

National Institute on Aging | Division of Behavioral and Social Research

Work, the Workplace, and Aging

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Teleconference Summary

Participants

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Laura Carstensen, Ph.D., Department of Psychology, Stanford University

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Sara Czaja, Ph.D., Department of Psychiatry and Behavioral Sciences, University of Miami

Joachim Fischer, MD, Mannheim Institute of Public Health, Heidelberg University

Jim Harter, Ph.D., Workplace Management and Well-being, Gallup, Inc.

Erin Kelly, Ph.D., Sloan School of Management, Massachusetts Institute of Technology

Phyllis Moen, Ph.D., Sociology Department, University of Minnesota

David Rehkopf, Ph.D., Med/Primary Care and Population Health, Stanford University

NIA Coordinators

Amelia Karraker, Ph.D., Division of Behavioral and Social Research

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Introduction

In 2013, the National Advisory Council on Aging recommended that the National Institute on Aging's (NIA) Division of Behavioral and Social Research (BSR) pursue initiatives to understand workplace qualities and policies that promote health and support work into older ages, and to develop interventions to extend work life and promote health, particularly among the most vulnerable members of the workforce. Recent scientific workshops have also highlighted the importance of investigating whether and how the changing nature of work affects health and health disparities. To address these recommendations, BSR is formulating a research agenda focused on work, the workplace, and aging.

As the first step, BSR commissioned a multidisciplinary group of thought leaders in work and aging research from fields such as economics, psychology, epidemiology, and sociology to write short papers outlining their recommendations for research priorities. The papers reflected what each scientist believed were the most pressing research needs, based on their expertise and emerging directions in their respective fields. The authors met for two-hour teleconferences on December 21, 2017 and January 12, 2018. During the first call, participants discussed the key points from their papers and identified common themes among the papers. The second call, chaired by Drs. Laura Carstensen and Phyllis Moen, further expounded on key themes and promising methodological approaches.

Orientation

Dr. Lisbeth Nielsen oriented participants to the meeting's objectives, providing background information about BSR and describing BSR's goals in developing a research agenda on work, aging, and purposeful

Summary prepared by Laura Major, MPH, National Institute on Aging

engagement. Nielsen noted that findings link continued work and volunteering with better cognitive function. However, the nature of the workplace is rapidly changing, and it is unknown how shifts in aspects of work and the workplace relate to cognitive function and engagement with work at older ages. A deeper understanding of the impact of factors ranging from technological innovations, workplace practices, and social policies is needed to elucidate causal relationships between work and health in later life. Nielsen also charged participants to think about the economic implications of work for older people, especially the factors that allow people to remain financially independent and maintain their current standard of living in retirement. Lastly, Nielsen underscored the purpose of the teleconference: to identify research priorities in order to move the agenda forward.

Review of Papers

Lisa Berkman, Ph.D.

Dr. Lisa Berkman's paper focused on the diversity of studies that should be brought to bear to understand work and health and identified two themes that cross-cut the different study types. The first theme is that people are heterogeneous. Though the majority of individuals are working longer, some people will have disability and physically demanding and/or low-wage jobs, where working longer is not an option. Any research plan should be attuned to this heterogeneity. The second theme is that there are many people who leave the workforce by 50 years old, and not much is known about this population (e.g., why they left the workforce), so a large cohort of people is invisible. Uncovering information about this cohort is challenging, but increasingly important for research on work and health.

Pointing out that one study can never provide all the information researchers needs, Berkman outlined the potential contributions of different types of observational and experimental studies. In terms of observational studies, one approach would be to draw on existing longitudinal cohorts, such as the Health and Retirement Study and Add Health. Using data from these cohorts would be an inexpensive way to identify who is working longer and examine the effects of working longer. Observational studies can also elucidate issues related to work and family balance. It is important to have a contemporary perspective when it comes to family, as there are different family constellations that may interact in different ways with work (e.g., what it means to have more than one job, job stability, job precarity). Additionally, Berkman suggested starting new occupational cohorts, ideally multiple new cohorts or one that includes several occupations, in order to examine company level policies and practices, work unit interactions (managers and employees), and benefits that may impact employee health.

Berkman also highlighted the importance of experimental studies. Quasi- and natural experiments can be used to investigate the effects of policy changes. For example, states are adopting broader medical, parental, and disability leave policies, and obtaining before and after data allows researchers to evaluate the effects of different policies. There are opportunities for this type of research at the state, city, and corporate levels. In the case of fully randomized control trials, Berkman suggested that, rather than launching one mega-study at the outset, it may be more fruitful to do many smaller, collaborative studies first to better understand intervention mechanisms as well as strategies for recruitment and retention.

