

Aalborg Universitet

Work Environment and the Origin of Ageism

Naegele, Laura; Tavernier, Wouter De; Hess, Moritz

Published in: Contemporary Perspectives on Ageism

DOI (link to publication from Publisher): 10.1007/978-3-319-73820-8

Creative Commons License CC BY 4.0

Publication date: 2018

Document Version Publisher's PDF, also known as Version of record

Link to publication from Aalborg University

Citation for published version (APA):

Naegele, L., Tavernier, W. D., & Hess, M. (2018). Work Environment and the Origin of Ageism. In L. Ayalon, & C. Tesch-Römer (Eds.), *Contemporary Perspectives on Ageism* (pp. 73-90). Springer. https://doi.org/10.1007/978-3-319-73820-8

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
 You may freely distribute the URL identifying the publication in the public portal -

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from vbn.aau.dk on: December 05, 2025

Chapter 5 Work Environment and the Origin of Ageism



Laura Naegele, Wouter De Tavernier, and Moritz Hess

5.1 Setting the Scene: Ageism at the Workplace

The ageing of the population and the approaching retirement of the baby boom generation are changing the structure of the workforce all over the industrialised world. The shrinking population of working age and the increased share of older workers within it challenge companies and organizations and call the financial sustainability of welfare states into question (Hedge 2012). While the practice of early retirement of older workers—in order to 'free up' employment opportunities for younger workers—was quite popular in the 1970s and 1980s, governments now recognize the fallacy and the unsustainability of this policy ('lump of labour fallacy'). Older and younger workers are not simply interchangeable e.g. due to their differentiating skill sets, positions within and their contributions to the labour market. Empirical evidence suggests that an increase in employment of older workers is even associated with increasing employment rates of younger cohorts (Kalwij et al. 2010).

Another widely and controversial discussed aspect in this regard is the presumed lower productivity of ageing workforces. Even though the performance or productivity of a worker in itself is rarely viewed as a coherent, analytically easily determinable factor, a negative relationship with age is often almost automatically assumed (Ng and Feldman 2012). Instead of acknowledging that workers age

L. Naegele (⊠)

Institute of Gerontology (IfG), University of Vechta, Vechta, Germany

e-mail: laura.naegele@uni-vechta.de

W. De Tavernier

Centre for Comparative Welfare Studies (CCWS), Aalborg University, Aalborg, Denmark

e-mail: wdt@dps.aau.dk

M. Hess

Institute for Gerontology at TU Dortmund, Dortmund, Germany

e-mail: mhess@post.tu-dortmund.de

© The Author(s) 2018 L. Ayalon, C. Tesch-Römer (eds.), *Contemporary Perspectives on Ageism*, International Perspectives on Aging 19, https://doi.org/10.1007/978-3-319-73820-8_5

individually and that their productivity is affected by their abilities (physical and cognitive limitations due to age) (Cardoso et al. 2010), education and work experience (outdated or obsolete skills) as well as by work environment related factors such as age-appropriate workplaces and/or career development opportunities (Frerichs et al. 2012), older workers are often seen as less productive than their younger counterparts (Ng and Feldman 2008). A closer look at the scientific literature reveals that existing studies do not support this one sided view as they appear to be inconclusive in this regard: Some researchers conclude that ageing populations have a negative effect on labour market productivity, whereas others suggest that at the company level, a higher share of older workers is associated with higher productivity (Van Dalen et al. 2010).

However, the lingering prevalence of prejudices and stereotypes as well as the discrimination of older workers based on age may compromise governments' efforts to extend working lives, which has become a key priority in most of the Western world as well as parts of Asia (Bal et al. 2011). Ageism, defined as discriminatory practices, attitudes and perceptions regarding older workers (Butler 1969), is still pervasive in many companies and organizations in the developed world (Rothenberg and Gardner 2011). In addition previous research has shown that experiencing stereotypes and discrimination at the workplace can influence older employees' productivity (Thorsen et al. 2012), retirement intensions (Schermuly et al. 2014), organizational commitment (Snape and Redman 2006), and work satisfaction (Orpen 1995). The individual perceptions of age discrimination may furthermore be amplified through the interaction with co-workers and supervisors and foster the prevalence of ageism at the organizational level.

Despite efforts to constrain discriminatory behaviour via law-making and employment policies in Europe and elsewhere, ageism is still prevalent in organizations and companies¹ and affects the careers of older workers in terms of job opportunities, promotions and performance evaluations. As a result—in combination with a shortage of skilled junior personnel—companies might run into difficulties when trying to fill their vacancies, affecting their overall performance and ultimately the growth of the economy (Kunze et al. 2011; Rothenberg and Gardner 2011). Therefore, it is crucial to identify which factors foster or mitigate ageism in the workplace, as it impacts not just older workers' lives, but also organizational performance and the economy and society as a whole.

Understanding the sources of age discrimination at the workplace is the first step in repelling it. Studies explaining ageism and its origins generally fit into three categories. First, there are studies looking at individuals (the micro level), linking ageist attitudes to individual characteristics such as education, gender or income. A

¹For improved readability we use the terms 'company' and 'organizations' synonymously in order to describe the 'places of work' throughout the chapter. We acknowledge that even though all companies can be described as organizations, in a narrow interpretation not all organizations can be described as companies (e.g. in the public sector). The processes discussed in the chapter are relevant for both public and private organizations, as well as non-profit and for-profit ones.

second perspective focuses on the macro level. In this perspective, ageism is attributed to cultural norms and attitudes prevalent in societies (Ayalon 2013). Shared values and norms have been shown to manifest themselves through prejudice and discrimination while shaping individual and organizational behaviour regarding ageism (Shiu et al. 2015). The third perspective relates to the social sphere of work organizations/companies (meso level) which play a key role in age discrimination. They provide the 'places of work' and therefore set the scene for the prevalence of discriminating behaviour towards older workers.

