UNDERSTANDING THE ROLE OF AGE, WORK CONTEXT, AND TASK DEMANDS ON MANAGERS' ATTITUDES

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UNDERSTANDING THE ROLE OF AGE, WORK CONTEXT, AND TASK DEMANDS ON MANAGERS' ATTITUDES

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This work is dedicated to my best friend and husband, Joshua Berger. Josh, you have supported me, cheered me on, kept me from taking myself too seriously, and most importantly, when I doubted myself, yelled: *finish what you started*! This accomplishment is as much yours as it is mine. Thank you for being you.

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SUMMARY

Despite the availability, capability, and inclination of older workers to remain in the workforce, research indicates that older workers are generally perceived and evaluated less favorably than younger workers (cf., Kite, Stockdale, Whitley, & Johnson, 2005).   However, little is known about what factors lead older workers to be perceived less favorably. Up until this point, research investigating attitudes towards older workers has been limited to traditional work contexts. However, telework is an increasingly popular alternative work context and may be more appropriate for older workers.   Another possible factor relating to evaluations of older workers is knowledge about age-related changes in ability. For example, the task demands of a job may be particularly high in fluid ability or crystallized ability. The work context and task demands of a job may be two potential sources of influence regarding perceptions of older workers.

In the current set of studies, I examined the impact of applicant age, work context (telework and office work), and task demands (fluid ability and crystallized ability) on participants' ratings of younger and older job applicants. In Study 1, a total of 16 job descriptions were selected based on their suitability and dependency on: office work/crystallized ability, office work/fluid ability, telework/crystallized ability, telework/fluid ability. Hiring managers recognized the jobs that were suited to telework or office work, but did not distinguish when either fluid or crystallized ability was of primary importance to a particular job. In Study 2, participants rated either younger or older applicants for 4 jobs selected from Study 1.

The results of Study 2 were compelling. Older applicants were rated as more qualified when the job was dependent on crystallized ability, as well as when the job took place in a telework context. However, there were no significant differences between older and younger applicants when the job was dependent on fluid ability, or when the job took place in an office work context.

The current research is critical to understanding the influence of task demands and the work context on differences between evaluations of older and younger workers.

CHAPTER 1

INTRODUCTION

The search for the definitive method of measuring and predicting behavior to hire the best person for the job is one of the most compelling topics in personnel selection. However, one subject that has remained relatively unquestioned is what are the specific factors that influence the decisions managers make when evaluating interviewees? More specifically, what are the roles that age, work context, and/or task demands play in the formation of mangers' attitudes towards job applicants? Understanding what variables influence managerial attitudes towards job applicants is relevant not only to employee selection, but to other areas as well, such as training, promotion, and development opportunities, as well as in understanding why certain employees get selected for termination, retirement, and reduction-in-workforce.

The most rapidly growing portion of the workforce is that of adults aged 55-64 (AARP, 2000; Capowski, 1994; Gordon & Arvey, 2004; Toossi, 2004). A prevailing assumption is that older workers want to retire and do so eagerly, but this is not necessarily true (AARP, 2000; Greller & Stroh, 1995). However, despite the availability, capability, and willingness of older workers to remain in the workforce, research indicates that older workers are generally perceived less favorably than younger workers (Hassell & Perrewe, 1995; Kite & Johnson, 1988; Finkelstein et al, 1995; Perry et al., 1996; Gordon & Arvey,; Kite, Stockdale, Whitley, & Johnson, 2005; Rosen & Jerdee, 1976a; Rupp, Vodanovich, & Credé, 2005).

Until recently, research investigating attitudes towards older workers has typically been conducted in the traditional work context, whereby employees go to a central office, experience personal contact with co-workers, and work five days a week, from the hours of 9 to 5. However, with one of the most rapidly growing sections of the workforce being that of older adults, an increasing focus is being directed toward accommodating the needs of older workers in response to meeting personal and family demands. More specifically, as workers age, they may be more likely to wish to work part-time, they may need to engage in caregiving, or may be mobility impaired (Czaja, 2005). Telecommuting or telework is an increasingly popular alternative form of work arrangement, representing an "anytime-anyplace" form of work (Sharit, Czaja, Hernandez, Yang, Perdomo, Lewis, Lee, & Nair, 2004). The advantages that telework affords older workers may make it appropriate and potentially preferred by older people (Czaja).

CHAPTER 2

LITERATURE REVIEW

The Role of Age

Why age is important

Age is a crucial person variable first and foremost, because of the known physical, perceptual, and cognitive changes accompanying the aging process (Craik & Salthouse, 2000; Nichols, Rogers, & Fisk, 2003). As a person ages, his or her ability to function in the world of work and leisure may be influenced by changes that occur due to the aging process. Age is also a critical variable because of the discrimination that individuals face as they grown older. Between 1970 and 1989, the number of filings of employment discrimination cases in the federal courts increased almost 2,200 percent, while all other types of cases only rose 125 percent (Gregory, 2001). As our population grows older it has been suggested that age discrimination charges are going to continue to rise (Adams & Neumark, 2002; Brandon, 2004; Gregory, 2001; Hassell & Perrewe, 1995; Nicholson, 2003). Furthermore, age is often used as a means to force workers into early retirement. Such actions have been estimated to cause our nation to lose an estimated $60-$80 billion a year in productivity (Shea, 1994). Alienating older workers may be especially harmful since their work roles may be a particularly important determinant of their sense of self-worth and personal identity. Additionally, the better educated – those more likely to have professional, technical, and managerial positions – tend to find their work more meaningful and enjoyable and thus have less

reason or desire to accept retirement, and are more likely to want to remain longer in the workforce (Gregory, 2001).

Age has also been established as a significant factor in attitudes towards workers. Indeed, research indicates that older workers are generally perceived less favorably than younger workers (Finkelstein et al, 1995; Gordon & Arvey, 2004; Hassell & Perrewe, 1995; Kite & Johnson, 1988; Kite, Stockdale, Whitley, & Johnson, 2005; Perry et al., 1996; Rosen & Jerdee, 1976a; Rupp, Vodanovich, & Credé, 2005). Additionally, research has found that older applicants have been evaluated less favorably than younger applicants even when both applicants have the same qualifications (Avolio & Barrett, 1987; Rosen & Jerdee, 1976a). However, attitudes are not entirely negative; some positive traits commonly attributed to older workers are those of stability and reliability (Chiu, Chan, Snape, & Redman, 2001; Rosen & Jerdee, 1976a; Warr & Pennington, 1993), loyalty (Warr & Pennington), conscientiousness (Chiu et al.; Warr & Pennington), and integrity (Rosen & Jerdee, 1976b).

Experimental design may influence the emergence of age bias in studies investigating attitudes towards older workers. Earlier meta-analyses (Kite & Johnson, 1988; Finkelstein, Burke, & Raju, 1995) found that more age-bias was likely to occur in within-subjects as compared to between-subjects experimental designs. The rationale was that in within-subjects' designs, comparing older targets to younger targets, makes age salient, and as a result, increases the likelihood for age discrimination to occur. Contrasting findings were obtained in a more recent meta-analysis by Gordon and Arvey (2004), who found more age bias in between-subjects' as opposed to within-subjects' experimental design. The authors reasoned that the increased age saliency in within-subjects designs should activate social desirability on the part of participants and lead them to manage age bias.

Therefore, more age bias would be found in between-subjects designs. However, findings from the latest meta-analysis on age bias indicated that overwhelmingly, within-subjects designs produced significantly larger perceived age differences, in some cases five times as large produced by between-subjects designs (Kite, Stockdale, Whitley, & Johnson, 2004, p. 257).

Nevertheless, much is still unknown about the role that age plays in the formation of managers' attitudes toward job applicants. For instance, the current literature fails to provide a comprehensive theory that would explain what it is about older workers that make them consistently undervalued and less favored. Do managers arrive at such biased decisions due to a misunderstanding of age-related changes? Are managers using stereotypes regarding older workers' capacity to train, learn, and develop on the job to form the basis of their evaluation? Do managers make faulty assumptions about there being a negative relationship between age and job performance? Are there perhaps certain personality traits that, in combination with numerous stereotypes regarding older adults, make such biased evaluations more likely? Perhaps there is a combination of these factors. On the surface, one can still say that age is a factor in applicant evaluations; however, it is what underlies the age factor that will ultimately inform science and practice the most.

The Role of Work Context

Traditionally, research investigating attitudes towards older workers has been limited to conventional work contexts, in that participants have been typically permanent, full-time employees who work at a central office location. However, an increasingly popular alternative work context is emerging, that of telework.

Telework, or telecommuting, is defined as changing the location of certain professional activities, from the organization's conventional office to elsewhere (Illegems & Verbeke, 2004). Furthermore, telework is defined as paid work from home, a satellite office, a telework center or any other work station outside of the main office for at least one day per workweek.

The benefits of telework are numerous. Travel reduction, the most obvious choice, is a clear benefit, as is the opportunity to balance work and family duties, particularly among dual-career couples (Bailey & Kurland, 2002). Other benefits include heightened productivity (Di Martino & Wirth, 1990; Illegems & Verbeke, 2004), increased work flexibility, and reduction in absenteeism, where working from home makes it easier to work in conditions where face-to-face contact is unadvisable or not an option. Yet, perhaps one of the most unique functions of telework is that it can provide improved job opportunities for disabled persons or for persons with restricted mobility. This includes allowing employees to work in a specialized environment that has been adapted to their specific needs, as well as tailoring the work schedule to permit care for them when needed (Illegems & Verbeke).

The demographics of the workforce are changing, and older adults are the most rapidly growing section of the workforce. In contrast, the number of younger workers in the workforce is decreasing. Indeed, some researchers argue that the U.S. economy will experience widespread job vacancies due to the small size of the "baby bust" cohort (16 percent smaller in number than the baby boom cohort), the generation that has followed the baby boomers into the labor market (Cappelli, 2003). Such labor shortages indicate a need to fully utilize the existing pool of older workers. Telework may be a particularly

appropriate strategy to enable older workers to remain working. Such an arrangement

may not only help older workers balance their personal and family duties, but it may

afford them the opportunity to redesign their workplace (i.e., their home) so that age-

related changes in abilities may be accommodated (e.g., with better lighting, ergonomic

chairs and desks).

Who teleworks?

About one-fifth of the adult workforce 18 years of age and older engage in some

form of telework (including home-based, satellite, work center, and mobile

telecommuting; Davis & Polonko, 2001). Teleworkers have been reported to be

significantly more likely from the Northeast and West, male, have higher education and

income, occupy professional/managerial occupations, and be employed in smaller and

larger organizations. In contrast, there has been said to be no clear differences between

teleworkers and non-teleworkers across marital status, racial/ethnic, and age groups

(Davis & Polonko). However, other studies have reported contradictory findings.

