding workers and the role of social dynamics at work. Already Münsterberg realized that social relationships can have an important facilitating (e.g., motivating) and constraining (e.g., conformity) influence on workers' behavior (something he called »social psychotechnics«). Indeed, he encouraged his student Floyd Henry Allport (1890-1978) to conduct his well-known social psychological studies on the influence of the presence of others on performance («social facilitation«).

However, many textbooks link the beginnings of organizational psychology (and the closely related field of organizational behavior) not to Münsterberg and Allport, but to the Hawthorne studies conducted by Harvard Business School professor and psychologist Elton Mayo (1880-1949) and his colleague and management scholar Fritz Jules Roethlisberger (1898-1974). The Hawthorne studies took place at the Western Electric Hawthorne Company in the 1920 and 1930s. They were a defining moment that contributed to the »human relations« move-

ment, a shift in thinking about people at work that developed from these studies in the following years.

The Hawthorne studies were originally designed to investigate the effects of lighting on productivity. However, the findings were unexpected and surprising – the level of lighting did not impact workers' productivity (unless it was reduced to the level of moonlight). Instead, workers showed higher productivity in response to receiving attention and being observed by the researchers (the so-called »Hawthorne effect«). Importantly, the studies also showed that the performance of workers was influenced by the behavior of other organizational members (e.g., peer pressure in groups to reduce their productivity below their capacity). The findings thus suggested that social psychological factors, such as social relationships with coworkers, subordinates, and supervisors, or internal dynamics of informal groups in organizations, may be more important than economic incentives or the objective working conditions examined by industrial psychology (Roethlisberger & Dickson, 1939; Sonnenfeld, 1985). Accordingly, the ensuing human relations movement argued that improving interpersonal relationships in teams and between leaders and employees is the most promising approach to motivate employees and enhance performance (O'Connor, 1999).

In 1961, management scholar Harold Jack Leavitt (1922-2007) presented a keynote talk at a conference entitled »Toward Organizational Psychology.« In his talk, he suggested that, »Organizational psychology occupies itself with the study of organizations and organizational processes. It is as much descriptive as normative; as much or more basic as applied; as much interested in developing theories of organizational behavior as ways of improving organizational practice. … Organizational psychology is beginning to have a describably unique character in many ways; a character that is at once challenging and disturbing to its older brothers in industrial psychology« (Leavitt, 1962, p. 23). Only a few years later, the first textbook on organizational psychology was published by Bernard Morris Bass (1925-2007), who is well-known for his research on transactional and transformational leadership (e.g., Bass, 1965).

1.6 Future of Work, Organizational, and Business Psychology

The world of work has been changing dramatically over the past decades – so what does the future hold for WOB psychology research and practice? Some of the most prominent economic and societal »mega trends« that impact employees and organizations are (1) digitization and automatization, (2) globalization, (3) demographic change, (4) increased complexity, work demands, and crises, and (5) individuals' desire for participation and meaningful work. Some of these trends have been labeled »New Work« or, in Germany, »Arbeit 4.0« (Poethke et al., 2019).

First, developments in digital technology, including information and communication technology (ICT), robots, and machine learning, continue to have a massive influence on many industries and how work is conducted. Formerly physically strenuous production jobs are now often carried out by machines (e.g., lifting parts in automo-