By focusing on the organizational level, this chapter aims to outline how ageism manifests itself in the important arena of work. While acknowledging the importance of other (younger) cohorts within the labour market, as well as the increasing amount of volunteer work done by older people, this chapter aims to primarily focus on ageism at the workplace faced by older workers in paid employment. We present a conclusive overview of theories and findings in the scientific literature regarding the role of organizations or companies in cultivating, preserving or reducing ageism within them. Focusing on studies from the developed world, we first look at the company level where we identify organizational characteristics that affect ageism, namely organizational structure and hierarchy, age structure of the workforce, company size, shared values and aspects of age-friendly human resource management. As organizations and companies never exist within an institutional vacuum, we subsequently identify contextual factors that shape and affect companies and organizational behaviour, and hence ageism within the organization. Here, we consider sectorial affiliation and legal frameworks on the company level. Overall we will discuss seven main determinants of age discrimination at the work place, without any claim for completeness at this point. Rather, these determinants are not set in stone, nor do they exist independently of each other or affect all organizations/companies the same way. In addition, as labour markets, organizations and companies are constantly evolving, it can be expected that in the future new determinants of ageism at the company level might arise.

5.2 Organizational Characteristics as Sources of Ageism at the Workplace

5.2.1 Organizational Structure and Hierarchy

Even though several studies stipulate the importance of organizational structures for age discrimination within the workforce (e.g. Branine and Glover 1997; Brooke 2010; McGoldrick and Arrowsmith 2001; Riach and Kelly 2015), the structure typically is not the focus of ageism research, but only present as a contextual factor—if at all. McGoldrick and Arrowsmith (2001), for instance, link the organizational structure to stereotypes about and discrimination of older workers, to what it means to be old and to possible solutions to ageism in their conceptual scheme, but this is

completely overlooked in their analyses. This lack of attention for organizational structures in ageism literature is in stark contrast with the attention it has in other areas of research concerning discrimination. For instance, there is a vast body of research regarding the discrimination of women in the workforce (Gelfand et al. 2007). Other findings suggest that sexual and racial inequalities in an organizational hierarchy tend to reproduce themselves (Gelfand et al. 2005). Bird and Rhoton (2011) develop this idea further in their research on gender and 'professional bureaucracies'. They identify four components elementary to the professional work organization that are vulnerable to discrimination and as such effectively work as a filter guaranteeing that only individuals complying with the logic of the organization reach higher positions in the organizational hierarchy: the organization of work itself (e.g. work hours), decision-making processes (e.g. who makes the decisions), performance evaluation practices (e.g. which criteria are used in the evaluation) and information networks (e.g. largely informal networks through which individuals gather important information for job performance and career advancement). Regarding the latter, Gelfand et al. (2005) also point to the fact that, in line with the similarity-attraction theory (see further below), individuals tend to form informal networks in an organization with other individuals who are similar to them. In a white male dominated organization, for instance, women and ethnic minorities will have less informal access to those higher in the hierarchy than do white men. In the context of ageism, this would mean that workers may benefit from informal networks if individuals higher up in the hierarchy are of the same generation or, as the flip side of the coin, that they receive less opportunities if that is not the case. Interestingly, in their study in the information technology sector in the Anglo-Saxon world, McMullin et al. (2011) find that hierarchy can be beneficial for older workers. Due to the fast evolution in the information technology sector, programming skills can become outdated rather quickly—hence the finding of McMullin and Dryburgh (2011) that programmers are considered 'old' already in their early 40s (note that this implicitly involves the ageist assumption that workers above age 40 are not able to adapt to changes). By climbing higher in the hierarchy into a managerial position, however, different skills become relevant—skills that are more often attributed to older workers.

That brings us to the role of skills: organizational and company structures, like sectors, demand specific skills. In the words of Miles and Snow (1995, p. 5): "Every organizational form—pyramid or pancake, centralized or decentralized—places unique demands on people." These skills can be the subject of ageist ideas, if for example some skills are being mainly attributed to certain age groups and hence they can be a mediator between the organization of work and discrimination based on age. There is a large agreement in the literature that organizational structures have a 'skill bias' (Caroli and Van Reenen 2001).

Much has been written about the knowledge, skills and creativity of workers being important in processes of organizational change and new forms of organization. Whitley (1989) wrote that managerial work is characterized by its unstandardized nature, orientation towards problem-solving and balancing between reproduction and innovation. In a strongly hierarchical system, these skills would

traditionally be seen as traits of experienced workers in management positions. In new types of organizations with flat hierarchies, where individual workers get more and more tasks and responsibilities (Caroli and Van Reenen 2001), these characteristics are not limited to the management anymore. Such lean organizations redefine and break down established hierarchical models of organizational behaviour and with them the inherent expectations of how age and skill is dispensed within organizations (Ashton 2004; Worley and Doolen 2015). Ashton (2004) argues that such organizations in addition strengthen workers' skills for two reasons; first, to distribute knowledge more widely within the organization, and second, to give workers more opportunities to practice new skills and techniques. Andriopoulos (2001) notes that organizations and companies show an increased focus on creativity and problem-solving, and that flat structures stimulate creativity among their employees. Network organizations, which are flat, flexible and market-oriented, and work with relatively autonomous self-managing teams, require workers who have strong skills ('capabilities') and who are trustworthy (Miles and Snow 1995). Even though none of these studies makes the link with ageism, it is a common finding in studies on ageism that older workers are considered to be less creative though more trustworthy (e.g. Gringart et al. 2005; Taylor and Walker 1998).² Hence, the relationship between these new organizational structures and ageism could be a dual one: on the one hand, the value placed on knowledge and trust may benefit older workers, though the perception of older workers as less creative may be a serious disadvantage for employment of older workers in organizations with flat hierarchies.

5.2.2 Age Structure

'Relative age', referring to an individual's age as compared to the average or mean age in a sector, company or profession (McMullin and Duerden Comeau 2011), is a basis for age discrimination in the labour market—the general idea being that the bigger the difference between the individual's age and what is considered 'normal' for a certain function, the higher the risk for discrimination. Individuals working as programmers in the information technology sector, for instance, could be considered 'old' in their early 40s, while a judge may only reach that point 20 years later (McMullin and Dryburgh 2011). Data from the German Institute for Employment Research Establishment Panel show that older workers (50+ years) are perceived more positively regarding their capabilities and performance by management personnel in companies with a higher share of older workers (Bellmann et al. 2003). However, due to the cross-sectional nature of the analysis, it is not possible to make a statement on the causal direction of the relation.

²According to Binnewies et al. (2008), earlier "[s]tudies reporting relationships between age and creativity most of the times found no relationship (...) or a slightly negative relationship" (p. 442). Their own study suggests that the relation between age and creativity is dependent on the level of job control of the worker.