Bailey and Kurland (2002) indicated that teleworkers often work as contractors rather

than permanent employees, and that gender distribution was almost equal among

teleworkers, with 51 percent women and 49 percent men. However one possibility

mentioned for the discrepancy was that differences in teleworker demographics may

reflect differences in occupation, perhaps along the clerical/professional lines.

Managers' attitudes toward teleworkers

Estimates of the number of teleworkers who worked at home have increased in the past year from 23.5 million to 24.1 million, a 2.6% increase (The Telework Coalition, 2006). This 24.1 million represents 18.3 percent of employed Americans, nearly one-fifth of the workforce. Furthermore, about one-fifth of teleworkers are employed by companies with more than 1000 employees (The Telework Coalition). Given these facts, it is surprising to learn that little is known about the selection process for teleworkers. The research indicates however, that when deciding who gets to telework, issues of status and power can be factors. More specifically, several studies indicate that clerical workers may face greater opposition from management to their requests to work at home (Bailey & Kurland, 2002). Additionally, managers may make telework more appealing for professionals as opposed to clerical workers. Some evidence suggests that managers adopt a job enrichment perspective for professionals, yet take away permanent status, medical benefits, and vacation when clerical workers covert to telework (Bailey & Kurland).

Managers' attitudes toward telework

While it is clear that the benefits of telework are numerous, not all managers have positive attitudes towards telework, or are open to adopting it in their organizations. As the demographic nature of the workforce keeps changing, it will become increasingly important to attract and retain skilled workers in their jobs. Teleworking is one way to accomplish both of those goals. However, to make telework a viable option in the organization, managers must be willing and able to not only interact with teleworkers, but

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to monitor, guide, and give feedback to them as well. It is crucial to understand managers' attitudes towards telework if such work arrangements are to be a successful component of organizations.

In the literature, managers' attitudes toward telework are typically addressed with terms such as "adopters" and "non-adopters". Differences in views between "adopters" (managers who have adopted the practice of telework) and "non-adopters" (managers who have not adopted the practice of telework) have been examined to explain the basis of why some firms do not adopt the practice of telework (Illegems & Verbeke, 2004). Results of one study showed significant differences between non-adopters and adopters in that non-adopters of telework felt that telework would have a significantly more negative effect on the organizational culture, and an increased perception of social isolation. Additionally, the non-adopter group, as compared to the adopter group, significantly undervalued the impact of retaining highly qualified staff (Illegems & Verbeke). Furthermore, research on managers' attitudes towards telework has shown that some managers are concerned about not being able to monitor employees' work. For example, some managers reported being fearful that employees are out playing instead of working (Kurland & Bailey, 1999; Nilles, 1998).

While descriptions of telework and its benefits are not lacking, a more complete understanding of managers' attitudes towards telework are. Perhaps more importantly, more research needs to be conducted concerning the degree to which employee age, as well as the nature of the job, affects managerial decisions to allow workers to engage in telework. For example, some positive traits commonly attributed to older workers are those of stability and reliability (Chiu et al., 2001; Rosen & Jerdee, 1976a; Warr & Pennington, 1993), loyalty (Warr &

Pennington), conscientiousness (Chiu et al..; Warr & Pennington), and integrity (Rosen & Jerdee, 1976b). Furthermore, research on managers' attitudes towards telework has shown that one common issue concerns trust. More specifically, managers may be fearful that employees are out playing instead of working (Kurland & Bailey, 1999; Nilles, 1998). Thus, investigating the relationship between age and telework may help researchers understand whether perceptions of older workers as more stable and reliable make manager's more likely to allow older, as opposed to younger workers engage in telework.

The Role of Task Demands

Numerous studies have examined various aspects of the selection process, from applicant reactions, applicant characteristics (e.g., sex, race, age, weight, attractiveness), and structure of the interview, to name a few. However, relatively little research has focused on the impact of work characteristics, or the task demands, on selection decision outcomes.

How Can Job Demands be Characterized? - Adult intelligence

Adult Intelligence and Job Performance

Perhaps one of the most widely held beliefs concerning matters of business are that smart people perform better. Indeed, there are reliable relationships between cognitive functioning and performance in the work environment (Park, 1994). Furthermore, cognitive ability has been reported to be one of the best predictors of job performance (Park; Salthouse & Maurer, 1996). Hunter and Hunter (1984) conducted a meta-analysis of predictors of job performance and found that mental ability was the

single best available predictor of job performance. Hunter and Schmidt (1996) also showed that cognitive ability both directly and indirectly predicted job performance. More specifically, general mental ability was the dominant determinant of job performance because higher ability individuals learn more job knowledge, and learn it more quickly.

The relationship between general mental ability (GMA) and both occupational level and job performance was further explored by Schmidt and Hunter (2004). Tests of GMA are usually measured with questions and problems relating to verbal, quantitative, spatial, and sometimes mechanical material. Results showed that general mental ability was associated with increased occupational level. More specifically, individuals with low GMA scores tended to occupy relatively low occupational level jobs (e.g., crane-hoist operator, general painter, tractor driver, and welder) whereas individuals with high GMA scores occupied jobs higher in terms of occupational level (e.g., accountant, lawyer, engineer, auditor, and chemist). GMA correlated above .50 with later occupational level, performance in job training programs and performance on the job. The authors concluded that GMA predicted occupational level, as well as both on-the-job and training performance and did so better than any other ability, trait, or disposition and better than job experience. These results are consistent with an earlier review conducted by Salthouse (1994) where he concluded that cognitive ability is related to functioning in work environments, in terms of either level of performance in a given job or the likelihood of placement in higher status, and more cognitively demanding positions.

<u>Types of Adult Intelligence</u>

Much research has been conducted in the realm of adult intelligence, and in doing so, two distinct classes of intellectual abilities have emerged, and may resemble the two forms of intelligence underlying GMA. They are: fluid intelligence (Gf) and crystallized intelligence (Gc) (Cattell, 1963; Horn, 1968; Horn & Cattell, 1966). Fluid intelligence reflects a pattern of physiological influences (Horn, 1968) and corresponds to efficiency of processing (Salthouse, 1994). Examples of Gf include tests of inductive reasoning, interpreting verbal reasoning pertaining to visual patterns, and classification (Horn, 1989). Fluid intellectual abilities are most associated with working memory, abstract reasoning, attention, and processing of novel information (Kanfer & Ackerman, 2004, p. 443). Although there have been some mixed findings as to the exact age when fluid intelligence begins to decline, depending on experimental design and type of task (Schaie, 1994; Stankov, 1988), research tends to indicate that maximum levels of Gf are reached in one's early twenties and decline with age (Cattell, 1963; Kanfer & Ackerman; Salthouse, 2004).

Crystallized intelligence (Gc) has been described as the intelligence of a culture (Horn, 1968, 1989). Gc can also be conceptualized as the storehouse of knowledge that a person has accumulated over that person's lifetime (Salthouse, 1994). Examples of Gc include problem definition, assessment of everyday arguments, and story problem representation (Horn, 1989). Crystallized intelligence is associated with general knowledge, vocabulary, and verbal comprehension (Kanfer & Ackerman, 2004, p. 443) as well as arithmetic and common information (Stagner, 1985). In contrast to Gf,

measures of Gc tend to increase with age (Cattell, 1968; Horn, 1968). Indeed, a complete assessment of Gc for adults of working age would include both job knowledge as well as recreational knowledge (hobbies, music, art, culture, Kanfer & Ackerman).

Given the evidence indicating that, first, there is a tendency for certain measures of cognitive ability (e.g., Gf) to decline with age, and second, that there is a robust, positive relationship between cognitive ability and job performance (Park, 1994; Salthouse & Maurer, 1996), one might naturally expect to observe a negative relationship between age and job performance. In fact, linked to the widespread prejudice against older adults in the labor market is a common belief that they tend to be less good at their jobs than younger people (Warr, 2000). Furthermore, defendants in age discrimination lawsuits often cite age-related performance decrements as justification for the imposition of upper age limits in hiring and retention decisions (McEvoy & Cascio, 1989). However, research findings point to the contrary, there are no significant differences between the job performance of older and younger workers (Salthouse & Maurer, 1996; Warr, 1995, 2000).

Reasons underlying the lack of a negative age-job performance relationship are varied. However, one such reason may be that the increase in crystallized knowledge with age helps compensate for the decline in fluid abilities (Salthouse, 1994). In other words, older adults may compensate for declines in fluid abilities by taking advantage of the storehouse of knowledge and skills that they have accumulated through experience.

Definition of task demands

For an employee to be successful, that employee will need to allocate personal resources (e.g., attention, effort) to the job. Depending on the nature of the job, there will be specific task demands that must be met. For instance, such task demands may involve an individual's cognitive abilities, knowledge, and/or skills. When job tasks are novel and complex, they will require the type of resources specific to Gf (Kanfer & Ackerman, 2004). An example of task demands high in Gf would be those belonging to the job of an air traffic controller. Such task demands involve substantial attentional effort (Gf) while requiring relatively low levels of Gc. Accordingly, this job has been found to show diminished performance with age (Kanfer & Ackerman; Morrow, Ridolfo, Menard, Sanborn, Stine-Morrow, Magnor, Herman, Teller, & Bryant, 2003; Morrow, Ridolfo, Stine-Morrow, Teller, & Bryant, 2003; Morrow, Soederberg Miller, Ridolfo, Menard, Stine-Morrow, & Magnor, 2005; Taylor, O'Hara, Mumenthaler, & Rosen, 2005). Other occupations found to rely heavily on Gf include those of mathematician and scientist (Bell, Matthews, Lassiter, & Leverett, 2002).

In contrast, jobs with tasks requiring high knowledge reflect task demands high in Gc. Jobs that involve writing, music, and dramatics, to name a few have been identified as representing tasks high in crystallized intelligence (Kaufman & McLean, 1998). Other examples of high Gc occupations include: medical doctor, college professor, and lawyer (Kanfer & Ackerman, 2004).

Despite the lack of a negative age-job performance relationship, negative attitudes towards older workers still exist. This may be due to the fact that gaps in the literature still remain. For example, the current research fails to inform researchers what the bases of such attitudes are, other than some factors related to age. Research needs to address to

what extent (if any) the task demands of a job play in the formation of attitudes towards job applicants.

<div align="center">**Understanding the Role of Attitudes**</div>

Definition of Attitudes

The task of defining a hypothetical construct can be daunting, especially one as complex as an attitude. However, there is at least a general consensus that an attitude represents a summary evaluation of an object (e.g., a person, an issue) along a dimension ranging from positive to negative, likable-dislikable, harmful-beneficial, and pleasant-unpleasant (Ajzen, 2001; Eagly & Chaiken, 1993; Petty, Wegener, & Fabrigar, 1997). If evaluation is at the core of an attitude, then, what are the antecedents to evaluation? The multi-component view of attitude assumes that evaluations are influenced by cognition, as well as affect (Ajzen; Dovidio & Hebl, 2005). More specifically, stereotyping is the most cognitive component, prejudice is the most affective component, and discrimination is the most behavioral component (Fiske, 1998).

