GUEST EDITORIAL

Facilitating age diversity in organizations – part I: challenging popular misbeliefs

Guido Hertel
Department of Organizational & Business Psychology, University of Münster, Münster, Germany

Béatrice I.J.M. van der Heijden
Institute for Management Research, Radboud University Nijmegen, Nijmegen, The Netherlands, Open Universiteit in The Netherlands, Heerlen, The Netherlands and University of Twente, Enschede, The Netherlands

Annet H. de Lange
Department of Human Resource Management, Radboud University Nijmegen, Nijmegen, The Netherlands, and

Jürgen Deller
Institute for Strategic HR Management Research and Development (SMARD), Leuphana University Lüneburg, Lüneburg, Germany and Silver Workers Research Institute, SRH Hochschule Berlin, Berlin, Germany

Abstract

Purpose – In recent years, significant demographic changes in most industrial countries have tremendously affected the age distribution of workers in organizations. In general, the workforce has become more age-diverse, providing significant and new challenges for human resource management and leadership processes. The current paper aims to address age-related stereotypes as a major factor that might impede potential benefits of age diversity in organizations.

Design/methodology/approach – After a brief review of potential detrimental effects of age-related stereotyping at work, the authors discuss the validity of typical age stereotypes based on new findings from large-scale empirical research with more than 160,000 workers overall.

Findings – Although the research summarized in this review is based on large samples including several thousand workers, the cross-sectional nature of the studies does not control for cohort or generational effects, nor for (self-)selection biases. However, the summarized results still provide important guidelines given that challenges due to age diversity in modern organizations today have to be dealt with regardless of the concrete origins of the age-related differences.

Originality/value – This is one of the first reviews challenging popular misbeliefs about older workers based on large-scale empirical research.

Keywords Age, Stereotypes, Ageing workforce, Demographic change, Age diversity

Paper type Literature review

This manuscript was handled by Dianna L. Stone as Action Editor. Writing this review was supported by a research grant from the Deutsche Forschungsgemeinschaft to the first author (HE 2745/11-3).

Journal of Managerial Psychology
Vol. 28 No. 7/8, 2013
pp. 729-740

0268-3946
DOI 10.1108/JMP-07-2013-0233

The demographic changes that take place in many industrialized countries create unique difficulties as well as challenges for the management of work organizations. In particular, a continuously growing number of older workers with, at the same time, a constant and rather low number of young potentials require adaptations in many human resource management (HRM) strategies, such as recruiting, staffing, leadership, career development, and incentive programs (Hedge *et al.*, 2006; Ilmarinen, 2005). In addition to age-related differences in physical and cognitive capacities, age-related changes in job-related attitudes, needs, and work experiences have to be considered as well (Hertel *et al.*, 2013b; Kooij *et al.*, 2011; Ng and Feldman, 2010). For instance, both Kooij *et al.* (2011) and Hertel *et al.* (2013b) found a significant negative relationship between age and growth-related motives, whereas positive affect at work as well as high fit between personal needs and job characteristics seem to be positively related with age and more important for older workers (e.g. Krumm *et al.*, 2013). Moreover, generativity motives (e.g. helping others, legacy, passing on personal experiences, etc.) have been shown to be higher for older as compared to younger workers (Hertel *et al.*, 2013b). Obviously, it is of utmost importance that management of work organizations incorporate the implications of these outcomes in their HRM practices. That is to say, in order to comply with workers' needs throughout their careers, management should take a life-span perspective to ageing at work.

In addition, addressing the growing age diversity in teams and in leader-follower interactions is an important success factor of work organizations, and needs to be more carefully studied (e.g. Horwitz and Horwitz, 2007; Joshi and Roh, 2009; Wegge *et al.*, 2008). Notably, the current demographic changes do not only create challenges for both management and employees, but might also offer new opportunities due to a higher diversity of skills and multiple perspectives at work. At the same time, employees have to find motivating conditions throughout their career to utilize all their capabilities, to compensate for possibly lacking competencies, and to initiate learning processes throughout their working life (Stamov-Roßnagel and Hertel, 2010). Therefore, managers in work organizations need to know more about age-related differences in order to adapt their HRM strategies and leadership styles in an effective and sustainable way.