Kunze et al. (2011) note two general strands in earlier research, linking increased age diversity in an organization to decreasing age discrimination. The first one refers to the contact hypothesis, suggesting that age diversity leads to more contact and familiarity between individuals of different age groups, leading to lower age discrimination. A second strand suggests that increasing age diversity causes workers to believe the organization values diversity, thereby shaping a 'positive diversity climate' (see further below).

However, there are also four prominent hypotheses in the literature expecting the opposite: that ageism will be higher as age diversity in the organization increases. First, the similarity-attraction paradigm suggests people like others they feel are similar to themselves (Kunze et al. 2011, 2013; Shore and Goldberg 2012). Second, according to social identity and self-categorization theory, "individuals tend to classify themselves and others into certain groups on the basis of dimensions that are personally relevant for them" (Kunze et al. 2011, p. 268), and prefer individuals that fall in the same category as themselves (Kunze et al. 2011, 2013; Shore and Goldberg 2012). Growing age diversity might then make age as a trait more salient, and hence an element in this categorization process.

The concept of 'career timetables' is a third hypothesis (Kunze et al. 2011, 2013; Shore and Goldberg 2012). It involves expectations of how individuals move up in the organizational hierarchy as they become older and more experienced, and that employees who 'lag behind' on this schedule—and who are hence surrounded by younger individuals in their work unit—are more likely to face discrimination. A fourth theory is related to 'prototype matching', the idea being that certain jobs are considered to be for a specific group of people, for instance because of the skills or knowledge they require (Kunze et al. 2011; Shore and Goldberg 2012). An older person performing a job that would typically be seen as a job for young people has a higher risk of facing discrimination, just like a younger person who has a job higher up in the hierarchy, while workers think the position requires much knowledge and experience—and should hence be executed by an older person.

While Nishii and Mayer (2009) do not find a relation between age structure in the working unit and experiences of age discrimination among older workers in the United States, Kunze et al. (2011, 2013) do find that higher age diversity leads to more perceived age discrimination among employees in German companies. Interestingly, Kunze et al. (2013) find that this relation is exacerbated when case managers have ageist attitudes, while the presence of diversity-oriented human resource policies has the opposite effect.

5.2.3 Age-Diverse Climate, Age-Friendly Corporate Identity and Leadership

Not only structural characteristics like the size or sector of a company determine the level of ageism at the workplace. 'Soft' factors like company climate, inclusion and diversity policies, and corporate identity are important as well. Four selected factors

in this context—organizational culture, company climate, corporate identity, and leadership—will be the topic of this section. As human resources measurements that can help fight ageism are also immensely important in this regard, they will be discussed separately in the following section.

When researching discriminative behaviour at the workplace Ciampa and Chernesky (2013) distinguish the important concepts of organizational culture and climate. "Organizational culture refers to the deep structure of organizations, rooted in the values, beliefs, and assumptions of organizational members. It is established through socialization to a variety of identity groups that converge in the workplace [...]. The standards against which behavior is evaluated are that of the majority culture, and reflect the attitude and values of those who hold positions of authority and power" (Ciampa and Chernesky 2013, p. 96). Managers should strive for a culture that does not allow discriminative behavior. Organizational or company climate is the sum of all the members' individual psychological climates. Boehm et al. (2013, p. 671) define a climate that hinders the emergence of ageism "[...] as organizational members' shared perceptions of the fair and non-discriminatory treatment of employees of all age groups with regard to all relevant organizational practices, policies, procedures, and rewards." Hence, an age-friendly or age-diversity climate is based on the workers in the organization agreeing that no one should be discriminated because of age.

Closely linked to these rather abstract conceptions of a positive organizational culture and age-diversity climate is the concept of an *age-friendly corporate identity* (Kunze et al. 2011, 2013). Companies should free their internal and external communication of ageist language (Fowler et al. 2015) and avoid discriminative behaviour in the hiring and promotion process. They should seek to design and create products that are not ageist, and not be ageist towards their customers (Stroud and Walker 2013). An age-friendly corporate identity will help to form an age-diverse climate. As already mentioned with the concept of organizational culture, one crucial mediator here is the leadership behaviour of managers and supervisors (Liden et al. 2006). They should internalize the idea of an organization or company without ageism, act accordingly, and serve as role models for the other employees (Nishii and Mayer 2009). By doing so, they can positively influence organizational culture and climate.

5.2.4 Human Resource Measures

In addition to having an age-friendly corporate identity and trying to create an atmosphere in which older workers feel welcome and that their work is appreciated, companies also have or rather should have a human resources management strategy that aims to fight ageism. Several tools can be identified that human resources mangers can use to create an age-friendly climate at the workplace. In the literature (Boehm et al. 2013; Kooij et al. 2010; Lepak et al. 2006), most scholars agree that human resources measures should be age-inclusive, meaning that no workers should

be excluded from human resources programs or ignored in the promotion and recruitment process. In addition, the human resources measures should also follow a certain organizational strategy and not consist of single, isolated tools that are not interrelated (Kunze et al. 2013). Instead the human resources tools should be bundled into one consistent and coherent policy. Three examples of tools that help to decrease ageism at the workplace are inclusion of older workers into training courses, age-blind promotion and hiring processes, and special training courses for older workers. Suspending older workers from training measures and programs because of their age is an ageist action and leaves them with outdated and/or obsolete skills. In addition including workers from different age groups into training courses could actively help to decrease ageism (Brownell and Kelly 2013; Chiu et al. 2001). Drawing on classical contact theory (Aronson et al. 2004) which claims that if individuals from different groups get into contact, this will decrease the stereotypes they hold of each other, one could argue that these age-inclusive training programs lead to fewer age stereotypes, and consequently to less ageism at the workplace. A second important human resource tool in the fight against ageism is age-blind promotion (Machado and Portela 2013) and recruitment procedures (Ahmed et al. 2012). They help to ensure that older workers are not discriminated against when applying at a company or for a new job in the same company. Deleting the applicant's age from the curriculum vitae and, thus, having age-blind applications is one practical measure to ensure age-blind promotion and recruiting procedures (Rocco et al. 2014). Besides the age-inclusive general human resources approach and the age-blind promotion and recruiting procedures, companies can also offer specific human resource programs for older workers (Göbel and Zwick 2013). Such specific programs might include part time retirement, support for caring obligations, retirement consultation, and life work-time accounts—the latter allowing older workers to 'save' over-time working hours over several years and use them to work less later on (Burke and Ng 2006). These help older workers to live up to their potential and be productive employees (Picchio and Van Ours 2013; Göbel and Zwick 2013). This in turn will decrease the occurrence of ageism at the workplace. However, one has to acknowledge that human resources measures aimed at fighting ageism might actually increase it. One unintended consequence of ageblinded promotion and recruitment and special training programs for older workers might be that they are seen as groups that receive undeserved benefits and this might result in ageism (Dipboye and Colella 2013; Lyon et al. 1998).