Laura Carstensen, Ph.D.

Dr. Laura Carstensen, an expert in motivation and emotion in aging, highlighted three salient points from her paper. First, it is necessary to better understand both the physical and cognitive consequences

of work for individuals, as studies suggest there may be benefits to working over retiring. However, important questions remain about what kinds of work are most beneficial and for whom. For example, Carstensen pointed out that while people in high complexity jobs do not show substantial decline after retirement, the opposite is true for those in low complexity jobs.

The second key issue regards age diversity. Carstensen noted that we are reaching a point where we will have the most age diversified workforce in history. It is important to understand the skills each age groups brings and determine how to organize teams and workplaces to leverage different skillsets. For example, positive changes in emotional stability are associated with aging, and can impact turnover and mentorship opportunities, but skills like emotional stability are rarely evaluated at work.

Finally, Carstensen discussed beliefs and stereotypes about older workers. There is considerable evidence that employers—and younger employees—do not think highly of older workers, which can influence an older worker's performance and, consequently, their decision to retire or remain in the workforce. Carstensen concluded by stating the need to add to the literature on the behavioral differences displayed by older and younger individuals at work.

Courtney Coile, Ph.D.

Dr. Courtney Coile's research focuses on the economic determinants of retirement. From an economist's perspective, the worker is viewed as a rational, forward-looking consumer who is thinking about the costs and benefits of work when planning retirement. One of the factors influencing this decision is health, which, when poor, can make a person more likely to retire. However, while some individuals retire because of poor health, generally, health declines only gradually in an individual's 60s, yet this is the time when most people retire. In fact, health does not drive most retirements. Financial incentives play a big role in a person's decision to retire, as well as non-financial factors including workplace attributes (e.g., ability to telework, paid time off). Coile highlighted a need for future research on whether and how improving population health will affect work trends and for experiments that vary workplace attributes to determine their effect on retirement decisions.

In the past, economists have focused less on the demand for older workers, but as changing policies and expectations urge people to work longer, understanding what is happening on the demand side will be critical, including the role of age discrimination. Coile suggested stimulating new research in this area, including use of big data to address age discrimination. Changes in the economy, such as increasing automation and contract-related work, offer opportunities to revisit the relationships between age, wages, and productivity to evaluate whether there are jobs that are better for older workers.

Lastly, Coile is also interested in better understanding what employers can do to support workers at the onset of disability. She suggested thinking about how to incentivize employers to do more to support the worker at the point of disability onset in order to help them stay on the job. This could include financial incentives for employers who provide accommodations to recently-disabled employees. Relatedly, researchers could focus on understanding how employer accommodations or lack thereof affect employees' decisions to remain in the workforce.

Sara Czaja, Ph.D.

Dr. Sara Czaja's background is in psychology, behavioral sciences, aging, and cognition, with foci on intervention research and the implications of technology. Czaja's paper discussed the changing nature of work, including new types of work (e.g., teamwork) and workplace technology as well as how these

transformations reshape work processes, job contents, where work is performed, and training strategies. Workplace changes have tremendous implications for workers, especially those in lower complexity jobs who are trying to reenter or remain in the workplace, and not enough is known about strategies to promote reentry of these workers, particularly when skill obsolescence and need for training are salient issues.

Czaja also indicated that it is important to take a broader perspective when thinking about age in the workplace and not paint everyone over age 65 with the same broad brush, noting that the number of individuals who are 75 years and older in the workforce is increasing. There is also a need for new work performance measures. Current assessments are usually based on the quantity, not quality, of work accomplished or are based on a supervisor's ratings, where age-related biases come into play.

Czaja concluded by discussing research areas that need to be enhanced. She raised the importance of studying the relationship between caregiving and work and work performance, stating that research in this area is underdeveloped. Additionally, new research is lacking on training, especially for new jobs. There is a need for new training strategies, as many employers expect workers to begin a position with skills they need, but it is unclear where or how people should obtain these skills. Relatedly, there is a need to study how to best to optimize online training for older workers.