Stereotypes have been defined in a number of ways, ranging from beliefs about the characteristics, attributes, and behaviors of members of certain groups (Hilton & von Hippel, 1996, p. 240), to being defined as the cognitive biases against outgroup members, including attributions of traits and beliefs about these individuals (Dipboye & Colella, 2005). Although stereotypes are not necessarily negative, stereotypes regarding out-group members tend to have negative connotations as compared to those of in-group members.

Prejudice has typically been viewed as the application of social stereotypes, including a negative evaluative or emotional response to members of a specific group (Hilton & von Hippel, 1996). Prejudice has also been defined as the affective biases that exist with regard to outgroup members (Dipboye & Colella, 2005). Research has shown that four types of prejudice (racism, sexism, prejudice towards homosexuals, and prejudice toward mentally disabled people) are highly correlated and may form one single factor (Ekehammar & Akrami, 2003). Furthermore, various types of prejudice have been reported to have cross-cultural validity (Ekehammar, Akrami, Gylje, & Zakrisson, 2004). These findings lend support to the idea that prejudice may be a trait of personality.

Authoritarianism is considered as an individual difference variable involving ethnocentrism, a need to submit to authority, adherence to middle class values, and rationalized aggression (Dovidio & Hebl, 2005). More specifically, right-wing authoritarians (RWA) report more hostility towards members of outgroups and impose stricter rules about "proper behavior" (Altemeyer & Hunsberger, 1992). Indeed, research shows that authoritarians are relatively prejudiced (Altemeyer & Hunsberger; Whitley, 1999). Findings from numerous studies show that in South Africa, White high RWAs champion apartheid. Russian high RWAs are hostile toward the many ethnic groups in the former Soviet Union. In North America, high RWAs dislike Blacks, Hispanics, homosexuals, feminists, aboriginals, East Indians, Japanese, Chinese, Pakistanis, Filipinos, Africans, Jews, and Arabs (Altemeyer & Hunsberger, p. 115). It is possible that authoritarianism may be a personality trait that could account for some of the variance in negative attitudes towards members of the outgroup. In the present research,

this effect would be manifested when older applicants were being judged by younger participants.

Discrimination is the behavioral component of attitudes, and is the frequent topic of employment research. Specifically, discrimination refers to the unfair behavioral biases demonstrated against outgroup members (Dipboye & Colella, 2005). About one in four older workers report experiencing age discrimination in relation to job applications, and one in 20 report experiencing age discrimination with respect to promotions, training, and development, and compulsory retirement (Redman & Snape, 2002).

Measurement of Attitudes

The number and type of dependent variables that authors have used to represent attitudes cover such a wide range that they defy easy categorization or explanation (Kite & Wagner, 2002). The traditional tripartite model (see Eagly & Chaiken, 1993) proposes that attitudes comprise three components: an affective component (feelings), a cognitive component (cognitions or stereotypes), and a behavioral component (behavior or behavioral intentions towards individuals). Ageist attitudes have been described as a constellation of these three factors. For example, feelings due to an individual's age, stereotypes about what an individual is like because of that person's age, and differential treatment due to a person's age (Kite & Wagner).

Cognitive and Affective measures

Several measures exist to tap both cognitive and affective components of attitudes. With regard to attitudes towards older adults, the Fraboni Scale of Ageism

(FSA; Fraboni, Saltstone, & Hughes, 1990) was developed to capture both the affective and cognitive components of attitudes towards older adults with three factors: stereotypes (antagonism and antipathy fueled by misconceptions and/or myths about older persons), separation (withdrawal from social contact with older individuals), and affective attitudes (discriminatory opinions regarding the rights, segregation, and activities of older persons) (Rupp et al., 2005). Research findings using this instrument indicated that men are more ageist than women, and so too are younger raters as compared to older raters (Rupp et al., 2005).

The "Beliefs About Older Workers" scale (Hassell & Perrewe, 1995) was developed to examine individuals' beliefs specific to older workers. Results showed that younger workers held less positive beliefs about older workers. Using the work effectiveness and adaptability dimensions from the Beliefs About Older Workers scale, Chiu et al. (2001) found similar results. Younger workers held less positive beliefs about older workers.

The Palmore's First Facts on Aging Quiz (see Palmore 1988) is one of the better known measures regarding aging. More recently, a version was designed employing multiple-choice, rather than true-false items (Harris, Changas, & Palmore, 1996). However, both versions are primarily measures of age-related knowledge, rather than attitudes (Stuart-Hamilton & Mahoney, 2003).

Behavioral measures

Research exploring the effects of applicant age on employment decisions has been described as limited (Perry et al., 1996). Thus, studies that specifically measure

discriminatory behaviors or even behavioral intentions towards older adults are somewhat scarce. However, one common method for investigating the effects of age discrimination is to do so in *simulated work environments*. There are numerous variations on this method; yet, the overall theme is to present participants with two or more resumes or other informational materials that are equated in every way except for age. Generally three age categories are reported: young, old, or no age. If participants rate younger applicants or applicants with no age significantly higher as compared to older applicants, then age bias or discrimination is inferred.

In a study investigating the effect of older worker bias, cognitive busyness, and job age-type on age discrimination, researchers had participants rate younger and older job applicants on behavioral intentions, such as how likely it would be for them to hire the applicant. Results revealed an effect for age bias, such that individuals with a high older worker bias were likely to hold more negative views and attitudes about older workers. Furthermore, the results of this study showed that bias towards older workers existed not only in the form of attitudes, but in the rater's behaviors as well. Results showed that older applicants were evaluated less favorably than younger applicants even though both applicants had the same qualifications (Perry et al.).

Avolio and Barrett (1987) also used a simulated work environment to test the effect of a job applicant's age on personnel decisions. Both younger and older job applicants were equated with such variables as nearness to retirement, unemployment status, and differential experience levels. In addition, performance-relevant information was included. Results showed that participants gave higher overall interview ratings to a

younger job applicant even though that applicant had identical qualifications to the older job applicant.

The importance of using multiple measures

Understanding the underlying components of attitudes is important. For instance, some research shows that prejudice (affect) predicts discrimination (behavior or outcomes) far better than do stereotypes (Fisk, 1998). Yet other research shows that both affect and cognitive measures are critical for predicting behavior. More specifically, in a study investigating voter behavior, Lavine, Thomsen, Zanna, and Borgida (1998b) found that when affect and cognition were incongruent, affect tended to predominate in the prediction of behavior. However, when both affect and cognition were congruent with one another (evaluatively consistent), a better prediction of overall attitudes towards candidates and of reported voting choice was found.

The current literature on overall attitudes towards older workers has brought forth some clear findings. For instance, older adults consistently receive significantly more negative evaluations as compared to younger adults. Additionally, more discrimination against older workers occurred when participants were younger as opposed to older (Finkelstein et al, 1995; Gibson, Zerbe, & Franken, 1993; Gordon & Arvey, 2004). Raters with more experience working with older workers, as well as those who held fewer stereotypical beliefs were less likely to show bias against older workers (Taylor, Crino, Rubenfeld, 1989). However, certain gaps in the literature concerning attitude measurement remain. For instance, while it is clear that attitudes are overwhelmingly negative towards older workers, the research fails to inform what the underlying bases of

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such attitudes are. Traditional research in this area has typically focused on global measures of attitudes, rather than trying to assess the individual components. More specifically, are managers relying on stereotypes, prejudice, personality traits, or economic reasons? Or is it a combination of all of these factors? Only further research can answer this empirical question.

CHAPTER 3

OVERVIEW OF THE CURRENT STUDIES

Study Overview

The goal of the current studies was to investigate the role of age, work context, and task demands on managers' attitudes. Study 1 was designed to answer the following questions: (1) Do managers differentiate when a job was primarily dependent on fluid or crystallized ability? If so, what jobs were perceived as being dependent on Gf or Gc? (2) Do managers differentiate when a job was more suited to a telework as compared to an office work context? If so, what jobs were perceived as being suited to these different contexts? (3) What jobs were rated by managers as representative of the following categories: Gc/Office work, Gf/Office work, Gc/Telework, and Gf/Telework? The answers to these questions served as the basis for selecting jobs to be included in Study 2.

Study 2 was designed to answer the following questions: (1) To what degree were participants' attitudes influenced by age? (2) What were the factors that underlie attitudes towards older workers? (3) Did participants' attitudes differ based on the work context? (4) Did participants' attitudes vary depending on task demands? (5) To what extent did these variables interact with one another?

CHAPTER 4

STIMULUS DEVELOPMENT

Development of Construct Definitions

Definitions of fluid ability, crystallized ability, telework, and office work were

developed based on literature of cognitive ability and telework (e.g., Daniels, Lamond, &

Standen, 2000; Horn, 1968; Horn & Cattell, 1982; Nilles, 1998). To assess clarity, seven

pilot participants read each definition, including a definition of job status, and then

relayed the meaning back in their own words. No significant issues were raised with

respect to office work or job status definitions. However, there was one comment with

regard to telework, as well as some confusion associated with the definitions of fluid and

crystallized ability. Thus, the definitions for these concepts were further defined and

clarified. A separate set of pilot participants completed the same procedure for the

revised definitions to ensure clarity. See Appendix A for the final definitions.

O*NET as a Tool to Select Occupations

Occupational databases play an important role in organizing and describing the

large and shifting population of occupations (Converse, Oswald, Gillespie, Field, &

Bizot, 2004). O*NET is an extensive, flexible, and updateable computerized

occupational database that describes occupations, and has replaced and extended the

Dictionary of Occupational Titles (Converse et al., p. 452). O*NET contains

approximately 1,000 occupations representing most job titles within the U.S. civilian

labor force. The database is organized along six broad domains. The domains are:

worker characteristics (abilities, occupational values and interests, work styles), *worker*

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requirements (knowledge, skills, education), *occupational requirements* (generalized work activities, work context), *experience requirements* (training, experience, licensure), *occupation characteristics* (labor market information, occupational outlook, wages) and *occupation-specific requirements* (occupational tasks). Occupations are quantitatively described on a scale of 0-100 according to the required level and importance of each of these variables. Level ratings reflect the level of the variable required to perform the job and importance ratings reflect the importance of the variable for successful performance on the job. For example, a translator or interpreter's knowledge of the English language does not need to be extremely advanced (level rating = 59). However, knowledge of the English language is very important in this occupation (importance rating = 96).

O*NET was used as a source for obtaining occupational descriptions and attributes. Information was obtained through multiple O*NET reports. These included a summary page report (summarizing tasks, knowledge, skills, abilities, work activities, work context, job zone, interests, and work values, without importance ratings), a detail report (detailing tasks, knowledge, skills, abilities, work activities, work context, job zone, interests, work values, and work needs with importance ratings), and a custom report (where the researcher searches for descriptors that fall above a minimum importance rating). The final selection of occupations included in Study 1 was based on a multi-step process, which is described below.