Although research activities on older workers and on generational differences at work have increased over the past years, as for instance indicated by various special issues that appeared over the last years on this topic (e.g. Issues 4 and 8 of Volume 23 of *Journal of Managerial Psychology*; Issue 2 of Volume 84 of *Journal of Occupational and Organizational Psychology*; Issue 2 of Volume 32 of the Journal of Organizational Behavior; Issue 2 of Volume 8 of *Zeitschrift für Personalpsychologie*; forthcoming issue of *European Journal of Work and Organizational Psychology*), many questions are still open given that in most empirical studies so far age has been merely considered as a control variable (de Lange *et al.*, 2010). Moreover, the described demographic changes are happening right now, and thus require constantly updated research approaches, as well as timely proposals including the question how to convert research findings into HRM strategies and leadership.

The objective of this Special Issue is to present new research that might help to facilitate age diversity in organizations, and to benefit rather than to suffer from the inevitable demographic changes. Due to the many high quality submissions we have received for this Special Issue, we are very glad that both the editor and the publisher

of *Journal of Managerial Psychology* provided us with space for two Special Issues, including ten excellent and innovative contributions on this important and fascinating topic. Half of these contributions focus on challenges and risks of age diversity in organizations, reflected in specific perception and interaction processes, and will be presented in the second Special Issue (for a summary, see Hertel *et al.*, 2013a). The current issue focuses on advantages of the current demographic changes, and particularly on strengths of older workers that are often neglected and overlooked due to age-related biases and misbeliefs (e.g. Finkelstein *et al.*, 1995; Posthuma and Campion, 2009; Rauschenbach *et al.*, 2012; van der Heijden *et al.*, 2009). Calling into question and – if necessary – refuting such negative pre-assumptions about older workers based on rigor scientific research certainly contributes to the facilitation of age diversity in organizations today and in the future.

Age stereotypes at work describe beliefs that people have about workers and their work behavior as a function of their chronological or perceived age (e.g. Posthuma *et al.*, 2012). While evidence does exist for positive stereotypes about older workers (e.g. high reliability and strain resistance), negative stereotypes seem to be more prevalent (e.g. lack of competence; cf. Bal *et al.*, 2011; Hassell and Perrewe, 1995; Posthuma and Campion, 2009; Posthuma *et al.*, 2012). Moreover, the effect size of negative stereotypes about older workers seems to be much stronger than effect sizes of positive stereotypes about older workers (Meisner, 2012). The evidence for negative age stereotypes at the workplace has revealed that older workers ought to battle continuously biased supervisory perceptions regarding their level of employability and career success (van der Heijden *et al.*, 2009). These results have far-reaching consequences for work-related attitudes, decisions and behavior (Posthuma *et al.*, 2012), and, even more seriously, may eventually trigger self-fulfilling prophecies (Boerlijst *et al.*, 1993) so that older workers become indeed less motivated for continuous growth, leading to more negative supervisory attitudes, etc. For example, a study of Greller and Stroh (2004) showed that negative stereotypes about development ability play a central role in predicting a declining motivation, and, eventually, the retirement of older workers. Thus, age stereotypes might trigger self-fulfilling prophecies of older workers because people come to understand what is expected from them by looking for cues and role definitions provided by others.

The new studies published in this Special Issue on facilitating age diversity in work organizations provide an intriguing collection of empirical research on age differences in work-related attitudes and competencies that contribute to the correction of possible biased age perceptions. The authors of all five contributions challenge popular misbeliefs about older workers, and provide both systematic empirical data on overlooked potentials of older workers as well as sound explanations of the underlying mechanisms of the observed age differences that are interesting for both scientists and practitioners alike.

In the first contribution, entitled "Age, resistance to change and job performance", Kunze *et al.* (2013) explore one of the most popular reservation about older workers, i.e. that older workers are more cognitively rigid, more short-term focused, and thus more resistant to change than their younger colleagues (e.g. Finkelstein *et al.*, 1995; Weiss and Maurer, 2004). Based on a sample of 2,981 employees from diverse companies in Germany, the authors found instead that older workers were less resistant to change than their younger colleagues. Thus, even though the effect is

rather small ($r = -0.07$), the results are not consistent with the common stereotype. The authors explained this result based on higher emotional regulation capacities of older persons (e.g. Gross *et al.*, 1997) that might help to overcome difficulties in times of change. Moreover, building upon the selection, optimization and compensation model (Baltes and Baltes, 1990), Kunze *et al.* (2013) suggest that older persons might be more prone to adaptations if they have sufficient skills and job autonomy. Indeed, further moderation analyses showed that the observed age difference is strongest for white-collar workers with rather low tenure. The relevance of these results is further underlined by a significant negative correlation between resistance to change and job performance, suggesting that change-related attitudes partly mediate age differences on job performance.