[Joachim Fischer, M.D.](#)

Dr. Joachim Fischer's research focuses on biological mechanisms, social work conditions, and accelerated aging. Fischer's paper brought a European perspective to the panel, leveraging data from a company he developed that consults with BMW and other large companies. Fischer began with a discussion of different types of heterogeneity in the workplace. One is heterogeneity in the health and cognitive status of individual workers. Additionally, Fischer noted that there is a new social gradient between large companies that have resources to deal with issues and small companies that do not have those resources. There is also heterogeneity within companies that have worksites in different locations, which can provide opportunities for natural experiments by examining differences among different physical locations within one company.

Fischer then turned to describing the role of economics in the workplace. He reiterated the importance of developing new metrics and working with economists to develop key performance indicators that integrate complex constructs into one number. He also pointed out the need to better understand how work context affects an individual's motivation to work. In places where the majority of people enjoy their job, employees are less likely to retire, and productivity is higher. In workplaces with low job enjoyment, there is a high percentage of health-related early retirement. Lastly, Fischer noted that, as people age and start to care for their parents and see their children leave home, they become aware of the scarcity of their remaining lifetime, which is another driver of financial decisions.

Fischer ended by underscoring the importance of working with small-to-medium enterprises to build community networks with all stakeholders (e.g., houses of worship, local sports clubs) in order to have everyone at the table to think about how to resolve issues.

[Jim Harter, Ph.D.](#)

Dr. Jim Harter's expertise is in measurement-based and applied psychology and his research focuses on studying organizations from the inside. He is also increasingly interested in the macroeconomic influences on the workplace (e.g., employment rates influencing a person's opportunity to choose

whether and where they work). Harter's discussion centered on what workplaces can do to influence the experience of workers. There is a difference in work engagement levels between Baby Boomers under and over the age of 60, with the younger Boomers being less engaged. Additionally, traditionalists (i.e., those born between 1900 and 1945) tend to have the highest levels of engagement in their jobs, which may reflect the financial ability to be able to choose the type of work one does.

Harter also described how, as workers get older, their opportunities for development and learning decrease in comparison with younger workers. Harter highlighted the need for companies to focus on employee development continually as people change skills and adjust to automation. Relatedly, Harter noted that manager training is essential and that the type of training a manager receives can impact how successful a workplace is.

Echoing Czaja and Fischer's comments, Harter discussed how performance measurement relates to performance management. In other words, employee engagement is affected by whether employees feel they are measured and rewarded in a fair way, whether they are involved in setting expectations, and whether they have good managers. Harter summed his discussion by stating that it is important to understand the experience of the worker in the workplace as well as to understand trends in how many and which workers are leaving the workforce too soon, changing jobs, and/or working longer.

[Erin Kelly, Ph.D.](#)

Dr. Erin Kelly is an organizational sociologist interested in both worker health and well-being and the experiences of employers, managers, coworkers and customers or clients. Kelly focuses her research on the intersection of work and caregiving and whether and how workplaces are organized to reflect that many workers have periods of time when they need to provide caregiving and/or attend to their own health. Not enough is currently known about how changing family and sick leave laws may impact older workers' experiences on the job and their ability to continue working longer. Additionally, leave policies are administered differently across workplaces, and there is a big gap between having the law on the books in a company and what employees are actually able to access. Importantly, disadvantaged workers are much less likely to be tied to compliant organizations.

Kelly also highlighted the need to investigate age discrimination related to how coworkers and managers respond to older workers and how that affects an older worker's ability to push for more or different workplace attributes. One such attribute is schedule control. The ability to have a say in one's work schedule may affect older workers in particular, so it is important to determine how work teams and managers can learn to work effectively under conditions of increased schedule variation and schedule control.

Finally, Kelly discussed the changing work force and the rise of alternative work arrangements. It is valuable to not only think about flexible jobs in the context of a gig economy, but also think about how positions that have a paycheck, social support, and benefits can be made more flexible.

[Phyllis Moen, Ph.D.](#)

Dr. Phyllis Moen, an expert in the sociology of work, family, and health, underscored the need for a convergence research agenda that brings to bear multiple disciplines and that expands the definition of work to include unpaid civic engagement, volunteer work, and caregiving, examining the health consequences of different forms of work. Paid work trajectories across the life course are changing, and it is necessary to not only investigate the workplace and selection into work, but to also gain a better

understanding of who is in the workforce, who leaves the workforce, and who reenters the workforce in the changing career and retirement pathway.