Part I: Selection of Occupations

Step 1: Identification of Attributes that Represent Fluid and Crystallized Ability

Based on a review of the literature examining fluid and crystallized ability, a refined list was developed that identified and matched O*NET abilities to fluid and crystallized ability.   See Appendix B for references and detailed findings. Two of the most cited attributes for fluid and crystallized ability were chosen from this list to represent occupations that are dependent on fluid and crystallized ability. The two most cited attributes of fluid ability were inductive and deductive reasoning. For crystallized ability, the two most cited attributes were written and oral comprehension and the third most cited attribute was knowledge of the English language.   However, knowledge of the English language was chosen over oral comprehension because it was believed there would be too much overlap between the written and oral comprehension categories.

Step 2: Identification of Occupations that Represent Fluid and Crystallized Ability

Because O*NET contains over 1,000 occupations, it was necessary to narrow the choices by identifying those occupations requiring high levels of fluid and crystallized ability. To accomplish this, only those occupations having importance ratings of 70 or higher on any of: inductive reasoning, deductive reasoning, written comprehension, or knowledge of the English language were initially selected. An importance rating of 70 was chosen to ensure that the attribute was essential to that occupation.   For an occupation to represent fluid ability, importance ratings had to be 70 or higher for both inductive and deductive reasoning. The ratings for the existing occupations were then averaged to obtain one importance rating representing fluid ability. Likewise, for an occupation to represent crystallized ability, importance ratings had to be 70 or higher for both written comprehension and knowledge of the English language. The ratings for the

existing occupations were then averaged to obtain one importance rating representing crystallized ability.

Step 3: Selection of Occupations Representing Fluid and Crystallized Ability

The selection of occupations had to be further refined so that an occupation would represent only one ability, and not the other. Thus, occupations with importance ratings for both fluid and crystallized ability were eliminated and only occupations that were representative of <u>either</u> fluid <u>or</u> crystallized ability were included in the study. This was to ensure that only one ability per occupation would be salient and to avoid confusion with a secondary ability.

Step 4: Identification of Occupations that Represent Telework and Office work

Based on a review of the literature examining office work and telework, a refined list of those occupations identified as being suited for telework was developed. In contrast, occupations selected to represent office work were chosen based on amount of face-to-face interaction with others required and the degree to which the environment had to be either an office or location outside of the home.

Step 5: Selection of Occupations

Use of the above process resulted in a total of 32 occupations. There were 8 each of fluid ability / office work, fluid ability / telework, crystallized ability / office work, and crystallized ability / telework. See Appendix C for the complete list of occupations.

Part II: Development of Occupational Job Descriptions

Job descriptions had to be created for the 32 occupations identified in the previous section. Each job description consisted of two sections: "Major Responsibilities" and "Requirements" taken from the occupation's description in O*NET. The major responsibilities section conveyed information about the job-related tasks associated with the occupation. The requirements section conveyed information about the type of worker best suited for that occupation.   Also included in the description was the minimum number of years experience required. Tables 1 through 4 contain samples of the job descriptions used.

Step 1: Development of Major Responsibilities

A search was conducted for each of the 32 occupations on O*NET. Five tasks were chosen from the summary page.   The tasks were selected based on the definitions developed that describe telework and office work. For example, an occupation identified as belonging to the office work context would only include those tasks suited for office work (e.g., tasks that require face-to-face communication), and would not include tasks that were suited for telework (e.g., those that can be performed on a computer or telephone). This same logic was followed for occupations slated for telework.

Step 2: Development of Requirements

Interests

A search was conducted for each of the 32 occupations on O*NET. Five "interests" were chosen from the detail page.   Interests were based on Holland's 6-factor

personality typology (i.e., realistic, investigative, artistic, social, enterprising, and conventional; Holland, 1996). See Appendix D for definitions of these interests. Interests are often applied in the process of person-job matching (Peterson et al., 2001). O*NET assigns each interest an importance rating. The five interests with an importance rating of 50 or greater were incorporated into the "requirements" section of the job description.

Years of Experience

For each of the 32 occupations, the minimum number of years of experience required was obtained from O*NET and was included in the requirements section.

Highlighting an Occupation's Respective Ability

To highlight that an occupation was dependent on fluid ability, the definition for either inductive or deductive reasoning was combined with one of the five major responsibilities. This produced the first item that was listed at the top of the requirements section. For example, the occupation of a Forensic Science Technician represented an occupation dependent on fluid ability. One major responsibility of this occupation is to: Identify and quantify drugs and poisons found in biological fluids and tissues, in foods, and at crime scenes. This responsibility was combined with the definition of inductive reasoning (The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events)), to form the first item listed under requirements: *Must possess ability to combine pieces of information, such as drugs and poisons found in fluids and tissues, in foods, and at crime*

scenes, to form conclusions as to their quantity and identity. Similarly, for the next

occupation dependent on fluid ability (e.g., database administrator), a responsibility was

combined with the definition of deductive reasoning to produce the first item listed in the

requirements section.

The same procedure was performed for jobs categorized as dependent on

crystallized ability. Written comprehension was alternated with knowledge of English

and combined with a major responsibility to produce the first item listed under the

requirements section.

Part III: Development of Applicant Information Sheets

Applicant information sheets were created specifically for each of the 32

occupations to illustrate a job applicant's qualifications for that job. Each applicant

information sheet detailed the number of years experience the applicant possessed as well

as five items detailing the type of experience held. Items in the applicant information

sheet were selected to portray a moderately qualified applicant. Tables 1 through 4

contain samples of the applicant information sheets.

Step 1: Development of Applicant Qualifications

A search was conducted for each of the 32 occupations on O*NET to select those

job requirements that had importance ratings of 70 or higher. The most important entry

from the knowledge, skill, ability, work activity, and work need category was chosen

from a custom report page to create five qualification items.

For example, for the Private Sector Executive occupation, the top knowledge requirement was:

Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

This information was listed as the following item on the applicant information sheet:

Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

Rules and Exceptions

1. In the event that the most important attribute in two categories was the same (e.g., knowledge and skill), the second most important attribute in the second category (e.g., skill) was entered on an applicant's information sheet.

2. Should the most important attribute not be applicable (e.g., the most important "Work Need" for Librarians was *Working Conditions: Workers on this job have good working conditions),* the next most important attribute (e.g., work need) was used.

3. Finally, if an attribute suggested one ability (e.g., crystallized ability) was important to the job (e.g., the most important ability for a purchasing agent was oral expression) when that occupation had been designated as being dependent on

a different ability (e.g., fluid ability), the next most important attribute was entered on the applicant's information sheet (e.g., inductive reasoning).

Step 2: Creation of Applicant's Years of Experience

The applicant qualification sheet listed the number of years experience held by the applicant. Years of experience held was obtained by adding the minimum years of experience required (under job description requirements) + 1 year. Number of years experience ranged from 1 to 6. This formula was held constant for each of the 32 occupations. Thus, if the minimum number of years experience a Private Sector Executive must have is 5, the applicant would have 6 years of experience. Tables 1 through 4 below depict sample job descriptions and applicant information sheets for each of the four conditions: crystallized ability/office work, crystallized ability/telework, fluid ability/office work, and fluid ability/telework.

Table 1

Sample Job Description and Applicant Information Sheet for the Gc/Office Work

Condition

Government Property Inspector and Investigator

Major responsibilities:
- Collect, identify, evaluate, and preserve case evidence.
- Inspect government-owned equipment and materials in the possession of private contractors, in order to ensure compliance with contracts and regulations and to prevent misuse.
- Inspect manufactured or processed products to ensure compliance with contract specifications and legal requirements.
- Locate and interview plaintiffs, witnesses, or representatives of business or government in order to gather facts relevant to inspections or alleged violations.
- Submit samples of products to government laboratories for testing as required.

Requirements:
- Must be capable of reading and understanding contracts and regulations
- Ability to start up and carry out projects
- Comfort in leading people and making many decisions
- Ability to follow set procedures and routines
- Comfort with following a clear line of authority
- Comfort in working and communicating with people
- A minimum of 3-4 years of experience

Applicant's resume

Objective: Position as a Government Property Inspector and Investigator

Qualifications:
- 4.5 years of experience
- Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.
- Stellar judgment and decision making skills, such as considering the relative costs and benefits of potential actions to choose the most appropriate one.
- Well-developed ability to recognize problems, such as to tell when something is wrong or is likely to go wrong
- Experience in observing and obtaining information from all relevant sources
- Ability to make decisions independently and take responsibility

Table 2

Sample Job Description and Applicant Information Sheet for the Gc/Telework Condition

Sociologist

Major responsibilities:
- Prepare publications and reports containing research findings.
- Analyze and interpret data in order to facilitate the understanding of human social behavior.
- Plan and conduct research to develop and test theories about societal issues such as crime, group relations, poverty, and aging.
- Consult with and advise individuals such as administrators, social workers, and legislators regarding social issues and policies, as well as the implications of research findings.
- Develop approaches to the solution of groups' problems, based on research findings in sociology and related disciplines.

Requirements:
- Use of correct spelling, composition, and grammar in preparation of research publications and reports
- Ability to work with ideas that require extensive thought
- Strong self-expression skills
- Ability to work without following a clear set of rules
- Comfort in working with, communicating with, and teaching people
- Help and provide service to others
- A minimum of 5 years of experience

<div align="center">Applicant's resume</div>

Objective: Position as a Sociologist

<u>Qualifications</u>:
- 6 years of experience
- Knowledge of group behavior and dynamics, societal trends and influences, human migrations, ethnicity, cultures and their history and origins.
- Skilled writing with respect to the needs of the audience
- Strong ability in spoken communication of information and ideas to ensure understanding
- Experience in analyzing data and other information, including: identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts
- Capability to work and plan with little supervision

Table 3

Sample Job Description and Applicant Information Sheet for the Gf/Office Work Condition

Registered Nurse

Major responsibilities:
- Monitor, record and report symptoms and changes in patients' conditions.
- Modify patient treatment plans as indicated by patients' responses and conditions.
- Order, interpret, and evaluate diagnostic tests to identify and assess patient's condition.
- Direct and supervise less skilled nursing/health care personnel, or supervise a particular unit on one shift.
- Prepare patients for, and assist with, examinations and treatments.