In the second contribution, entitled "Work-family conflict across the lifespan", Huffmann *et al.* (2013) examine age differences in work-family conflicts. Given that both individual needs and environmental conditions vary across workers' life, the quality of the integration of work and family-related issues was hypothesized to vary too. Indeed, the authors expected a curvilinear relation between chronological age and amount of work-family conflict, showing the highest conflict level for middle-aged workers. This hypothesis was tested in two large samples of working adults in the USA ($n = 3,552$ and 2,852, respectively). The results support the assumed curvilinear relationship, showing that conflicting demands between work and home were indeed lower for younger and older workers as compared to their middle-aged counterparts. The interrelation between age and work-family conflicts was mediated by the average work hours per week. In addition, family dissatisfaction and indicators of childcare demands were highest for the middle-aged workers. These results are congruent with other research showing curvilinear rather than linear relations between chronological age and work-related demands (e.g. Rauschenbach and Hertel, 2011). Moreover, these results support life-span models that suggest a specific "sandwich" position for middle-aged workers due to multiple demands from work and family life (e.g. Heckhausen, 2001; Riley and Bowen, 2005). Thus, the results contrast popular beliefs about a general increase of vulnerability at work with higher age, showing that older workers rather seem to have – on average – more resources and fewer work-family conflicts than their middle-aged colleagues, and therefore a better work-life balance.

This general pattern is confirmed and extended in the third contribution to this Special Issue, entitled "Age and work-related stress: a review and meta-analysis" (Rauschenbach *et al.*, 2013). One goal of this contribution was to challenge the popular assumption that stress resilience generally declines when workers mature (e.g. Rauschenbach *et al.*, 2012). Focussing on proximal consequences of stress at work (i.e. ruminations and irritability; Mohr *et al.*, 2006) rather than distal consequences (e.g. emotional exhaustion, cf. Ng and Feldman, 2010), the authors start with a review of potential effects of chronological age on strain experience at work. Indeed, age might affect strain experience in quite different ways. While vulnerability to certain stressors can increase with age due to changes in physical and/or cognitive capacities, aging might also be connected with gaining resources, such as growing emotion regulation skills and self-knowledge that in turn might reduce stress experience at work. Moreover, objective work conditions might vary across the life span due to different career stages, role conflicts, or additional family

demands (e.g. Heckhausen, 2001; Riley and Bowen, 2005; see also Huffmann *et al.*, 2013). Thus, instead of a single mechanism of age on stress experience, multiple mechanisms are to be considered that might partly compensate each other. As a consequence, the resulting overall strain experience at work may be uncorrelated with chronological age, and may be more strongly related to specific moderators such as job type. Indeed, the meta-analytic results reported in this contribution based on 66 samples with a total of 233 effect sizes and a sample size of $n = 29,806$ (mostly from Europe) showed no significant overall correlation between chronological age and proximal strain experience ($r = 0.02$). However, strain experience was positively related to age in jobs with high physical demands (e.g. construction workers), and curvilinearly related to strain in jobs with high social demands (e.g. teachers), indicating the highest strain for middle-aged workers in the latter category. Overall, these data refute general pre-assumptions about a lower stress tolerance of older workers (for similar results regarding distal stress reactions of older workers, see also Ng and Feldman, 2010).

In the fourth contribution to this Special Issue, entitled "Organizational justice, sickness absence and employee age", Tenhiälä *et al.* (2013) examine reactions of younger and older workers to organizational justice. Based on a large sample of Finnish public sector employees ($n = 37,324$), the authors matched survey data with workers' records-based sick absences in the following years. This design enabled prospective predictions and avoids common-method variance between perceptions of organizational justice and data on sick leave. The results not only replicated that older workers are generally less likely to take short voluntary sick leaves (see also Hackett, 1990, Martocchio, 1989; Ng and Feldman, 2008). In line with the hypotheses derived from the selection, optimization and compensation model (Baltes and Baltes, 1990), workers' chronological age moderated the association between perceived procedural justice and longer sick leaves with medical certification even after controlling for tenure, occupational group, gender, and job demands. In general, older workers seem to be more sensitive to procedural justice. Although procedural justice certainly benefits all workers, high procedural justice seems to be particularly important as a means to reduce longer sick leaves of older workers. Thus, the typical result that older workers have a slightly higher risk of long sick leaves (e.g. Ng and Feldman, 2008) is moderated by organizational factors that can be clearly influenced by managers.