Moen also discussed the importance of social participation and engagement as essential components of healthy work. Research on this topic would investigate such questions as whether people love what they do, whether their job has purpose and meaning, and whether they are voluntarily working or must work. These human meaning factors, which can also be applied to retirement, have significant consequences for productivity and health. Moreover, context affects social engagement and health, and experiences and conditions differ among older workers. Vulnerable subgroups may have more constraints and fewer opportunities, leading to different outcomes. Moen stated that there is a need to dive deep using intersectional studies that consider factors such as gender and race and ethnicity in addition to age to understand this heterogeneity of experiences.

Moen concluded by describing the need to conduct research on how policy and technological innovations can be used to bring willing workers and jobs together. Such research would include a focus on the demand side, enhancing the desirability of having older workers in the workforce. There are opportunities for both randomized and natural experiments to determine which policies and/or technologies work and which need to be changed. Understanding the effects of evolving policies and technologies can help promote healthy work over the life course.

David Rehkopf, Ph.D.

Dr. David Rehkopf, a social epidemiologist who explores social and economic contexts across the life course, reviewed the importance of understanding and measuring cumulative exposures. Rehkopf pointed out that workers experience multiple exposures at work simultaneously related to physical environment, pay, and psychosocial factors, and that these exposures accumulate over a long time. In order to gain a better understanding of how work affects health, it is necessary to measure all of these exposures in aggregate using a longitudinal perspective, as only examining one aspect or one snapshot in time will not provide the full picture. The exposures about which the least is known are performance management and manager training, and that future research in this area should focus on managers.

Next, Rehkopf discussed the need to explore the effects of blue collar employment on health. While manufacturing jobs are a diminishing part of the workforce, they are not diminishing as quickly as commonly believed, and such jobs are a key part of explaining inequality. Additionally, some older workers may have had a position in manufacturing as their primary employment, but are no longer working in that type of job, which could also impact one's health.

Finally, Rehkopf noted that workplace wellness programs usually target physical activity or another health-related domain and are typically intended to have an effect on a single outcome. Addressing a factor like performance management could impact many outcomes in addition to health, including productivity and functional status. This indicates the need for prioritizing research that focuses on workplace programs that have the greatest benefit and incorporate measurement of multiple outcomes.

December 21, 2017 Teleconference Discussion

In open discussion, participants identified common themes from the papers and acknowledged substantial thematic overlap. Many identified the need for new metrics and measures; the importance of workplace context; how the changing nature of work may affect health; whether training, technology,

and policies to promote health and support longer work lives can be enhanced; and the need to explore psychological factors like motivation, meaning, and purposeful engagement as essential parts of healthy work. The discussion delved deeper into some of these topics and added research priorities not previously identified, including management, workplace interventions, and the role of employers in research.

Measurement and Metrics

The measurement and metrics portion of the discussion focused on how researchers should examine multiple outcomes in both health and work domains and how current metrics may not be appropriate for valuing the contributions of older workers. Rather than focusing on a narrow outcome of a workplace health improvement intervention, like exercise, researchers should look at multiple outcomes, including measures of health and functioning as well as measures of productivity and subjective well-being.

Czaja underscored the need for new metrics that focus on what the worker does, and the resultant benefit incurred by workplace. Current metrics, such as those based on output, reinforce notions of stereotypes of older workers. Kelly concurred, stating that there are unintended consequences of current measurement practices for both the workers and the organization, as they can lead to older workers leaving their positions or becoming less motivated.

Management

The benefits of good management and, thus, the necessity of manager training was a recurring theme. Czaja noted that training should not only be given the workforce, but to managers as well. Fischer agreed, noting that while managers are a crucial part of a company's operations and can have a large impact on employee health and well-being (larger than workplace wellness programs), not much is known about what managers need to be successful. Moen underscored the influential role of manager discretion in decisions to rehire a company's own retirees or hire other retirees. Fischer and Harter highlighted the need to improve our understanding of the complexity inherent in managerial positions, including frequently supervising employees who telework, work internationally, and/or have generational differences.

Harter's own work has highlighted decision-making ability as an important predictor of managerial success. Many managers rise through the ranks based on prior individual productivity or longevity at a company and are unaware that they are expected to influence employee well-being. The best managers take the time to learn their employees' individual strengths and idiosyncrasies and organize workplaces in which workers can arrive at outcomes in different ways.