5.2.5 Company Size

Closely linked to the question of the prevalence of age-friendly human resource measurements is the question of company size. Since small and medium sized companies (<250 employees) are rather the rule than the exception in a majority of countries, taking a closer look at their relation to ageism might be worthwhile.

When taking human resource measurements into account, a rather easy assumption would be: Small companies have less means to implement age management measures, which have shown to tackle negative stereotyping of older workers (Kunze et al. 2013; Fuertes et al. 2013), while larger sized companies already widely adapted these measures (Leber et al. 2013). Furthermore, small companies are more likely to not feel the need to change their policies due to changing legislation concerning ageism (Metcalf and Meadows 2010), they do not see older workers as the solution for labour market shortages (Van Dalen et al. 2009) and offer fewer training possibilities for older workers (Taylor 2011), although research in this regard is inconclusive. When for instance asked for less institutionalized, work-integrated measures for older workers, smaller companies have shown to offer these on the same level as companies with more employees (Naegele and Frerichs 2015).

Regarding the perception of older workers, various studies affirm that in smaller companies, older workers are viewed more positively than in companies with larger workforces (Bellmann et al. 2003; Boockmann and Zwick 2004). Similar results have been found when asked about self-perceived stereotyping: Older workers employed by small companies report to be more frequently confronted with positive stereotyping than older employees working in larger companies (Hess 2013). Flat hierarchies and close social embeddedness within the respective workforce, the monopoly held by older workers on company-specific knowledge (Hilzenbecher 2006), or the fact that older workers often hold key positions within small companies, which are unlikely to be filled easily by others such as younger workers (Beck 2013), could be explanatory factors for the relatively positive view on older workers within small and medium sized enterprises. Additionally—even though often not sufficiently recognized—the prevalence of less formal, work-integrated measures focused on older workers in small and medium sized companies could also be a preventive factor for ageist behaviour.

5.3 Contextual Factors as Sources of Ageism at the Workplace

5.3.1 Industrial and Sectorial Affiliation

Not only the size of a company or the age structure of its labour force influence the perception of older workers in their work environment, the same goes for the sector or industry in which older workers are employed. According to 'age-typed theory' by Oswick and Rosenthal (2001) workers are judged by the fit between the requirement of a particular job and the assumed competences they bring to the table. Negative stereotyping and ageist behaviour towards older workers may result from a perceived 'lack of fit' between a job's requirement and the abilities of a worker. Within certain sectors job requirements 'match up' better with competences

generally attributed to older workers (such as stability, loyalty or experience) and therefore these sectors may supply more 'fitting places' of work for older employees (Richardson et al. 2013; Turek and Perek-Bialas 2013). An easy example can be drawn by looking at the German craft sector—a work environment which highly depends on knowledge as well as experience of workers, both attributes generally ascribed to older workers (Hilzenbecher 2006). Whereas in small craft businesses, older workers are often highly valued and their retirement day considered a dreaded event, research has shown that in other industries, where the question of productivity of workers is high on the agenda, older workers are more often confronted with negative stereotyping (Van Dalen et al. 2010; Malmberg et al. 2008). Hess (2013) estimated differences between sectors and/or industries in Germany by focusing on the prevalence of stereotyping experienced by workers (49+ years). A more positive stereotyping—'older workers being more reliable than their younger colleagues'—was often found in the retail and health care sectors, whereas negative stereotypes—'older workers being less adaptable' and/or 'less productive' occurred more often in the educational sector, public administration as well as manufacturing. Henkens (2005) finds that amongst Dutch mangers in the public sector, negative stereotypes towards older workers are much stronger than in the private sector. He suggests this might be due to the seniority-based salary system and high job-protection.

The sectorial variations in employment rates of older workers are also found to be influential of a negative age-discrimination climate in industries and ultimately companies (Kunze et al. 2013; Stettes 2012). The cultural and political contexts or more generally speaking the 'institutional surroundings' in which employers operate (e.g. when hiring an older worker) are linked not only to the major changes in national level policies but also to experiences with and normative assumptions about older workers within their respective sectors/industries (Shiu et al. 2015). Employers with a high share of older workers (50+ years) in their respective companies are more likely to report that older workers are less often sick than their younger counterparts, whereas management personnel from 'younger' companies do not share this perception (Stettes 2009). Whereas sectors such as agriculture and fishing are known for employing the oldest workforces (Macinol 2010), in sectors with a predominantly younger workforce such as advertising (Carrigan and Szmigin 2003), older job seekers are often more liable to age discrimination (Richardson et al. 2013). Nevertheless, this behaviour is reported to go both ways. Metcalf and Meadows (2010) concluded from a British survey that close to one fifth of employers viewed certain jobs as more suitable for particular age groups, with a tendency to favour the middle age group (30–50 years old) over not only older but also younger workers (Taylor 2011).

5.3.2 Legal Framework for Prohibiting Discrimination Based on Age

Discriminating behaviour based on age in the field of employment and occupation has been subject to legal controls for several decades (Doron et al. 2013). While acknowledging the wide range of legislations worldwide, due to the level of sophistication, the existing European legal framework presents an especially interesting case in this regard and will be discussed in the following section.³

Since the broadening of the scope of anti-discrimination measures beyond sex and nationality with the Amsterdam Treaty (1997), the European Union limits the circumstances under which member states may permit employers a different treatment of workers on the ground of age. Imposed under the European Council directive 2000/78/EC, member states are to be encouraged to combat early resigning as well as to facilitate the hiring, employment, career development and retirement of older workers (Numhauser-Henning 2013; O'Cinneide 2005). By 2006, almost all of the member states had implemented the directive in their national discrimination, employment and labour laws (Spencer 2013).