Finally, the fifth contribution to this Special Issue, entitled "Age and environmental sustainability: a meta-analysis" (Wiernik *et al.*, 2013) examines age differences in environmental values and attitudes that are relevant for work organizations. Given that economic activities are a major source of environmental problems today, managers should become concerned about sustainable business practices both in order to protect the environment as well as for strategic reasons (public relations, recruiting and retaining workers, etc.). Notably, the American Psychological Association has recently installed a task force on the interface between psychology and global climate change that considers age to be a conceptually relevant variable. Understanding age-related differences in environmental values and attitudes might help work organizations to improve pro-environmental initiatives among their employees. The starting-point of the meta-analytic study was again popular beliefs in organizations that older workers might be less concerned with environmental protection, and might be less trainable in this respect as compared to their younger colleagues. Indeed,

considering perceptions of remaining time as a central motivating factor (e.g. Carstensen, 2006), older workers might have less reason to engage in environmentally sustainable behavior. However, the empirical data reported in this meta-analysis clearly speak against this negative perception of older workers. This result is even more remarkable because the authors aggregated data from 220 independent samples from the last four decades, representing 87,988 unique individuals overall. Using a differentiated measure of environmental attitudes and behaviors, small yet significant age differences occurred for protecting behaviors. In contrast to popular beliefs, older persons seem to be not less but more likely than their younger colleagues to show behaviors that protect the ecosystem and conserve raw materials and natural resources. This pattern was particularly observed in studies published in 1995 and later, indicating additional cohort effects. Moreover, age was unrelated to other forms of environmental behaviors or environmental attitudes in general. Thus, negative stereotypes suggesting that older workers are rather unlikely proponents of environmental sustainability did not gain empirical support. On the contrary, the authors argued that working organizations might particularly rely on older workers in initiatives to become more environmentally responsible, and that younger workers might benefit from modeling behaviors of their older colleagues in this respect.

Together, the five contributions provide intriguing examples how popular beliefs and stereotypes about older workers can be wrong and misleading. Remarkably, these results cannot simply be attributed to chance, given that the sample sizes of the five studies are all very large, varying between 2,800 and 37,000 individuals in the single studies, and 29,000 and 87,000 in the two meta-analyses. Given that misled pre-assumptions about older workers not only affect management and personnel decisions in organizations but may also influence the self-perception of older workers in terms of self-categorization and self-fulfilling prophecies, the detrimental effects of such wrong conceptions cannot be overestimated. Therefore, the empirical studies reported in this Special Issue might provide an important mean to prevent age discrimination in work organizations, and to motivate managers and HR consultants to reflect critically on their stereotypes and expectations based on empirical research.

Given that all five contributions describe cross-sectional research, they do not provide information on age-related changes *within* workers over time. While such longitudinal information is of course desirable to better understand developmental aspects of aging at work as well as to distinguish "pure" aging effects from generational or cohort effects, the present results are still very informative for managerial decisions and organizational interventions as they reflect the various aspects of age diversity in organizations today that have to be addressed regardless of the underlying processes that have led to the observed age differences (see also Wiernik *et al.*, 2013).

In a similar way, age differences found in cross-sectional studies might be partly affected by (self-)selection biases due to the so-called "healthy worker effect" (e.g. Baillargeon, 2001). Given that workers have to be relatively healthy and active to be employable, those with reduced work capacities and/or motivation might leave the workforce earlier, and therefore do not occur in samples of older workers. Thus, correlational analyses between age and work capacities or motivation might overestimate genuine ageing effects on these outcome variables. Of course,

longitudinal research is desirable to control for such "healthy worker effects". However, similar as with cohort effects discussed earlier, managers have to deal with age diversity and age differences that are present today in work organizations. These differences are addressed in all five contributions. Moreover, at least some of the main results concern interactions rather than main effects, the former being largely unaffected by selection biases.

Another remarkable commonality of the five contributions is that all of them strongly allude to life-span theories when deriving their hypotheses or integrating their results, in particular the selection, optimization, and compensation model of Paul and Margret Baltes (e.g. Baltes and Baltes, 1990; Baltes and Dickson, 2001) and the socio-emotional selectivity theory of Laura Carstensen (e.g. Carstensen, 2006). This illustrates that managerial psychology can strongly benefit from the integration of research from other disciplines. However, further development and refinement of these theories might, in turn, benefit from applied research in work organizations. For instance, realizing that today's older workers (i.e. aged 50-65 years) are rather middle-aged individuals according to general life-span models requires modifications of the interpretation of different age-related processes when applied to the work context. This is emphasized by reports of work activities of retirees (e.g. Deller and Maxin, 2009) further expanding the age range of the workforce based on their work ability and motivation. Moreover, the underlying mechanisms (e.g. future time perspective) might be quite different at work and in private life, leading to interesting interactions and even to partly compensating processes. Future research is desirable to address these issues in more detail.