Work Context

Czaja elaborated on the changing context of work. First, employees are more frequently engaging in full- or part-time telework, which creates challenges for managing these individuals and providing them with feedback, as there are fewer opportunities for in-person interactions. For some types of jobs it is hard to monitor performance occurring at a remote location. This can be remediated to some degree by establishment of performance goals and timelines. In addition, increasing international collaboration requires teams to collaborate both locally and with colleagues in remote physical locations. There are also generational differences in the tenure of employees within companies, as younger generations are more likely to leave positions after one to two years, leading to constant changeovers among workers

who are collaborating and working in teams. Finally, there has been insufficient focus on the opportunities afforded by an aging workforce, including the skills and expertise that older workers bring to the table.

Workplace Interventions

Harter pointed out that only one-quarter of employees are actively involved in workplace interventions and wellness programs, leading to a big gap between intended and actual outcomes for employees. To address this gap, companies need to develop more appropriate programs, focus on manager training, and increase employee involvement. Fischer agreed, stating that in Germany, most participation rates in wellness programs hover around 15-20%. With BMW, Fischer experimented with different approaches to increase uptake of eating healthy foods, finding that food label and individual employee incentives programs were unsuccessful or undesirable by the company. Instead, incentivizing at the right level, which meant providing bonuses to canteen chefs based on their achievements in getting more employees to eat well by creating appetizing healthy meals, individual eating habits and social norms around eating healthily began to change throughout the company. Moen had success using a similar approach, conducting a worker flexibility and manager support intervention at the team level, rather than the individual level. Harter commented that experiments in his own organization have demonstrated that change happens within pockets of peer groups, so setting positive defaults can lead to widespread uptake. Finally, Kelly pointed out the necessity of making new behaviors not only a smart choice, but something that is also easy and valued, in order to increase the success of workplace interventions.

The Role of Employers in Research

Nielsen noted that the availability of data from workplaces is of great value, particularly if the researcher can influence the type of data gathered, and asked participations to comment on the role of employers in research. Fischer replied that his company has offered employers comprehensive surveys with personalized results, which gave the research team the ability to combine data and study cross-level interactions. This led to a richer dataset than may otherwise be available and demonstrated that these types of approaches can be more informative. Coile stressed the value of working with a company from an early stage to think about the type of data the research team would want and how those data might be beneficial to the organization. Researchers can work with organizations to develop questions that employers are interested in having answered and use sound methodological approaches to arrive at those answers, collecting data that benefits both researchers and organizations. Kelly noted that it can be an amazing opportunity to work as a researcher with an organization, but that it is also an enormous time investment that does not always end successfully. To maximize success, Kelly is pursuing intervention studies on occupational cohorts nested within workplaces and using creative exposure measures. In the Work, Family & Health Network (WHFN), Kelly and colleagues consulted employer advisory and advocacy committees, which were helpful in identifying key questions to pursue.

January 12, 2018 Teleconference Discussion

Moen and Carstensen chaired a discussion to consider key themes emerging from the background papers and first teleconference and cohere around a set of themes to be explored further. The discussion then turned to innovative and effective methodologies that can be exploited to investigate work and health.

Key Thematic Ideas

Changing Conditions of Work Life and the Social Context of Work

The first theme of the discussion focused on the effects of work on health and the social context of work. Carstensen pointed out that workplaces offer a key opportunity to intervene to promote longevity and well-being because people spend so much time at work. For example, workplace interventions can be used to improve nutrition and increase physical activity. Beyond health, work also affects financial preparation and decision-making, as well as social relationships including intergenerational workplace and family relations, as well as aspects of family life. Harter agreed, pointing out there is increasingly less separation between work and home life, particularly with mobile devices that permit continuous contact between the workplace and worker, even outside of typical work hours. As a result, workplaces can be used to set positive defaults and change social expectations to improve health. However, doing so is typically dependent on one's manager as well as having the right resources available. Additionally, Moen noted that while workplaces can be prime opportunities for individual health promotion and change, employees' attachments to workplaces are less secure now than in the past, particularly when new technology leads to job precarity in older individuals.

The conversation then turned to how macroeconomic influences play a role in the changing nature of work, and that this could be tied to increasingly common types of employment, such as gig jobs and contract work, in which the role of the older person is unclear. Additionally, Harter stated that macroeconomic conditions influence what workplaces are able and likely to do. For example, when unemployment is high, there tends to be higher disengagement among workers, likely because they have less choice and organizations face less competition in hiring workers. There are also effects on how much organizations are willing to invest in well-being initiatives, as organizations have not yet faced stiff enough competition to need to implement holistic well-being programs in order to attract employees.