Requirements:
- Ability to combine information from diagnostic tests to arrive at conclusions regarding patients' conditions
- Help and provide service to others
- Ability to work with ideas that require an extensive amount of thinking
- Capability in searching for facts and figuring out problems mentally
- Experience with practical, hands-on problems and solutions
- Dealings with plants, animals, and other materials
- A minimum of 3-4 years of experience

Applicant's resume

Objective: Position as a Registered Nurse

<u>Qualifications</u>:
- 4.5 years of experience
- Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.
- Strong communication skills, such as giving full attention to what other people are saying, taking time to understand the points being made, and asking questions as appropriate.
- Well-developed ability to recognize problems, such as to tell when something is wrong or is likely to go wrong
- Enjoyment in the provision of personal assistance, medical attention, emotional support, and other personal care to patients
- Capable of dealing with a lot of activity

Table 4

Sample Job Description and Applicant Information Sheet for the Gf/Telework Condition

Computer Software Engineer

Major responsibilities:
- Modify existing software to correct errors, allow it to adapt to new hardware, or to improve its performance.
- Analyze user needs and software requirements to determine feasibility of design within time and cost constraints.
- Design, develop and modify software systems, using scientific analysis and mathematical models to predict and measure outcome and consequences of design.
- Develop and direct software system testing and validation procedures, programming, and documentation.
- Analyze information to determine, recommend, and plan computer specifications and layouts, and peripheral equipment modifications.

Requirements:
- The ability to combine data and other information to make recommendations about computer specifications, layouts, and modifications.
- Ability to work with ideas that require an extensive amount of thinking
- Capability to searching for facts
- Capacity to figure out problems mentally
- Comfortable working independently
- Ability to follow a clear line of authority
- A minimum of 3 years of experience

<div align="center">Applicant's resume</div>

Objective: Position as a Computer Software Engineer

<u>Qualifications</u>:
- 4 years of experience
- Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- Experience in writing computer programs for various purposes.
- Ability to apply general rules to specific problems to produce answers that make sense
- Ability to use computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Ability to make decisions independently and take responsibility

CHAPTER 5

STUDY 1: EXAMINATION OF JOB VARIABLES

Method

Overview

The goals of Study 1 were three-fold. The first goal relates to understanding if, and how, managers acknowledge the role of task demands when evaluating jobs. More specifically, can managers differentiate when a job is dependent primarily on fluid or crystallized ability? If so, what types of jobs are perceived as being dependent on Gf or Gc? The second goal relates to understanding if, and how, managers recognize the role of the work context when considering various jobs. In particular, can managers distinguish when a job is more suited to a telework or to a traditional office work context? If so, what are the jobs that are viewed as being suited to these different contexts? The third goal was to identify those jobs that were rated by managers as representative of the following categories: Gc/Office work, Gf/Office work, Gc/Telework, Gf/Telework, and use these jobs as stimuli in Study 2.

Participants read each of the 32 occupations identified in the pilot study, and rated the occupations on a number of dimensions: The extent to which the occupations were dependent on fluid ability and crystallized ability, perceived suitability of the occupations to telework and office work, perceived status or prestige associated with each occupation, and suitability of the occupations to older workers as well as younger workers. SurveyMonkey.com is a website that enables users to create professional online surveys, and was used to create the online survey for study 1. Study 1 was conducted in three

phases. Phases 1 and 2 consisted of undergraduate participants from the Georgia Institute of Technology. Phase 3 was conducted with a sample of hiring managers.

Phase 1: Student sample

Participants

Participants were 35 (12 male and 23 female) undergraduate students from the Georgia Institute of Technology who received course credit in exchange for their voluntary participation. Participants were told that the purpose of the study was to investigate decision-making strategies in employment situations. To be eligible to participate, participants had to have been employed for a minimum of 15 hours a week at the time of the study, or in the past 12 months, and English must be their primary language. Participants had a mean age of 19.7 years, and had been employed in their current position for an average of 1.06 years.

Procedure

Participants read a set of instructions about the rating task and read the definitions for telework, office work, fluid ability, crystallized ability, and job status. See Appendix A for the definitions. Participants then read the first job description, and rated on a scale of 1 (Not at all) to 5 (Extremely):   The extent to which the occupation was dependent on fluid ability and crystallized ability, the perceived suitability of the occupation to telework and office work, the perceived status or prestige associated with the occupation, and the perceived suitability of the occupation for older workers and younger workers. Participants also completed three forced-choice questions: Which ability the occupation

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was most dependent on, which work context the occupation was most suited to, and which worker (younger or older) that occupation was best suited for. Participants then read the applicant qualification sheet and rated how qualified the applicant was for that job. Definitions for telework, office work, fluid ability, crystallized ability, and job status were presented before each subsequent job description. This sequence was followed for all 32 occupations. Order in which the occupations were presented was counterbalanced across two survey versions. From this point on, occupations chosen based on their dependence on fluid ability will be labeled Gf jobs. Similarly, occupations chosen based on their dependence on crystallized ability will be labeled Gc jobs.

Support for Task Demands

One goal of the current study was to establish whether fluid ability and crystallized ability are acknowledged as being of primary importance to various jobs. More specifically, if a job was selected based on its dependence on fluid ability, how would we know if participants recognize that job as being dependent on fluid ability? Similarly, if a job was selected based on its dependence on crystallized ability, how would we know if participants perceive that job as being dependent on crystallized ability? To answer these questions, rules were established to determine when we can conclude that a participant acknowledges the primary importance of an ability to a specific job.

Rating criteria

To say that participants recognize the primary importance of fluid ability in a Gf job, participants must rate the Gf job with at least a median rating of 4 (1=not at all to 5=extremely) on the scale: "How dependent is this job on fluid ability?" Similarly, to say that participants recognize the primary importance of crystallized ability in a Gc job, participants must rate the Gc job with at least a median rating of 4 (1=not at all to 5=extremely) on the scale: "How dependent is this job on crystallized ability?"

Successful performance in an occupation often requires a mixture of abilities. Thus, both fluid and crystallized ability may be particularly important to a job. Therefore, even if a Gf job is rated as a 4 on both questions ("How dependent is this job on fluid ability?" and "How dependent is this job on crystallized ability?"), we can still say that the importance of fluid ability has been recognized. However, if a Gf job receives a lower rating on: "How dependent is this job on fluid ability?" as compared to the rating for "How dependent is this job on crystallized ability?" then we would say that the primary importance of fluid ability to the Gf job has not been recognized. These rules apply in the same way to Gc jobs.

Support for Work Context

Occupations are almost always more suited to an office work context. Therefore, higher telework ratings were not expected for any occupations, even when selected based on their suitability to telework. Any median rating of 3 or higher for telework indicates that the target occupation is being recognized as suited to a telework context (1=not at all suited to 5 = extremely suited). However, when an occupation is selected based on its suitability to an office work context, participants must provide higher median ratings for

office work suitability as compared to telework suitability to say that occupation is recognized as suited to an office work context.

Results

Overview of analyses

Descriptive statistics were computed for ratings of fluid and crystallized ability, as well as for office work and telework contexts for each of the 32 occupations. The median was chosen as the measure of central tendency as it is based on the ordinal properties of the data, and is appropriated for ranked data (Ferguson & Takane, 1989). The ratings on ability and work context were ordinal in nature (e.g., not at all, somewhat, moderately, very, and extremely).

Results indicate that the following number of occupations that met the above criteria: 5 out of 8 for Gc/Office work, 4 out of 8 for Gc/Telework, 6 out of 8 for Gf/Office work, and 0 out of 8 for Gf/Telework. See Table 5 for descriptive statistics. Six of the fluid ability/telework occupations were not appropriate for further use, since ratings for crystallized ability were higher than ratings for fluid ability. The remaining two fluid ability/telework occupations were only given median ratings of 2 and 2.5 regarding their suitability for telework. The lack of support for these occupations indicated that additional fluid ability/telework occupations had to be developed and tested with another set of participants.

Phase 2: Student sample

Overview

Results from Study 1 provided guidance regarding the types of occupations that were, and were not, perceived as being suited to a telework context. For Gf jobs specifically, jobs that involved working with tools or equipment, as well as jobs requiring working with others, were not perceived as being suited to a telework context.

The only occupations perceived as being suited to a telework context were those of a database administer and an actuary. Thus, an additional 7 occupations were developed with the same procedures used to develop the initial 32 occupations.

Table 5

Median Ratings for the 32 Occupations Presented in Phase 1 of Study 1

Condition	Occupation	Fluid[a] ability	Crystallized[a] ability	Telework[b]	Office[b] work
Gc/Office	Education Administrator	3	4	2	4
	I/O Psychologist	4	4	2	4
	Government Property Inspector	3	4	2	3
	Radiologic Technician	3	4	1	5
	Public Relations Manager	4	3	3	4
	School Psychologist	4	4	1	4
	Radio and Television Announcer	4	3	2	4
	Secretary	3	3	2	5
Gc/Telework	Technical Writer	3.5	4	3	4
	Economist	3	4	2	4
	Advertising Sales Agent	4	3	3	4
	Real Estate Appraiser	3	4	3	4
	Sociologist	3	4	3	4
	Compensation and Benefit Manager	3	4	2	4
	Reporter and Correspondent	4	4	3	3
	Graduate Teaching Assistant	3	4	2	4

Note: [a] Rating scale = 1 (Not at all dependent) to 5 (Extremely dependent)
[b] Rating scale = 1 (Not at all suited) to 5 (Extremely suited)

Table 5, cont'd.

Median Ratings for the 32 Occupations Presented in Phase 1 of Study 1

Condition	Occupation	Fluid[a] ability	Crystallized[a] ability	Telework[b]	Office[b] work
Gf/Office	Forensic Science Technician	4	4	1	4
	Chemist	3	4	2	5
	Data Processing Equipment Repairs	4	4	2	4
	Registered Nurse	4	4	1	5
	Police Detective	4	3	1	4
	Fire Investigator	4	4	2	3
	Coroner	3	4	1	5
	Security Guard	4	3	1	3
Gf/Telework	Database administrator	3	4	3	4
	Mining and Geological Engineer	3	4	2.5	3
	Insurance Underwriter	3	4	2	4
	Actuary	3	4	3	4
	Engineering Manager	4	4	2	4
	Training and Development Manager	3	4	2	4
	Operations Research Analyst	3	4	2.5	4
	Mechanical Drafter	4	4	2	4

Note: [a] Rating scale = 1 (Not at all dependent) to 5 (Extremely dependent)
[b] Rating scale = 1 (Not at all suited) to 5 (Extremely suited)

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These 7 occupations, as well as 2 Gf/Telework occupations from the first study (Database Administrator and Operations Research Analyst) were tested in a new sample of participants. These latter two occupations were retained for further testing because they were the closest to receiving support out of the initial 8 Gf/Telework occupations.

Participants

A separate set of participants provided ratings on the occupations selected as dependent on fluid ability and suited to a telework context. 30 (19 male and 11 female) undergraduate students from the Georgia Institute of Technology completed the survey. The same procedures from phase 1 were followed regarding compensation, instructions given, as well as eligibility criteria. However, participants who had completed phase 1 were not eligible to participate in phase 2. Participants had a mean age of 19.4 years, and had been employed in their current position for an average of 1.15 years.