Although age differences in organizations have received increasing research attention in the last years, systematic research on age diversity and related changes in organizations is still at the beginning. Important questions that remain for future research include mediating and moderating mechanisms of age differences on organizational outcome variables, such as future work time perspective, perceived self-efficacy, gender, etc. (e.g. de Lange *et al.*, 2011; Zacher and Frese, 2009). Another important stream of research comprises studies on "relational demography", exploring the comparative demographic characteristics of dyad or group members who interact regularly (e.g. Tsui *et al.*, 2002). Applied to the work context, such research might contribute to a better understanding how differences in age diversity in work team or between a superior and a subordinate might affect workers' attitudes and work behavior (van der Heijden *et al.*, 2010).

Moreover, more empirical work is needed to better understand degrees of individual variability in growth curves on work behavior, and the causes of these differences. For instance, individual work behavior can either follow a linear process, or an up- or downward ("burning candle") process, or a curvilinear pattern (small to broad or reverse). A special focus in this regard comprises research on long-term change patterns in short-term dynamic processes using diary studies or related measurements of experiences on the job (e.g. Grube *et al.*, 2008). Such long-term intra-individual development in work behavior is an emerging field of research that requires significant advances both in theoretical as well as methodological respects (Schalk *et al.*, 2011).

In addition to theoretical implications, the contributions to this Special Issue suggest various practical recommendations that might support a better integration of older workers in work organizations as an important part to facilitate age diversity at

the workplace. Fundamental for this is the development of HRM strategies that adopt a life-span perspective of work. During the last decades, work-life in many countries has ended for most workers closer to 60 than to 65 years, often in early retirement before the age of 60. Therefore, HRM systems and leadership have concentrated on individuals between 15 to 55 years of age. Many organizations did not even employ individuals older than 50 years. Therefore, competencies how to manage and lead older individuals has gradually disappeared. In times of demographic change, however, not only has macro level politics made decisions to extend work life by delaying retirement age (e.g. from 65 to 67 years in Germany). This leads, on average, to an increase of average age at work. At the same time, at the individual or micro level, a growing number of employees are willing to even work beyond retirement age. These developments will force organizations to adapt their HRM and leadership strategies to address a considerably wider age span of workers at the meso level. Thus, organizations need to develop their practices in a life-span perspective from young to old. The papers of this Special Issue present findings at the micro level with consequences for both, the micro and the meso level. Rigorous research results teach practice to rethink and adjust beliefs about people to overcome stereotypes and develop realistic appraisals. This seems to be especially true for negative stereotypes. Organizations need to learn that chronological or perceived ages can be traps that outshine reality and prevent a precise perception of individual aspects, work ability, and motivation. Variance of work ability grows with age. Therefore, age is not the only variable to look at. The older employees are, the more important is the analysis of the individual situation. Leadership programs need to reflect this. And HRM can support this individualized approach by offering programs that can be tailored to the individual situation. It is important for organizations to act and develop a comprehensive age-friendly culture at the workplace that reflects the life-span perspective we can learn from developmental psychology.

Before closing, we want to thank all our colleagues who have contributed manuscripts to this Special Issue, as well as the anonymous reviewers who have been of enormous help to further strengthen and clarify each of the contributions. Moreover, we want to thank the Editor-in-chief, Dianna Stone, the Editorial Assistant Kay Wilkinson, and the publisher of *Journal of Managerial Psychology* for providing the two Special Issues as a fantastic outlet of research on facilitating age diversity in work organizations.

References

Bal, A.C., Reiss, A.E.B., Rudolph, C.W. and Baltes, B.B. (2011), "Examining positive and negative perceptions of older workers: a meta-analysis", *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, Vol. 66 No. 6, pp. 687-698.

Baltes, P.B. and Baltes, M.M. (1990), "Psychological perspectives on successful aging: the model of selective optimization with compensation", in Baltes, P.B. and Baltes, M.M. (Eds), *Successful Aging: Perspectives from the Behavioral Sciences*, Cambridge University Press, Cambridge, pp. 1-34.

Baltes, B.B. and Dickson, M.W. (2001), "Using life-span models in industrial-organizational psychology: the theory of selective optimization with compensation", *Applied Developmental Science*, Vol. 5 No. 1, pp. 51-62.

Baillargeon, J. (2001), "Characteristics of the healthy worker effect", *Occupational Medicine – State of the Art Reviews*, Vol. 16 No. 2, pp. 359-366.