Changing Conditions of Work and Transaction with Family

The next theme focused on the changing nature of work and unemployment, and how that interacts with family. Carstensen noted that as job turnover increases, the transitions people make become more frequent, and that it is important to think about the infrastructures that support those transitions. These infrastructures can be both formal, as in the case of encore fellowships, and informal, such as family context. Research could focus on uncovering the family forms and characteristics that best support people when they are out of the workforce and that allow the maximum potential for reentering the workforce.

Heterogeneity, Disparities, Working Longer, or Leaving Early

Moen underscored the heterogeneity in work at older ages. Berkman highlighted efforts by Social Security to increase the retirement age. Many people feel that working longer is beneficial, but this is not true for all workers, and there is not one policy that will work for everyone. Fischer added that his research team is trying to understand why employee heterogeneity and deviation from the normal distribution increases with different company sizes and as workers age. Researchers need to understand this heterogeneity and consider whether new methodologies may need to be developed to study this complexity in the aging workforce.

Policies and Strategies for Promoting Life Quality and Longer Social Participation

This discussion touched on the roles of technology, training, work conditions, and policies for improving health and lengthening time in the workforce, if desired. Moen noted that public policies have an impact on work and health and that researchers should seek to understand which policies play a role in facilitating voluntary longer employment and which social safety nets are necessary in the current disjointed labor market. Harter emphasized that, within organizations, employers and employees need to understand that training and development can occur as people age, and that training in response to automation is important.

Coile added that there are more attributes to a job than a paycheck and benefits, including training opportunities, which affect health and work participation. Other non-pecuniary aspects of work, including the ability to work part-time and set one's own hours, how much control one has over one's work, whether an employee feels that they are making a contribution, the amount of teamwork versus individual work, the opportunity to telework, and whether the skills of workers of different ages are being leveraged are all aspects of a position that can have a direct impact on health and on an individual's interest in working longer. Rather than solely focusing on financial incentives, psychosocial conditions of work could be used to provide a more dynamic context and uncover what characteristics help organizations retain workers and make those workers more (or less) productive. Berkman agreed, noting that having both social and economic frameworks are necessary for a broader understanding. The social context includes aspects such as how work units function, team dynamics, and group norms, while the economic context includes aspects like job flexibility and whether one receives hourly or annual wages.

Work Teams as Units of Change

Fischer pointed out that scientists have little understanding of system dynamics within workgroups and organizations. Systems dynamics reveal that the manager is a key agent of change and workgroups are the unit of change acting within a dynamic evolving system. Traditional randomized control trials have the framework of developing a new treatment and then studying its effect on individuals, whereas researchers must appreciate that worksites are agile dynamic evolving systems and may require a different approach. Using a systems dynamics perspective and thinking of companies or workgroups as organisms may help researchers understand issues in a way that cannot be done by looking at the individual or policy levels.

Meaning and Motivations for Working Longer

Finally, the group discussed the role of meaning and motivation for working longer. Moen pointed out that several of the experts mentioned the importance of engagement and motivation in their background papers and during the first teleconference. Carstensen added that meaning, often associated with family engagement, contributes importantly to people's well-being outside of work, especially in the face of transitions in and out of work.

Additionally, Moen acknowledged that another particularly salient topic among the panel was how stereotypes and beliefs shape both employer and employee behavior. Carstensen agreed, noting that age discrimination is particularly relevant to this theme.

Methodology

Carstensen opened the conversation on methodology by asking participants to think not only about different kinds of study designs that can be leveraged to study work and health, but to also think about needs in terms of data resources and measurements. Berkman's idea to study U.S. states entering into different leave policies at different stages resonated with Carstensen, who suggested this as the basis for a potential data resource. Berkman noted that this is a promising area of research, as policies at different levels (federal, state, city, organization) can all be evaluated. Harter also thought that quasi-experiments are a key opportunity for evaluating interventions and suggested that twin cities with similar populations (e.g., Blue Zones) could be tracked over time to examine the effects of different policies. He further noted that Gallup Inc. has U.S. national data aggregated by city and state that includes well-being and workplace information, which is another available data resource.