Procedure

The same procedure used in phase 1 was followed in phase 2. The only difference was that 9, instead of 32, occupations were rated.

Results

Descriptive statistics were computed for ratings of fluid and crystallized ability, as well as for office work and telework contexts. See Table 6 for descriptive statistics. The same method in phase 1 was used to determine support for task demands and work

context.   Results indicate that 5 occupations were perceived as being dependent on fluid ability and suited to telework.

Table 6

Median Ratings for the 9 Occupations Presented in Phase 2 of Study 1

Condition	Occupation	Fluid[a] ability	Crystallized[a] ability	Telework[b]	Office[b] work
Gf/Telework	Environmental Scientist	4	4	3	4
	Computer Software Engineer	4	4	3	4
	Purchasing Agent	4	3	3	4
	Industrial Engineer	4	4	2.5	4
	Natural Science Manager	3	4	3	4
	Safety and Health Engineer	4	3	3	4
	Database Administrator	3	4	3	4
	Aerospace Engineer	4	4	2	4
	Operations Research Analyst	4	4	3	4

Note: [a] Rating scale = 1 (Not at all dependent) to 5 (Extremely dependent)
        [b] Rating scale = 1 (Not at all suited) to 5 (Extremely suited)

Phase 3: Hiring Manager sample

Overview

Phases 1 and 2 provided guidance about the types of occupations viewed as dependent on fluid ability and crystallized ability, as well as those occupations viewed as suitable to telework and office work contexts. However, the question remains, do hiring managers view these occupations in the same way? Thus, the goal of phase 3 was to administer those occupations that received support in phases 1 and 2 to a sample of hiring

managers to see if results held true in this sample. In addition, those occupations that received support from phase 3 would be included in Study 2, to further examine the role of work context and task demands on managers' attitudes.

Occupations included in phase 3

Phases 1 and 2 resulted in a total of 20 occupations. However, these occupations were further refined for phase 3. First, redundant occupations were eliminated. For example, while both the I/O Psychologist and the school psychologist positions were rated as Gc/Office work occupations, the I/O psychologist occupation was eliminated because it had a higher telework rating. Similarly, the police detective occupation was eliminated as it was somewhat redundant with the forensic science technician occupation. Second, occupations that might be age-typed (i.e., viewed as being especially suited for an older or younger worker) were eliminated. For instance, the security guard position was eliminated, due to some stereotypes of security guards as older workers. Third, any occupations with inconsistent results were eliminated. The operations research analyst position was rated as a Gf/Telework occupation, yet the modal answer for telework was a "1", indicating that the occupation was most often perceived as "not at all" suitable for telework. These refinements resulted in a total of 16 occupations included in phase 3: Four each of Gc/Office work, Gc/Telework, Gf/Office work, and Gf/Telework.

Participants

Hiring managers were recruited to complete a survey examining decision-making in employment situations.   Recruitment involved several methods. Candidates who had

previously participated in an assessment at a Southeastern management consulting firm were contacted via email and invited to participate. Other sources included a contact at a national staffing agency who forwarded the study announcement to existing clients and co-workers with hiring responsibilities. A request to participate was posted on the SHRM (Society for Human Resource Management) message board. Finally, emails and messages requesting participation were sent out to HR listservs and posted on other discussion boards. See Appendix E for a complete list of these websites.

A total of 77 (23 male, 26 female, 28 no gender given) hiring managers completed the survey and were entered in a sweepstakes to win 1 of 10 $75 gift certificates to Amazon.com. Participants were told that the purpose of the study was to investigate decision-making strategies among managers. To be eligible to participate, participants had to speak English as their primary language, be employed full-time, and part of their job duties must have involved the following: Reviewing applications for employment, eliminating unsuitable candidates, interviewing applicants, and participating in making final selections among job applicants.

Participants ranged from age 30 to 62 ($M = 42.25$, $SD = 8.46$) and had an average of over 12 years of hiring experience ($M = 12.41$, $SD = 7.73$). Forty hiring managers provided information regarding the number of people they had hired. Of these respondents, 3 had hired 5 or fewer employees (8%), 6 had hired between 6 and 10 employees (15%), 5 had hired between 11 and 15 employees (13%) and 26 had hired more than 16 employees (65%).

Procedure

The same procedure used in phases 1 and 2 was followed in phase 3.

Support for Task Demands and Work Context

The results from phases 1 and 2 indicated that students were able to recognize some occupations as being particularly dependent on either Gc or Gf. The goal of phase 3 of this study was to investigate whether this finding translated to a sample of hiring managers. Furthermore, if managers do view some occupations as being primarily dependent on Gf or Gc, what are those occupations?

As in phases 1 and 2, rules were established to determine when we could conclude that a manager perceived a Gc occupation as being primarily dependent on crystallized ability, and a Gf occupation as being primarily dependent on fluid ability. The rules however, were somewhat stricter for this phase.

Rating criteria

To conclude that managers recognized the primary importance of fluid ability in a Gf occupation, managers must have rated the Gf occupation with at least a median rating of 4 (1=not at all to 5=extremely) on the scale: "How dependent is this job on fluid ability?" Similarly, to conclude that managers recognized the primary importance of crystallized ability in a Gc occupation, participants must have rated the Gc occupation with at least a median rating of 4 (1=not at all to 5=extremely) on the scale: "How dependent is this job on crystallized ability?" However, a more stringent criterion for this

sample was that a Gf job had to have higher ratings on fluid ability as compared to crystallized ability, and vice versa. The same rules in phases 1 and 2 for work context were used in this phase as well.

Results

Descriptive statistics were obtained for ratings of fluid and crystallized ability, as well as for office work and telework contexts for each of the 16 occupations. See Table 7 for descriptive statistics. Managers rated only 1 Gc/Office work occupation as more dependent on crystallized ability (vs. fluid ability) and more suited for office work (vs. telework). Additionally, managers rated only 2 Gc/Telework occupations as more dependent on crystallized ability (vs. fluid ability), and as suited to a telework context. Finally, neither Gf/Office work nor Gf/Telework occupations were rated as more dependent on fluid ability (vs. crystallized ability).

Overall, occupations selected as being suitable for telework were rated as such by hiring managers. More specifically, managers provided median ratings of at least 3 or higher on telework suitability for 7 out of the 8 telework occupations (e.g., Technical Writer, Real Estate Appraiser, Sociologist, Reporter and Correspondent, Environmental Scientist, Computer Software Engineer, and Safety and Health Engineer). The one telework occupation that did not receive a median rating of 3 or higher on telework suitability was that of a Purchasing Agent.

In contrast, only 3 Gc occupations were given higher ratings on "How dependent is this job on crystallized ability" as compared to "How dependent is this job on fluid ability" (e.g., Radiologic Technician, Technical Writer, and Real Estate Appraiser).

Furthermore, no Gf occupation received higher ratings on "How dependent is this job on fluid ability" as compared to "How dependent is this job on crystallized ability".

Overall, these results suggest that occupations were not viewed by managers as being significantly more dependent on one ability than another. However, managers viewed all the occupations that were included as being at least moderately, if not very, dependent on <u>both</u> fluid and crystallized ability.

The implications of these results indicate that the primary importance of one ability over another was not salient enough to be present in hiring manager's ratings.

Table 7

Median Ratings for the 16 Occupations Presented in Phase 3 of Study 1

Condition	Occupation	Fluid[a] ability	Crystallized[a] ability	Telework[b]	Office[b] work
Gc/Office	Education Administrator	4	4	2	4.5
	Government Property Inspector	4	4	3	3
	Radiologic Technician	3	4	1	5
	School Psychologist	4	4	2	5
Gc/Telework	Technical Writer	3	4	4	3.5
	Real Estate Appraiser	3	4	4	3
	Sociologist	4	4	3	4
	Reporter and Correspondent	4	3	4	3
Gf/Office	Forensic Science Technician	4	5	2	3
	Data Processing Equipment Repairer	3	4	2	4
	Registered Nurse	4	4	1	5
	Fire Investigator	4	4	4	3
Gf/Telework	Environmental Scientist	4	4	3	4
	Computer Software Engineer	4	4	4	4
	Purchasing Agent	3	4	2	4
	Safety and Health Engineer	4	4	3	4

Note: [a] Rating scale = 1 (Not at all dependent) to 5 (Extremely dependent)
[b] Rating scale = 1 (Not at all suited) to 5 (Extremely suited)

Discussion

The goals of the current study were three-fold. These goals involved learning if managers consider the role of the work context, as well as if, and how, managers recognize the role of task demands, when evaluating jobs. The third goal was to identify those jobs that were rated by managers as representative of the following categories: Gc/Office work, Gf/Office work, Gc/Telework, Gf/Telework, and use these jobs as stimuli in Study 2.

Some existing research has examined the nature of the job; in terms of what types of jobs may be considered suitable to telework. For example, it has been suggested that the following occupations may be suited to telework: accountants, architects, lawyers, managers, technicians, journalists, teachers, graphic designers, analysts, researchers, data entry clerks, sales and marketing professionals, customer service representatives, and insurance claims specialists, to name a few (Daniels, Lamond, & Standen, 2000). However, up until now, no studies have empirically investigated what jobs are perceived by managers as being suited to telework.

The current study is one of the first of its kind with the ability to answer these questions. Overall, results from both student and hiring manager samples indicate that all but one of the office work occupations were perceived as being most suited to office work (e.g., education administrator, government property inspector, radiologic technician, school psychologist, forensic science technician, data processing equipment repairer, and registered nurse). The occupation of fire investigator was rated as more suited to a telework, rather than an office work context by hiring managers. In addition, both student and hiring manager samples rated this occupation's suitability to an office

work context with only a rating of 3 (1= not at all suited, 5=extremely suited). It may be that due to the active nature of the job (e.g., photographing damage, collecting evidence, and examining fire sites) the job was seen as belonging neither to a traditional office context, nor to a telework context.

In all but one case, the hiring manager sample gave telework jobs higher suitability ratings to the telework context as compared to the student sample (students gave purchasing agents a higher telework suitability score than did hiring managers). This may be due to the fact that hiring managers had more years of work experience ($M =$ 5.38, $SD = 5.23$) as compared to undergraduate students ($M=1.05$, $SD = 0.77$). During that time, hiring managers may have been exposed to a greater variety of jobs that they themselves, or others they have known, have teleworked in. In addition, the following jobs were seen by both samples as being at least moderately suited to a telework context: Technical writer, real estate appraiser, sociologist, reporter and correspondent, environmental scientist, computer software engineer, and safety and health engineer. Hiring managers only gave the job of purchasing agent a suitability rating of 2 to telework contexts.

These findings provide support for the notion that managers can, and do, differentiate among jobs particularly suited to telework contexts, as well as among those jobs more suited to office work contexts.