While prohibiting age discrimination is an important legal mechanism in order to promote the equal treatment of older workers in employment, training and the workplace, it is questionable how successful these non-discrimination laws are in practice. Taking the example of compulsory retirement practices, some authors have argued that legal retirement ages are one of the leading forms of age discrimination, since they exclude people *en masse* from the workforce, solely due to their age (Walker 1990). Other authors concluded that driven by economic and political interest's mandatory retirement can be interpreted as an institutionalized form of ageism (McDonald 2013; Woolever 2013).

A steady stream of law cases was brought to the Court of Justice of the European Union and while one would expect compulsory retirement age to be contrary to the ban on discriminatory behaviour based on age, so far the Court of Justice of the European Union has accepted age limits if proportionate means of achieving a legitimate aim arise. The court has argued that 'age' is to be set apart from other protected characteristics under the Discrimination Directive because it is shared by everyone and can be seen as a continuum which changes over time: Over the span of a lifetime, almost every worker will benefit from provisions targeting older workers (Vickers and Manfredi 2013). Secondly, according to the Directive a different treatment of workers does not constitute age discrimination if one does not distinguish based on individual factors but based on "legitimate employment policy, labour market and vocational training objectives" (Numhauser-Henning 2013, p. 401).

³ For a more detailed overview on this topic please see Doron et al. (2018; Chap. 19); Mikołajczyk (2018; Chap. 20) and Georgantzi (2018; Chap. 21) as well as Abuladze and Perek-Białas (2018; Chap. 28) in this volume.

Even if such discrimination lawsuits make it to court the 'learning effect' on the employer's side seems to be rather questionable as the review of recent literature addressing age-related cases from the United States of America reveals: It seems that a number of legal firms have established themselves in the lucrative market of assisting human resource managers to avoid lawsuits by terminated older workers. Instead of advising management to adapt more ethical practices towards their older workers, these legal firms specialize in preventing companies to become the target of age-related lawsuits in the first place (Woolever 2013). Furthermore, research has shown that even though legal frameworks are in place individuals are reluctant to acknowledge ageist behaviour (and go to court for it), possibly due to the fact that they do not view themselves as being 'old' and therefore attribute perceived harassment at the workplace as not being related to their age (Blackstone 2013). In addition, in contrast to their younger counterparts, older workers tend to not report harassment at the workplace, while at the same time employers, lawyers as well as other actors within the legal system, tend to treat age discrimination cases as less serious than race or gender based offences (Spencer 2013).

Taking a look at the hiring practice, the existing limitation of laws become obvious: Oblivious to existing legal regulations, ageism can occur in hiring practices when human resource personnel "consciously or subconsciously applies age limits to older applicants" (Spencer 2013, p. 147). Existing stereotypes regarding the productivity or performance of older workers on the employer or human resource side furthermore might lead to older workers taking longer to find new employment or when being reemployed tend to receive a lower salary than in their former employment (Woolever 2013). Although their importance is non-negotiable, laws are often insufficient to guide the personnel actions of human resource managers as a wide range of policies and actions fall outside the domain of the law. Therefore, ethics in general as well as a company's attitude towards their ageing workforce become increasingly important in the daily work of human resource managers.

5.4 Conclusion: Fighting Ageism at the Workplace

Against the background of ageing societies in general and an ageing workforce in particular, the subject of old age discrimination at the workplace has moved into the spotlight. Age discrimination or ageism has among others a negative impact on older workers' productivity, quality of work and organizational commitment and, thus, also harms the companies and organizations they are working in. Therefore, fighting ageism must be a priority of policy makers, employers and trade unions. To mitigate the effects of age discrimination, we must know its origins. In this chapter, we focused on the meso-level and the origin of ageism at the workplace. Seven main determinants of ageism were detected: organizational structure and hierarchy; age structure; age-diverse climate; human resources measures; company size; industrial and sectoral affiliation; and the legal framework.

Regarding a company's *organizational structure*, four components were identified at which age discrimination is possible: the organization of work itself; decision making process; performance evaluations; and information networks. Moreover, the formal and informal structure of the organization determines the need for certain skills over others, and these skills can be the subject of ageism. Hence, there can be an indirect effect of the organizational structure on ageism through skills. Our literature review reveals a striking lack of research on the relation between age and organizational structure, especially when compared to research on gender and organizations. This could be an interesting path to develop in future research.

A company's *age structure* can influence the occurrence of ageism in two ways: on the one hand growing age diversity can lead to more contact between workers of different ages and, thus, reduce ageism. On the other hand, it could make age as a category more salient and increase its importance as an element of categorization and potentially lead to discrimination because of age.

Company size is linked with ageism in two ways: Larger companies have institutionalized human resources departments offering age management measures that help to tackle ageism. At the same time, the informal organizational structure of smaller companies might help to create contacts between different generations of workers and, thus, decrease ageism. In addition, less formal work-integrated measures might likewise contribute to a more positive reception of older workers in small and medium sized companies. Further research in this regard could add valuable input to the debate.

A coherent *human resources* strategy—e.g. age inclusive training programs and an age blind recruitment and promotion procedure—will help to reduce ageism. Closely linked to the human resource strategy, the concept of *age friendly climate and corporate identity* can play an important role. Creating an atmosphere of ageist-free language, procedures and products is an important step to fight ageism.

Whereas the first five determinants are closely linked to the company level, the last two determinants of ageism at the workplace—*industrial and sectorial affiliation* and the *legal framework*—are located between the meso and macro level and therefore policy makers and stakeholders have to put the topic of ageism actively on the political agendas in order to prevent ageist behaviour in the workforce.

What implications can be drawn from this analysis of ageism's sources at the workplace? First, it is important to recognize that older and younger workers are both valuable members of the workforce, and policies should refrain from playing out different labour market groups against each other. Second, employers and trade unions should try to create an ageist-free environment at the workplace. One main tool to do so is the implementation of human resource measures as described above. Third, when trying to fight ageism, companies must seek for tailor fit solutions according to their sizes, sector and the age compositions of their employees. A 'one size fits all' approach will not be sufficient in order to prevent discrimination based on age in the labour market. Fourth, the state should set a legal framework that in alliance with companies' anti-discrimination measures grants workers protection from discrimination based on age. Last, all efforts to combat discrimination because

of age at the workplace should be synchronized with each other and be embedded into a general strategy of fighting ageism not only at the workplace but also in society in general.