Boerlijst, J.G., van der Heijden, B.I.J.M. and van Assen, A. (1993), *Veertigplussers in de onderneming* (*Over-forties in the Organization*), Van Gorcum/Stichting Management Studies, Assen.

Carstensen, L.L. (2006), "The influence of a sense of time on human development", *Science*, Vol. 312 No. 5782, pp. 1913-1915.

de Lange, A.H., Taris, T.W., Jansen, P.G.W., Kompier, M.A.J., Houtman, I.L.D. and Bongers, P.M. (2010), "On the relationships among work characteristics and learning-related behavior: does age matter?", *Journal of Organizational Behavior*, Vol. 31 No. 7, pp. 925-950.

de Lange, A.H., Bal, M.P., van der Heijden, B.I.J.M., De Jong, N. and Schaufeli, W.B. (2011), "When I'm 64: psychological contract breach, work motivation and the moderating roles of future time perspective and regulatory focus", *Work & Stress*, Vol. 25 No. 4, pp. 338-354.

Deller, J. and Maxin, L.M. (2009), "Berufliche Aktivität von Ruheständlern" ("Post-retirement activity in Germany"), *Zeitschrift für Gerontologie und Geriatrie*, Vol. 42 No. 4, pp. 305-310.

Finkelstein, L.M., Burke, M.J. and Raju, N.S. (1995), "Age discrimination in simulated employment contexts: an integrative analysis", *Journal of Applied Psychology*, Vol. 80 No. 6, pp. 652-663.

Greller, M.M. and Stroh, L.K. (2004), "Making the most of 'late-career' for employers and workers themselves: becoming elders not relics", *Organizational Dynamics*, Vol. 33 No. 2, pp. 202-214.

Gross, J.J., Carstensen, L.L., Pasupathi, M., Tsai, J., Skorpen, C.G. and Hsu, A.Y. (1997), "Emotion and aging: experience, expression, and control", *Psychology and Aging*, Vol. 12 No. 4, pp. 590-599.

Grube, A., Schroer, J., Hentzschel, C. and Hertel, G. (2008), "The event reconstruction method: an efficient measure of experience-based job satisfaction", *Journal of Occupational and Organizational Psychology*, Vol. 81, pp. 669-689.

Hackett, R.D. (1990), "Age, tenure and employee absenteeism", *Human Relations*, Vol. 43, pp. 601-619.

Hassell, B.L. and Perrewe, P.L. (1995), "An examination of beliefs about older workers: do stereotypes still exist?", *Journal of Organizational Behavior*, Vol. 16 No. 5, pp. 457-468.

Heckhausen, J. (2001), "Adaption and resilience in midlife", in Lachman, M.E. (Ed.), *Handbook of Midlife Development*, Wiley, New York, NY, pp. 345-391.

Hedge, J.W., Borman, W.C. and Lammlein, S.E. (2006), *The Aging Workforce: Realities, Myths, and Implications for Organizations*, American Psychological Association, Washington, DC.

Hertel, G., van der Heijden, B.I.J.M., de Lange, A.H. and Deller, J. (2013a), "Facilitating age diversity in organizations – part II: managing perceptions and interactions", *Journal of Managerial Psychology*, Vol. 28 Nos 7/8, pp. 857-866.

Hertel, G., Thielgen, M., Rauschenbach, C., Grube, A., Stamov-Rossnagel, C. and Krumm, S. (2013b), "Age differences in motivation and stress at work", in Schlick, C., Frieling, E. and Wegge, J. (Eds), *Age-differentiated Work Systems*, Springer, Berlin.

Horwitz, S.K. and Horwitz, I.B. (2007), "The effects of team diversity on team outcomes: a meta-analytic review of team demography", *Journal of Management*, Vol. 33 No. 6, pp. 987-1015.

Huffmann, A.H., Culbertson, S.S., Henning, J.B. and Goh, A. (2013), "Work-family conflict across the lifespan", *Journal of Managerial Psychology*, Vol. 28 Nos 7/8, pp. 761-780.

Ilmarinen, J. (2005), *Towards a Longer Worklife*, FIOH Bookstore, Helsinki.

Joshi, A. and Roh, H. (2009), "The role of context in work team diversity research: a meta-analytic review", *Academy of Management Journal*, Vol. 52 No. 3, pp. 599-627.

Kooij, D., De Lange, A., Jansen, P., Kanfer, R. and Dikkers, J. (2011), "Age and work-related motives: results of a meta-analysis", *Journal of Organizational Behavior*, Vol. 32, pp. 197-225.