The research on managerial decision making has been around for longer, and there is most definitely no shortage of it. Research clearly indicates that the single best predictor of job performance is cognitive ability (Park, 1994; Salthouse & Maurer, 1996). One of the most well known theories of cognitive ability is that of fluid and crystallized

intelligence. However, research has still yet to be conducted that examines whether managers attend to this type of ability when evaluating various jobs. Do managers realize that occupations can differ in their demands for these abilities? If so, what occupations do managers' view as being dependent on crystallized ability and fluid ability?

The findings for differentiating among task demands of the job were less clear. The student sample rated 6 out of the 8 Gc occupations higher on crystallized ability as opposed to fluid ability (education administrator, government property inspector, radiologic technician, technical writer, real estate appraiser, and sociologist). However, the sample of hiring managers only rated 3 of these occupations higher on crystallized ability (radiologic technician, technical writer, and real estate appraiser), and rated 4 of these occupations (education administrator, government property inspector, school psychologist, and sociologist) as "very" dependent on both fluid and crystallized ability.

The student sample only rated 2 Gf occupations as higher on fluid ability as opposed to crystallized ability (purchasing agent and safety and health engineer). The other 6 Gf occupations were rated as "very" dependent on both fluid and crystallized ability. The hiring manager sample actually rated 3 Gf occupations as higher on crystallized ability as opposed to fluid ability (forensic science technician, data processing equipment repairer, and purchasing agent). The rest of the Gf occupations were rated as "very" dependent on both fluid and crystallized ability.

There are a number of possible explanations for the difference between hiring managers and students in recognizing the primary importance of fluid and crystallized ability. One explanation may be that the student sample was simply better then the hiring

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manager sample at differentiating these abilities, perhaps because they were actively taking classes, and used to reading definitions and applying them to concepts, or perhaps because they previous learned about the concepts of crystallized and fluid abilities. Alternatively, students might be better at matching the words in the ability definitions to key words in the job descriptions. Yet another explanation may be that hiring managers are more cognizant of the fact that many jobs require a lot of Gc, even if Gf is also required (and vice versa). Both samples seemed to perceive the Gf occupations as being very dependent on both fluid and crystallized ability.

Overall, hiring managers seemed to be able to differentiate the work context when evaluating occupations. However, they could not apparently differentiate the primary importance of one task demand over another when evaluating the same occupations, and for the most part, believed that these occupations were very dependent on both fluid ability and crystallized ability. This differentiation was not evident in ratings, but does this mean that hiring managers are not capable of differentiating the importance of one ability over another? Or does it possibly mean that they can differentiate, but simply do so without awareness? These questions are further explored in Study 2.

CHAPTER 6

STUDY 2: INVESTIGATING THE ROLE OF AGE, WORK CONTEXT, AND TASK DEMANDS ON ATTITUDES TOWARDS OLDER APPLICANTS

Overview

The purpose of the current study was to investigate the role of age, work context, and task demands on managers' attitudes of younger and older job applicants, as well as the psychological factors that may explain attitudes towards older workers. However, because hiring managers are a limited and specialized population, the scope of participants included was expanded to include full-time employees, rather than only hiring managers. Participants rated the qualification of younger and older job applicants for jobs varying by work context (e.g., positions suitable for telework or for conventional office work) and task demands (jobs requiring high levels of Gf, or high levels of Gc).

This study was designed to answer the following questions: (1) To what degree are attitudes influenced by applicant age? (2) Do attitudes differ based on the work context? (3) Do attitudes vary depending on task demands? (4) To what extent do these variables interact with one another? (5) What are the factors that underlie attitudes towards older workers?

Participants were told that the purpose of the study was to examine decision making processes in employment interviews and that their task was to read a number of job descriptions and rate a job applicant for each position. All job applicants were described as moderately qualified for the job. Participants first completed a demographics and managerial experience questionnaire. Next, participants were given

instructions to complete the rating tasks. Job descriptions varied by *work context* and *task demands*. Participants also received a biographical sketch of either old or younger job applicants that detailed that applicant's relevant qualifications. Participants then completed rating scales assessing the applicant's suitability for the target job (e.g. "How qualified do you think this person is for the job of _____?").

The next part of the study involved a survey component assessing participants' attitudes towards telework and older workers. Attitudes towards telework were assessed with questionnaires developed by the University of Miami, assessing experience with telework, attitudes towards telework, and opportunity for telework in the participant's organization (Czaja & Sharit, unpublished manuscript). Attitudes towards older workers were assessed with several questionnaires: The Fraboni Scale of Ageism (Fraboni, Saltstone, & Hughes, 1990), Beliefs about Older Workers (Hassell & Perrewé, 1995), Palmore's First Facts on Aging Quiz (Harris, Changas, & Palmore, 1996), and Attitudes towards Discriminatory Practices (Chiu et al., 2001). A shortened version of the RWA – Right-Wing Authoritarianism Scale (Zakrisson, 2005) was completed as well.

StudyResponse.com was used to collect participants. StudyResponse has a diverse pool of almost 87,000 participants, with an average age of 34 years (*sd* = 11.5 years), and 68% female. The average educational level of their pool is approximately 2 years of college, and participants have an average of 15 years of working experience (*sd* = 10.6).

Hypotheses

Relationship between job applicants' age and participants' attitudes

Research indicates that overall, older workers are perceived and evaluated less favorably than younger workers (Avolio & Barrett, 1987; Finkelstein et al, 1995; Gordon & Arvey, 2004; Hassell & Perrewe, 1995; Kite & Johnson, 1988; Kite, Stockdale, Whitley, & Johnson, 2005; Perry et al., 1996; Rosen & Jerdee, 1976a; Rupp, Vodanovich, & Credé, 2005).

However, a trend within this research suggests when instructed to make simulated employment decisions, younger participants in particular tend to discriminate against older workers (Finkelstein et al, 1995; Gibson et al, 1993; Gordon & Arvey, 2004). The in-group hypothesis states that it is a cultural norm to favor one's in-group over groups to which one does not belong. In a study investigating rater characteristics and perceptions of older workers' job performance, Taylor et al. (1989) found that the older the rater, the more favorable the evaluation of an older worker's performance. These results were similar those obtained by Gibson, Zerbe, and Franken (1993). The authors found that younger raters judged younger workers higher on work-related attributes. However, older raters judged older workers higher on work-related attributes. Additionally, several meta-analyses have found that younger raters were significantly more likely to evaluate older workers more negatively (Avolio & Barrett, 1987; Finkelstein et al., 1995; Gordon & Arvey, 2004; Kite et al., 2005; Perry et al., 1996; Rosen & Jerdee, 1976a, 1976b).

> **H1a:** Participants will provide significantly higher qualification ratings when the applicant is younger rather than older.

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H1b: Moderator analyses: According to the in-group hypothesis, age of rater may moderate the above relationship, and thus will be investigated as well.

Relationship between job applicants' age, work context, and participants' attitudes

Research indicates that older workers are generally perceived less favorably than younger workers (Finkelstein et al, 1995; Gordon & Arvey, 2004; Hassell & Perrewe, 1995; Kite & Johnson, 1988; Kite, Stockdale, Whitley, & Johnson, 2005; Perry et al., 1996; Rosen & Jerdee, 1976a; Rupp, Vodanovich, & Credé, 2005). However, attitudes are not entirely negative; some positive traits commonly attributed to older workers are those of stability and reliability (Chiu et al., 2001; Rosen & Jerdee; Warr & Pennington, 1993), loyalty (Warr & Pennington), conscientiousness (Chiu et al.; Warr & Pennington, 1993), and integrity (Rosen & Jerdee, 1976b). Research on managers' attitudes towards telework has shown that one common issue concerns trust. More specifically, managers may be fearful that employees are out playing instead of working (Kurland & Bailey, 1999; Nilles, 1998).

H2: An interaction between age and work context is expected. For telework jobs, older applicants will be rated significantly higher as compared to younger applicants due to perceptions concerning their stability and the independent nature of telework. In contrast, for conventional office work, younger applicants will be rated significantly higher as compared to older applicants in line with traditional research on attitudes and older workers.

Relationship between task demands and participants' attitudes

Research indicates that fluid abilities tend to decrease with age (Cattell, 1963; Kanfer & Ackerman; Salthouse, 2004) whereas crystallized abilities tend to increase with age (Cattell, 1968; Horn, 1968).

H3: An interaction between age and task demands is expected. More specifically, for jobs high in Gf, younger applicants will be rated significantly higher as compared to older applicants. In contrast, for jobs high in Gc, older applicants will be rated significantly higher as compared to younger applicants.

Relationship between applicant age, task demands, and work context

H4: An expected age by task demands by work context interaction is expected.

H4a: For jobs in the telework context, older applicants are expected to be rated almost as high as younger applicants for jobs dependent on Gf. In contrast, older applicants are expected to be rated significantly higher than younger applicants for jobs dependent on Gc.

H4b: For jobs in the office work context, older applicants are expected to be rated significantly lower than younger applicants for jobs dependent on Gf. In contrast, older applicants are expected to be rated significantly higher than younger applicants for jobs dependent on Gc.

Relationship between Authoritarianism and participants' attitudes

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Research has shown that authoritarians are relatively prejudiced (Altemeyer &

Hunsberger; Whitley, 1999). Furthermore, right-wing authoritarians (RWA) report more

hostility towards members of outgroups.

H4: Raters scoring high in authoritarianism will give significantly lower

qualification ratings to older, as compared to younger applicants.

Methods

Participants

The following four paragraphs describe the process used to collect data from

participants for Study 2. Figure 1 presents this process. A prescreening study was

conducted with 2,000 full-time employed participants from StudyResponse.com. The

prescreening study requested that participants indicate whether they met the eligibility

criteria (participants had to speak English as their primary language and be employed

full-time) as well as whether they would be willing to participate. Of these participants,

887 responded, indicating a response rate of 44%. Of the 887 participants who

responded, 662 were both eligible and willing to participate, indicating an eligibility rate

of almost 75%. There were no significant differences for either age or gender between

the 662 eligible participants and the remaining 225 who were not eligible to participate.

Of the 662 eligible participants, 325 participants were selected based on age (over

and under 40) and gender. There were no significant differences for either age or gender

between the 325 participants selected to participate in the survey and the remaining 337

who were not selected.   The 325 selected participants were paid a $15 gift certificate to

Amazon.com in advance.

Of the 325 participants who were selected to participate in the study, a total of 230 participants completed the survey, 18 partially completed the survey, and 77 did not take the survey, indicating a response rate of 76% for both complete and partially complete surveys, and 71% for completed surveys only. Typical response rates from the StudyResponse.com pool of participants have ranged from 10 to 30% (StudyResponse.com, 2007) with increased response rates for studies that conduct prescreening or direct payment study. Thus, the response rate achieved in the current study was well above average.