Rehkopf homed in on the role of organizational policies and pointed out that occupational cohorts, such as the one he works with at Alcoa plants, can be used to study the effects of such policies as economic and workplace incentives over time. However, the Alcoa study was only possible because the CEO was interested in promoting the health of his employees and wanted to allow research to speak to that, which highlights the importance of company buy-in and working with a company that is forward thinking in that direction. Fischer added that he had the same experience in Germany. In order to be successful, he had to approach companies from the perspective of offering a service and thinking of innovative questions that the organization would like answered. There are companies in the U.S. that are forward-thinking, particularly in competitive markets, that would be amenable to being approached with strategies to improve the well-being of their workforces. Harter noted that Gallup Inc. works with a number of these sorts of companies, and they represent an opportunity to test new policies and initiatives.

Coile was excited about the potential to learn from working with employers but recalled that Kelly mentioned the inherent difficulties of doing so, such as the large investment of time, in the first teleconference. Coile asked whether there are approaches that support and encourage this type of work within organizations. Fischer replied that, for companies, their bottom line is the most salient outcome. Researchers need to align their interests with the employer's ability to have a competitive advantage. In his research, Fischer found it easier to ask where the companies needed help and make measurements instructive for them to restructure their processes. Rehkopf had a similar experience with Alcoa, where the study started with a topic of interest to the organization and then expanded in scope. Alcoa initially approached the research team for help with reducing injuries, but over time, researchers were able to add additional topics to the study. Harter echoed these comments, highlighting the importance of starting with the company's business problem. Researchers need to find organizations that see the research question as a business issue and need to help organizations realize that they will gain knowledge that is actionable and can be applied to their processes.

Carstensen noted that she and Dr. Greg Samanez-Larkin are working on a short course (funded through an NIA R25 mechanism) to train junior investigators to work with private companies, and that their approach is to find out what kinds of issues companies are grappling with and offer to help with those issues. Nielsen agreed that there is a challenge for junior investigators entering this space and emphasized the importance of programs like Carstensen's to train researchers in strategies to engage with private partners. Coile inquired whether the aging workforce represents a possible point of entrée,

if companies are struggling with how to retain workers or how to change workplace processes or structures. One strategy would be to approach employers, or different units or teams within companies, who are handling these issues well and leverage their knowledge. Moen conducted a small study in the Twin Cities, finding that, especially in large corporations, employers were reluctant to let researchers in because they were worried about the team finding age discrimination concerns. Therefore, the question is not only how to gain access in general, but how to gain access around the specific topic of work and aging.

The next portion of the discussion focused on the types of measures that should be included when trying to address these issues. Carstensen began by emphasizing the importance of a multidisciplinary approach, if not an interdisciplinary one. Nielsen noted that, in the first teleconference, several participants highlighted the need for multiple measures and outcomes, thinking beyond what companies measure in terms of performance metrics to qualities of workers and workplaces that are not currently being captured in workplace performance evaluations. Moen agreed that new metrics for key performance indicators are needed, as are measures that capture the heterogeneity within the large group of workers who are fifty years and older. Carstensen added the need to include measures on which older people perform well. Many evaluations are based on outcomes that younger people do well, such as speed and productivity, whereas older workers' contributions are more related to areas like reduced turnover, stability, and other qualities that tend not to be measured but may still impact profitability. Harter added that experience and mentoring ability are additional qualities that older workers possess. Moen added that there are also unit of analysis issues in that workgroups are usually comprised of teams and their managers, and researchers need to study more than just employers and employees. Indeed, productivity advantages of older workers are typically seen at the unit level. Finally, Moen emphasized that additional measures should be included around retirement, as most studies only analyze whether someone retired, but do not examine the antecedents, the reasons, or the process involved.

The remaining discussion focused on measurement related to well-being and wellness programs within organizations. Harter stated that most employers have some form of job attitude survey that can be leveraged to include more targeted well-being metrics,¹ if a researcher is able to establish a partnership. While they also typically have performance measures in place, changing them may take additional time. The key is to think about what measures to add; for example, most companies do not include well-being measures, even though they may have wellness programs in place. Carstensen asked how long it typically takes to detect change on well-being metrics in workplace interventions. From Harter's experience, with the right program, change could be detected within a year. Employee engagement programs can impact how people perceive their work within six months of implementation. With health, there are changes in some indices (e.g., BMI) in a six-month timeframe as well.

Conclusion

These discussions - and the set of short papers that served as their stimulus - are intended to lay the groundwork for future initiatives around work, the workplace, and aging.

¹ A discussion on the use of well-being metrics in policy analysis can be found on [NIA's website](#).