References

- Abuladze, L., & Perek-Białas, J. (2018). Measures of ageism in the labour market in international social studies. In L. Ayalon & C. Tesch-Römer (Eds.), *Contemporary perspectives on ageism: Vol. 19. International perspectives on aging* (pp. 459–489). Berlin: Springer.
- Ahmed, A. M., Andersson, L., & Hammarstedt, M. (2012). Does age matter for employability? A field experiment on ageism in the Swedish labour market. *Applied Economics Letters*, 19(4), 403–406.
- Andriopoulos, C. (2001). Determinants of organisational creativity: A literature review. *Management Decision*, 39(10), 834–841.
- Aronson, E., Wilson, T., & Akert, R. (2004). Sozialpsychologie. München: Pearson.
- Ashton, D. N. (2004). The impact of organisational structure and practices on learning in the work-place. *International Journal of Training and Development*, 8(1), 43–53.
- Ayalon, L. (2013). Feelings towards older vs. younger adults: Results from the European Social Survey. *Educational Gerontology*, *39*(12), 888–901.
- Bal, A. C., Reiss, A. E., Rudolph, C. W., & Baltes, B. B. (2011). Examining positive and negative perceptions of older workers: A meta-analysis. *Journal of Gerontology: The Journals of Gerontology, Series B*, 66(6), 687–698.
- Beck, V. (2013). Employers' use of older workers in the recession. *Employee Relations*, 35(3), 257–271
- Bellmann, L., Hilpert, M., Kistler, E., & Wahse, J. (2003). Herausforderungen des demografischen Wandels für den Arbeitsmarkt und die Betriebe. *Mitteilungen aus der Arbeitsmarkt- und Berufsforschung, 36*(2), 133–149.
- Binnewies, C., Ohly, S., & Niessen, C. (2008). Age and creativity at work. *Journal of Managerial Psychology*, 23(4), 438–457.
- Bird, S. R., & Rhoton, L. A. (2011). Women professionals' gender strategies: Negotiating gendered organizational barriers. In E. Jeanes, D. Knights, & P. Y. Martin (Eds.), *Handbook of Gender, Work and Organization* (pp. 245–262). Hoboken: Wiley-Blackwell.
- Blackstone, A. (2013). Harassment of older adults in the workplace. In P. Brownell & J. J. Kelly (Eds.), *Ageism and Mistreatment of Older Workers* (pp. 31–49). Dordrecht: Springer.
- Boehm, S. A., Kunze, F., & Bruch, H. (2013). Spotlight on age-diversity climate: The impact of age-inclusive HR practices on firm-level outcomes. *Personnel Psychology*, 67(3), 667–704.
- Boockmann, B., & Zwick, T. (2004). Betriebliche Determinanten der Beschäftigung älterer Arbeitnehmer. Zeitschrift für Arbeitsmarkt- und Berufsforschung (ZAF), 37(1), 53–63.
- Branine, M., & Glover, I. (1997). Ageism in work and employment: Thinking about connections. *Personnel Review*, 26(4), 233–244.
- Brooke, E. (2010). Employment relations and the wage: How gender and age influence the negotiating power of IT workers. In J. A. McMullin & V. W. Marshall (Eds.), *Aging and working in the new economy: Changing career structures in small IT firms* (pp. 88–118). Cheltenham: Edward Elgar.
- Brownell, P., & Kelly, J. J. (Eds.). (2013). Ageism and mistreatment of older workers: Current reality, future solutions. Dordrecht: Springer.
- Burke, R., & Ng, E. (2006). The changing nature of work and organizations: Implications for human resource management. *Human Resource Management Review*, 16(2), 86–94.
- Butler, R. N. (1969). Age-ism: Another form of bigotry. Gerontologist, 9(4), 243–246.

- Cardoso, A. R., Guimarães, P., & Varejão, J. (2010). Are older workers worthy of their pay? An empirical investigation of age-productivity and age-wage nexuses (IZA discussion paper No. 5121).
- Caroli, E., & Van Reenen, J. (2001). Skill-biased organizational change? Evidence from a panel of British and French establishments. The Quarterly Journal of Economics, 116(4), 1449–1492.
- Carrigan, M., & Szmigin, I. (2003). Regulating ageism in UK advertising: An industry perspective. Marketing Intelligence and Plan, 21(4), 198–204.
- Chiu, W., Chan, A. W., Snape, E., & Redman, T. (2001). Age stereotypes and discriminatory attitudes towards older workers: An East-West comparison. *Human Relations*, 54(5), 629–661.
- Ciampa, E., & Chernesky, R. (2013). Creating supportive workplace environments for older workers. In P. Brownell & J. J. Kelly (Eds.), *Ageism and mistreatment of older workers* (pp. 93–111). Dordrecht: Springer.
- Dipboye, R. L., & Colella, A. (Eds.). (2013). *Discrimination at work: The psychological and organizational bases*. New York: Psychology Press.
- Doron, I., Brown, B., & Somers, S. B. (2013). International protection for the human rights of older people: History and future prospects. In P. Brownell & J. J. Kelly (Eds.), *Ageism and mistreatment of older workers* (pp. 165–181). Dordrecht: Springer.
- Doron, I., Numhauser-Henning, A., Spanier, B., Georgantzi, N., & Mantovani, E. (2018). Ageism and anti-ageism in the legal system: A review of key themes. In L. Ayalon & C. Tesch-Römer (Eds.), *Contemporary perspectives on ageism: Vol. 19. International perspectives on aging* (pp. 303–320). Berlin: Springer.
- Fowler, C., Gasiorek, J., & Giles, H. (2015). The role of communication in aging well: Introducing the communicative ecology model of successful aging. *Communication Monographs* (e-pub ahead of print), 1–27.
- Frerichs, F., Lindley, R., Aleksandrowicz, P., Baldauf, B., & Galloway, S. (2012). Active ageing in organisations: A case study approach. *International Journal of Manpower*, 33(6), 666–684.
- Fuertes, V., Egdell, V., & McQuaid, R. (2013). Extending working lives: Age management in SMEs. *Employee Relations*, 35(3), 272–293.
- Gelfand, M. J., Raver, J. L., Nishii, L. H., & Schneider, B. (2005). Discrimination in organizations: An organizational-level systems perspective. In R. L. Dipboye & A. Colella (Eds.), *Discrimination at work: The psychological and organizational bases* (pp. 89–116). New York: Psychology Press.
- Gelfand, M. J., Nishii, L. H., Raver, J. L., & Schneider, B. (2007). *Discrimination in organizations: An organizational-level systems prespective* (CAHRS Working Paper 07–08).
- Georgantzi, N. (2018). The European union's approach towards ageism. In L. Ayalon & C. Tesch-Römer (Eds.), Contemporary perspectives on ageism: Vol. 19. International perspectives on aging (pp. 341–368). Berlin: Springer.
- Göbel, C., & Zwick, T. (2013). Are personnel measures effective in increasing productivity of old workers? *Labour Economics*, 22(1), 80–93.
- Gringart, E., Helmes, E., & Speelman, C. P. (2005). Exploring attitudes toward older workers among Australian employers. *Journal of Aging & Social Policy*, *17*(3), 85–103.
- Hedge, J. W. (Ed.). (2012). *The Oxford handbook of work and aging*. Oxford: Oxford University Press.
- Henkens, K. (2005). Stereotyping older workers and retirement: The managers' point of view. *Canadian Journal on Aging*, 24(4), 353–366.
- Hess, M. (2013, September 5–7). Age-stereotypes and their effect on retirement intensions. Paper presented at the 11th annual ESPAnet conference in Poznan.
- Hilzenbecher, U. (2006). Wachstumsstrategien für KMUs. In R. Berndt (Ed.), *Management-Konzepte für Kleine und Mittlere Unternehmen* (pp. 85–111). Berlin: Springer.
- Kalwij, A., Kapteyn, A., & de Vos, K. (2010). Retirement of older workers and employment of the young. De Economist, 158(4), 341–359.