Krumm, S., Grube, A. and Hertel, G. (2013), "No time for compromises: age as a moderator of the relation between needs-supply fit and job satisfaction", *European Journal of Work and Organizational Psychology*, Vol. 22 No. 5, DOI: 10.1080/1359432X.2012.676248.

Kunze, F., Boehm, S. and Bruch, H. (2013), "Age, resistance to change and job performance", *Journal of Managerial Psychology*, Vol. 28 Nos 7/8, pp. 741-760.

Martocchio, J.J. (1989), "Age-related differences in employee absenteeism: a meta-analysis", *Psychology and Aging*, Vol. 4, pp. 409-414.

Meisner, B.A. (2012), "A meta-analysis of positive and negative age stereotype priming effects on behavior among older adults", *The Journals of Gerontology: Series B*, Vol. 67B No. 1, pp. 13-17.

Mohr, G., Müller, A., Rigotti, T., Aycan, Z. and Tschan, F. (2006), "The assessment of psychological strain in work contexts: concerning the structural equivalency of nine language adaptations of the irritation-scale", *European Journal of Psychological Assessment*, Vol. 22, pp. 198-206.

Ng, T.W.H. and Feldman, D.C. (2008), "The relationship of age to ten dimensions of job performance", *Journal of Applied Psychology*, Vol. 93 No. 2, pp. 392-423.

Ng, T.W.H. and Feldman, D.C. (2010), "The relationships of age with job attitudes: a meta-analysis", *Personnel Psychology*, Vol. 63 No. 3, pp. 677-718.

Posthuma, R.A. and Campion, M.A. (2009), "Age stereotypes in the workplace: common stereotypes, moderators, and future research directions", *Journal of Management*, Vol. 35 No. 1, pp. 158-188.

Posthuma, R.A., Fernanda Wagstaff, M. and Campion, M.A. (2012), "Age stereotypes and workplace age discrimination: a framework for future research", in Hedge, J.W. and Borman, W.C. (Eds), *The Oxford Handbook of Work and Aging*, Oxford University Press, New York, NY, pp. 298-312.

Rauschenbach, C., Göritz, A. and Hertel, G. (2012), "Age stereotypes about emotional resilience at work", *Educational Gerontology*, Vol. 38 No. 8, pp. 511-519.

Rauschenbach, C. and Hertel, G. (2011), "Age differences in strain and emotional reactivity to stressors in professional careers", *Stress and Health*, Vol. 27, pp. e48-e60.

Rauschenbach, C., Krumm, S., Thielgen, M. and Hertel, G. (2013), "Age and work-related stress: a review and meta-analysis", *Journal of Managerial Psychology*, Vol. 28 Nos 7/8, pp. 781-804.

Riley, L.D. and Bowen, C. (2005), "The sandwich generation: challenges and coping strategies of multigenerational families", *The Family Journal*, Vol. 13 No. 1, pp. 52-58.

Schalk, M.J.D., van der Heijden, B.I.J.M., De Lange, A.H. and Van Veldhoven, M.J.P.M. (2011), "Editorial: Long-term developments in individual work behaviour: patterns of stability and change", *Journal of Occupational and Organizational Psychology*, Vol. 84, pp. 215-227.

Stamov-Roßnagel, C. and Hertel, G. (2010), "Older workers' motivation: against the myth of general decline", *Management Decision*, Vol. 48 No. 6, pp. 894-906.

Tenhiälä, A., Linna, A., von Bonsdorff, M.E., Pentti, J., Vahtera, J., Kivimäki, M. and Elovainio, M. (2013), "Organisational justice, sickness absence and employee age", *Journal of Managerial Psychology*, Vol. 28 Nos 7/8, pp. 805-825.

Tsui, A.S., Porter, L.W. and Egan, T.D. (2002), "When both similarities and dissimilarities matter: extending the concept of relational demography", *Human Relations*, Vol. 55 No. 8, pp. 899-929.

van der Heijden, B.I.J.M., Scholarios, D., van der Schoot, E., Jędrzejowicz, P., Bozionelos, N., Epitropaki, O., Knauth, P., Marzec, I., Mikkelsen, A., van der Heijde, C. and Indic@tor Study Group (2010), "Can we buffer age-related stereotyping at the workplace?", *International Journal of Aging & Human Development*, Vol. 71 No. 3, pp. 231-258.

van der Heijden, B.I.J.M., De Lange, A.H., Demerouti, E. and van der Heijde, C.M. (2009), "Age as moderator in the relationship between self- versus supervisor ratings of employability and career success", *Journal of Vocational Behavior*, Vol. 74 No. 2, pp. 156-164.