Kooij, D. T. A. M., Jansen, P. G. W., Dikkers, J. S. E., & de Lange, A. H. (2010). The influence of age on the associations between HR practices and both affective commitment and job satisfaction: A meta-analysis. *Journal of Organizational Behavior*, 31(8), 1111–1136.

- Kunze, F., Boehm, S. A., & Bruch, H. (2011). Age diversity, age discrimination climate and performance consequences A cross organizational study. *Journal of Organizational Behavior*, 32(2), 264–290.
- Kunze, F., Boehm, S., & Bruch, H. (2013). Organizational performance consequences of age diversity: Inspecting the role of diversity-friendly HR policies and top managers' negative age stereotypes. *Journal of Management Studies*, 50(3), 413–442.
- Leber, U., Stegmaier, J., & Tisch, A. (2013). Altersspezifische Personalpolitik: Wie Betriebe auf die Alterung ihrer Belegschaft reagieren (IAB-Kurzbericht No. 13).
- Lepak, D. P., Liao, H., Chung, Y., & Harden, E. H. (2006). A conceptual review of human resource management systems in strategic human resource management research. In J. J. Martocchio (Ed.), Research in personnel and human resources management (Vol. 25, pp. 217–271). Oxford: Elsevier.
- Liden, R. C., Erdogan, B., Wayne, S. J., & Sparrowe, R. T. (2006). Leader-member exchange, differentiation, and task interdependence: Implications for individual and group performance. *Journal of Organizational Behavior*, 27(6), 723–746.
- Lyon, P., Hallier, J., & Glover, I. (1998). Divestment or investment? The contradictions of HRM in relation to older employees. *Human Resource Management Journal*, 8(1), 56–66.
- Machado, C. S., & Portela, M. (2013). Age and opportunities for promotion (IZA Discussion Paper No. 7784).
- Macinol, J. (2010, August). Ageism and age discrimination: Some analytical issues. ILC-UK think-piece.
- Malmberg, B., Lindh, T., & Halvarsson, M. (2008). Productivity consequences of workforce aging: Stagnation or Horndal effect? In A. Prskawetz, D. E. Bloom, & W. Lutz (Eds.), *Population aging, human capital accumulation, and productivity growth* (pp. 238–257). New York: Population Council.
- McDonald, L. (2013). The evolution of retirement as systematic ageism. In P. Brownell & J. J. Kelly (Eds.), *Ageism and mistreatment of older workers* (pp. 69–93). Dordrecht: Springer.
- McGoldrick, A. E., & Arrowsmith, J. (2001). Discrimination by age: The organizational response. In I. Glover & M. Branine (Eds.), *Ageism in work and employment* (pp. 75–95). Aldershot: Ashgate.
- McMullin, J., & Dryburgh, H. (2011). Gender, age, and work in the new economy. In J. A. McMullin (Ed.), *Age, gender, and work: Small information technology firms in the new economy* (pp. 3–17). Vancouver: UBC Press.
- McMullin, J., & Duerden Comeau, T. (2011). Aging and age discrimination in IT firms. In J. A. McMullin (Ed.), *Age, gender, and work: Small information technology firms in the new economy* (pp. 133–158). Vancouver: UBC Press.
- McMullin, J., Jovic, E., & Duerden Comeau, T. (2011). Generational and age discourse in IT firms. In J. A. McMullin (Ed.), *Age, gender, and work: Small information technology firms in the new economy* (pp. 113–132). Vancouver: UBC Press.
- Metcalf, H., & Meadows, P. (2010). Second survey of employers' policies practices and preferences relating to age. London: Department for Business, Innovation and Skills.
- Mikołajczyk, B. (2018). The council of europe's approach towards ageism. In L. Ayalon & C. Tesch-Römer (Eds.), Contemporary perspectives on ageism: Vol. 19. International perspectives on aging (pp. 321–339). Berlin: Springer.
- Miles, R. E., & Snow, C. C. (1995). The network firm: A spherical structure built on a human investment philosophy. *Organizational Dynamics*, 23(4), 5–18.
- Naegele, L., & Frerichs, F. (2015). Kompetenzentwicklung und Laufbahngestaltung im Handwerk: Die Situation älterer Mitarbeiterinnen und Mitarbeiter (Newsletter Gerontologie No. 6).
- Ng, T. W. H., & Feldman, D. C. (2008). The relationship of age to ten dimensions of job performance. *The Journal of applied psychology*, 93(2), 392–423.

- Ng, T. W. H., & Feldman, D. C. (2012). Evaluating six common stereotypes about older workers with meta-analytical data. *Personnel Psychology*, 65(4), 821–858.
- Nishii, L. H., & Mayer, D. M. (2009). Do inclusive leaders help to reduce turnover in diverse groups? The moderating role of leader-member exchange in the diversity to turnover relationship. *Journal of Applied Psychology*, 94(6), 1412–1426.
- Numhauser-Henning, A. (2013). The EU ban on age-discrimination and elderly workers: Potential and pitfalls. *International Journal of Comparative Labour Law and Industrial Relations*, 29(4), 391–414.
- O'Cinneide, C. (2005). Age discrimination and European Law. Luxembourg: EUR-OP.
- Orpen, C. (1995). The effects of perceived age discrimination on employee job satisfaction, organizational commitment and job involvement. *Psychology*, 32(3–4), 55–56.
- Oswick, C., & Rosenthal, P. (2001). Towards a relevant theory of age discrimination in employment. In M. Noon & E. Ogbonna (Eds.), *Equality, diversity and disadvantage in employment* (pp. 156–171). Hampshire: Palgrave.
- Picchio, M., & Van Ours, J. C. (2013). Retaining through training even for older workers. *Economics of Education Review, 32*(C), 29–48.
- Riach, K., & Kelly, S. (2015). The need for fresh blood: Understanding organizational age inequality through a vampiric lens. *Organization*, 22(3), 287–305.
- Richardson, B., Webb, J., Webber, L., & Smith, K. (2013). Age discrimination in the evaluation of job applicants. *Journal of Applied Social Psychology*, 43(1), 35–44.
- Rocco, T. S., Thijssen, J. G. L., & Githens, R. P. (2014). The myths of ageing and decline: Career development and employability of older workers. In J. Walton & C. Valentin (Eds.), *Human resource development: Practices and orthodoxies* (pp. 184–201). Basingstoke: Palgrave Macmillan
- Rothenberg, J. Z., & Gardner, D. S. (2011). Protecting older workers: The failure of the age discrimination in employment act of 1967. *Journal of Sociology and Social Welfare*, 38(1), 9–30.
- Schermuly, C., Deller, J., & Büsch, V. (2014). A research note on age discrimination and the desire to retire: The mediating effect of psychological empowerment. *Research on Aging*, 36(3), 382–393.
- Shiu, E., Hassan, L. M., & Parry, S. (2015). The moderating effects of national age stereotyping on the relationships between job satisfaction and its determinants: A study of older workers across 26 countries. *British Journal of Management*, 26(2), 255–272.
- Shore, L. M., & Goldberg, C. B. (2012). Age discrimination in the workplace. In R. L. Dipboye & A. Colella (Eds.), *Discrimination at work: The psychological and organizational bases* (pp. 203–225). New York: Psychology Press.
- Snape, E., & Redman, T. (2006). Too old or too young? The perceived impacts of age discrimination. *Human Resource Management Journal*, 13(1), 78–89.
- Spencer, C. (2013). Legal and legislative issues in protecting older adults in the workplace: An international perspective. In P. Brownell & J. J. Kelly (Eds.), Ageism and mistreatment of older workers (pp. 145–165). Dordrecht: Springer.
- Stettes, O. (2009). Altersbilder in deutschen Industrieunternehmen und Personalpolitik für ältere Beschäftigte. *IW-Trends aus dem Institut der deutschen Wirtschaft Köln, 36. Jahrgang* (4).
- Stettes, O. (2012). Altersbilder in deutschen Industrieunternehmen und Personalpolitik für ältere Beschäftigte. In F. Berner, J. Rossow, & K.-P. Schwitzer (Eds.), Altersbilder in der Wirtschaft, im Gesundheitswesen und in der pflegerischen Versorgung (pp. 25–43). Wiesbaden: VS Verlag für Sozialwissenschaften.
- Stroud, D., & Walker, K. (2013). Marketing to the ageing consumer: The secrets to building an age-friendly business (pp. 184–201). Basingstoke: Palgrave Macmillan.
- Taylor, P. (2011). Ageism and age discrimination in the labour market and employer responses. In T. Griffin & F. Beddie (Eds.), *Older workers. Research findings* (pp. 46–64). NCVER: Adelaide.
- Taylor, P., & Walker, A. (1998). Employers and older workers: Attitudes and employment practices. Ageing and Society, 18(6), 641–658.

Thorsen, S., Rugulies, R., Longaard, K., Borg, V., Thielen, K., & Bjomer, J. B. (2012). The association between psychosocial work environment, attitudes towards older workers (ageism) and planned retirement. *International Archive of Occupation Environmental Health*, 85(4), 437–444.

- Turek, K., & Perek-Bialas, J. (2013). The role of employers opinions about skills and productivity of older workers: Example of Poland. *Employee Relations*, 35(6), 648–664.
- Van Dalen, H. P., Henkens, K., & Schippers, J. (2009). Dealing with older workers in Europe: A comparative survey of employers' attitudes and actions. *Journal of European Social Policy*, 19(1), 47–60.
- Van Dalen, H. P., Henkens, K., & Schippers, J. (2010). Productivity of older workers: Perceptions of employers and employees. *Population and Development Review*, 36(2), 309–333.
- Vickers, L., & Manfredi, S. (2013). Age equality and retirement: Squaring the circle. *Industrial Law Journal*, 42(1), 61–74.
- Walker, A. (1990). The benefits of old age? Age discrimination and social security. In E. McEwen (Ed.), *Age: The unrecognised discrimination* (pp. 58–70). London: Age Concern.
- Whitley, R. (1989). On the nature of managerial tasks and skills: Their distinguishing characteristics and organization. *Journal of Management Studies*, 26(3), 209–224.
- Woolever, J. (2013). Human resource departments and older adults in the workplace. In P. Brownell & J. J. Kelly (Eds.), *Ageism and mistreatment of older workers* (pp. 111–135). Dordrecht: Springer.
- Worley, J. M., & Doolen, T. L. (2015). Organizational structure, employee problem solving, and lean implementation. *International Journal of Lean Six Sigma*, 6(1), 39–58.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