Wegge, J., Roth, C., Neubach, B., Schmidt, K.-H. and Kanfer, R. (2008), "Age and gender diversity as determinants of performance and health in a public organization: the role of task complexity and group size", *Journal of Applied Psychology*, Vol. 93 No. 6, pp. 1301-1313.

Weiss, E.M. and Maurer, T.J. (2004), "Age discrimination in personnel decisions: a re-examination", *Journal of Applied Social Psychology*, Vol. 34 No. 8, pp. 1551-1562.

Wiernik, B.M., Ones, D.S. and Dilchert, S. (2013), "Age and environmental sustainability: a meta-analysis", *Journal of Managerial Psychology*, Vol. 28 Nos 7/8, pp. 826-856.

Zacher, H. and Frese, M. (2009), "Remaining time and opportunities at work: relationships between age, work characteristics, and occupational future time perspective", *Psychology and Aging*, Vol. 24 No. 2, pp. 487-493.

About the Guest Editors

Guido Hertel is Full Professor of Organizational and Business Psychology at the University of Münster, Germany. His current research interests include effects of demographic changes for work organizations, synergy effects in teams, negotiation and conflict management, and electronic human resource management. The research of Guido Hertel has been published in more than 70 peer-reviewed journal articles (e.g. *Journal of Personality and Social Psychology*, *Journal of Applied Psychology*, *Journal of Management*, *Research Policy*, *Journal of Occupational and Organizational Psychology*, *European Journal of Work and Organizational Psychology*, *Human Resource Management Review*, *Journal of Vocational Behavior*) and in many books and book chapters. More information about his work is available at: www.uni-muenster.de/owms/en/. Guido Hertel is the corresponding author and can be contacted at: ghertel@uni-muenster.de

Béatrice I.J.M. van der Heijden is Full Professor of Strategic HRM, at Radboud University, Nijmegen, The Netherlands. She is Head of the Department of Strategic HRM and Director of the Research Program of Responsible Organization. Moreover, she is affiliated as Full Professor of Strategic HRM at the Open Universiteit in The Netherlands and at the University of Twente, The Netherlands. She holds an MA in Work and Organizational Psychology from Radboud University, and a PhD in Management Science from the University of Twente. In 2000, she was a Visiting Professor at the University of Strathclyde in Glasgow (Scotland, UK). Her main research areas are career development, employability, and aging at work. Béatrice van der Heijden is Associate Editor for *European Journal of Work and Organizational Psychology*, and has published, in *Journal of Vocational Behavior*, *HRM*, *Journal of Occupational and Organizational Psychology* and *Career Development International*, among others.

Annet H. de Lange works as a Professor at the Department of HRM at the University of Applied Sciences in Arnhem and Nijmegen, The Netherlands and is affiliated with the Department of Work, Stress and Health of Radboud University, Nijmegen. Her research activities have been focused on "Sustainable work ability and HRM", focusing on topics like longitudinal research, intra- and inter-individual age effects across time, and conceptualizing aging at work. Her research has been successful, culminating in a *cum laude* Doctorate, and several honorary prizes (IBM Frye Stipendium, André Büssing Memorial Price, Stichting Praemium Erasmianum

Prize, *Journal of Occupational Health Psychology* Best Paper of Past Ten Years Award). Furthermore, she serves as consulting editor on journals such as *Work & Stress* and *European Journal of Work and Organizational Psychology*, and has served as Special Guest Editor of several Special Issues focusing on aging at work (*Journal of Managerial Psychology*, *Journal of Organizational and Occupational Psychology*, *Gedrag & Organisatie*). More information on her work can be found at: www.annetdelange.nl

Professor Jürgen Deller is a Full Professor of Organizational Psychology and the founding speaker of the Institute for Strategic HR Management Research and Development (SMARD) at Leuphana University Lüneburg, Germany. He has published work on retirement (silver work), ageing workforce issues, management development, and international HR, and has served as Guest Editor of Special Issues on work-related topics, including ageing at work (*Journal of Managerial Psychology*, *Zeitschrift für Personalpsychologie*, now *Journal of Personnel Psychology*). Before he accepted a tenured professorship, he worked for the corporate headquarters of Daimler-Benz group, Stuttgart, and later with DaimlerChrysler Services (debis) AG, Berlin, as senior manager responsible for the HR board member's office and as head of corporate leadership development IT services.