A total of 10 participants were removed based on outlier analyses, as well as one who was a psychologist. Thus, a total of 220 participants were included in the analyses. There were no significant differences for either age or gender between the 230 participants who completed study and the 95 participants who did not complete the study.

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┌─────────────────────────────────────────────────────────────┐
│         Participants who received the prescreening survey       │
│                         N = 2,000                               │
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┌─────────────────────────────────────────────────────────────┐
│                    Participants who responded                   │
│                          N = 887                                │
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                              │
                              ▼
┌─────────────────────────────────────────────────────────────┐
│        Participants who were eligible and willing to participate │
│                          N = 662                                │
└─────────────────────────────────────────────────────────────┘
                              │
                              ▼
┌─────────────────────────────────────────────────────────────┐
│             Participants selected to participate in study       │
│                          N = 325                                │
└─────────────────────────────────────────────────────────────┘
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Participants who partially completed the survey
N = 18

Participants who completed the survey
N = 230

Participants who did not take the survey
N = 77

Participants excluded based on outlier analyses and Psychology background
N = 10

Total number of participants
N = 220

Figure 1. Description of the Data Collection Process Using StudyResponse.com

Participants were 220 full-time employed individuals (111 male, 108 female) ranging from a wide variety of occupations. See Appendix F for a complete list of reported job titles. Participants averaged almost 20 years of work experience ($M = 19.71$, $SD = 10.79$), and 0 to 36 years of hiring experience ($M = 5.91$, $SD = 7.65$). Almost 20% of participants had hired over 26 employees in their career (19.1%), approximately 12%

had hired between 11 and 25 employees (11.8%), and a little more than 34% had hired

between 1 and 10 employees (34.1%). A total of 29.5% had never hired anyone.

Participants ranged in age from 22 to 68 years ($M = 41.04$, $SD = 10.22$). The

majority of participants were Caucasian (80%). However, a significant proportion

(19.5%) were from other races (African American, Hispanic, American Indian, Asian,

Native Hawaiian, Pakistani, and Multi-racial). Approximately half of the participants had

a college degree (49.1%). Eleven percent had a high school diploma or GED, about one-

quarter (24.5%) had some college, 12.3% had a masters degree, and 2.3% had a doctoral

degree.

Overall, the StudyResponse sample in Study 2 (N=220) was similar to the hiring

manager sample in Study 1 (N=77) in gender, age, and race. The hiring manager sample

was more educated, had more years of hiring experience, and had hired more applicants.

However, almost half (45%) of the StudyResponse sample had still hired more than five

employees.   See Appendix G for the descriptive statistics for the both the hiring manager

and StudyResponse sample.

Measures

Background

Participants completed measures assessing demographic information, managerial

experience, and characteristics of their work organization. See Appendix H for copies of

these measures. Participants used the response ranges described below; however,

participants were also given the option to indicate an additional response: "I prefer not to

answer".

<u>Telework Survey</u>

Attitudes towards telework were assessed with measures developed at the University of Miami (Czaja & Sharit, unpublished manuscript). Items measured experience with telework, feelings towards telework, and opportunity for telework in the participant's organization. Participants were asked respond to statements ranging from 1 ("Strongly Disagree) to 5 ("Strongly Agree"). See Appendix I for the full survey.

<u>Attitudes Towards Older Workers</u>

Attitudes towards older workers were assessed with a number of measures. These measures include the Fraboni Scale of Ageism, Beliefs About Older Workers scale, Palmore's First Facts on Aging Quiz, and a Discriminatory Attitudes scale.

The Fraboni Scale of Ageism

The Fraboni Scale of Ageism (FSA, Fraboni et al., 1990) is designed to assess both cognitive and affective components of attitudes towards older adults. The measure consists of 29 items that range from 1 (strongly disagree) to 4 (strongly agree). Recently, Rupp, Vodanovich, and Crede (2002) re-examined the initial factor structure of the FSA and redefined its three factors as stereotypes (cognitive component), separation (the desire to separate oneself from older people) and affective attitudes (emotionally related attitudes towards older people). Reliabilities of the three subscales were previously found to be .79, .76, and .70 respectively. See Appendix J for the full survey.

Beliefs About Older Workers

The Beliefs About Older Workers scale (Hassell & Perrewe, 1995) contains 27

items designed to measure beliefs and attitudes specifically directed towards older

workers. Responses range from 1 (Strongly Agree) to 5 (Strongly Disagree). Low scores

indicate an overall negative belief about older workers, while high scores indicate

positive beliefs. Scale reliability was previously found to be .83.

To examine whether economic reasons act as a factor in negative evaluations of

older workers (e.g., they cost too much), several items were added to this measure (e.g., it

is more expensive to provide health care for older employees; older employees are harder

to fire; it is much more expensive to have older, rather than younger employees; and

older workers will not stay at the organization for as long as younger employees). One

item assessed the notion of stability and reliability ("Older workers are more

dependable"). However, the word "dependable" was replaced with reliability to examine

the hypothesis that older workers were perceived as more qualified in telework contexts.

See Appendix K for the full survey.

Palmore's First Facts on Aging Quiz

The Palmore's First Facts on Aging Quiz (PAQ, Palmore, 1988) was originally

composed to assess knowledge, rather than attitudes towards aging. This measure is used

to identify common misconceptions, misunderstandings, and factual errors involved in

participants' beliefs about older adults. More specifically, the measure assesses

knowledge about older adults, as well as negative and positive bias towards older adults.

A portion of the revised version of the PAQ (Harris, Changas, & Palmore, 1996) was

given to assess whether knowledge about older adults was a significant predictor of attitudes towards older workers. This measure consisted of 25 multiple-choice items with a reliability of .15. The authors suggested the addition of a "don't know" option increased the reliability of the measure. Thus, the following changes were made to the measure: a "don't know" option was added and only items relating to work were selected, resulting in a 7-item measure. See Appendix L for the full survey.

Discriminatory Attitudes

The Discriminatory Attitudes measure (Chiu et al., 2001) measures participants' attitudes on a range of discriminatory practices. The items represent commonly cited examples of discriminatory treatment (e.g., favoring younger over older workers for training and promotion opportunities). These 5 items loaded on a single factor, but only accounted for 37 percent of the total variance, with reliability of .40. Due to these findings, the items have been treated separately in previous research, each representing a different aspect of employment practice. Four out of five of these items are presently included in the Beliefs about Older Workers Scale (items 6, 20, 24, & 26). A fifth item was included to fully represent discriminatory attitudes (item 32).

Right-Wing Authoritarianism

The Right-Wing Authoritarianism (RWA) scale is designed to measure a combination of authoritarian submission, authoritarian aggression, and conventionalism

(Altemeyer & Hunsberger, 1992). A shortened version of this scale was used to assess authoritarianism. This shortened version has been used in a previous study (Zakrisson, 2005). The scale consists of 15 items with a reliability of .72 to .80. Responses range from 1 (Strongly Agree) to 5 (Strongly Disagree). In addition, several items were included to address comfort with diversity. These items were taken from Comfort with Differences subscale of the Miville-Guzman Universality-Diversity Scale (Fuertes, Miville, Mohr, Sedlacek, & Gretchen, 2000). This yielded a scale consisting of a total of 20 items. See Appendix M for the full survey.

Procedure

The selection of occupations to be included in Study 2 was based on a multi-step process, which is described below.

Step 1: Examination of Study 1 Results

A total of 16 job descriptions were rated by hiring managers in Study 1. There were four job descriptions in each of the following categories: Gf /office, Gf/telework, Gc/office, Gc/telework. Managers completed separate rating scales assessing how dependent each job was on fluid ability and crystallized ability, as well as how suited each job was to an office work and telework context. Results showed that for the most part, hiring managers did not differentiate one ability as being more important than another for a specific job. For example, the job of a Fire Investigator was selected based on the importance of fluid ability to performance on this job. However, hiring managers rated this job as "very" (median rating = 4) dependent on both fluid and crystallized

ability. Jobs selected as being suitable to telework contexts and office work contexts were generally rated as such by managers.

Step 2: Selection and Revision of Job Descriptions from Study 1

Based on the results from Study 1, the primary importance of one ability over another did not appear explicit enough to be captured in hiring managers' ratings. Therefore, 4 job descriptions out of the 16 for Study 1 were selected and redesigned.

Selection Criteria

Only those job descriptions that had no significant differences between ratings of fluid and crystallized ability were considered. In addition, telework job descriptions had to have been rated as at least moderately suited to telework (a rating of 3 on a scale of 1-5). Finally, office work job descriptions had to have been rated as at least a 4 on the suitability to office work scale, and, that rating had to have been higher for the office work context as opposed to the telework context.   Based on these criteria, the following jobs were selected to represent each of the following conditions: Forensic Science Technician (Gf/office), Safety and Health Engineer (Gf/telework), School Psychologist (Gc/office), and Sociologist (Gc/telework).

Redesign of Job Descriptions

Job descriptions were kept the same, except paragraphs were added to provide more explicit information about the type of ability needed for the job, and the type of

context suited for the job. Table 8 describes these additions. See Appendix N for the full job descriptions and applicant resumes.

Step 3: Study Design

The design for Study 2 was a mixed design, with work context and task demands as within-subjects variables, and applicant age as a between-subjects variable. Applicant age was treated as a between-subjects variable for a number of reasons. However, most noteworthy was the mixed findings regarding the effect of design on age bias. Thus, the age manipulation was treated as a between-subjects design to serve as a more subtle manipulation of applicant age. Therefore, should qualification ratings differ between older and younger applicants, this effect would be considered robust.

Table 8

Information Inserted into Job Descriptions to Increase Saliency of Work Context and Task Demands

Condition	Information included in job description
Fluid ability	Major requirements: *You are expected to possess the ability to engage in "on-the-spot" reasoning, and must be able to perceive, remember, and think about a wide variety of basic ideas in your position as a _____. This includes combining information to come to conclusions about relationships, as well as the ability to apply rules to problems or situations to arrive at resolutions.*
Crystallized ability	Major requirements: *You are expected to possess the relevant knowledge, experiences, and skills of a _____. You will be responsible for the application of such knowledge and skill, and must possess an understanding and knowledge of communication (e.g., verbal and written skills).*
Telework	Work environment: *This position includes the ability to telework. Telework may be performed for as little as one day per week at home though rarely as much as every day. Communication and personal contact in telework may be accomplished through e-mail, telephone, and videoconferencing.*
Office work	Work environment: *This position takes place in the office, where you will conduct all of your professional and administrative duties. Employees are expected to commute to the office every day of the workweek. Such work will involve face-to-face communication and personal contact with other employees.*

Instructions and Design

Participants were asked to assume the role of a hiring manager, whose task was to assess the suitability of job applicants for several jobs at a professional employment agency. Participants read the first job description followed by the applicant's resume. Job descriptions varied along work context and task demands. There were four job descriptions in total: School Psychologist (Gc/office), Forensic Science Technician

(Gf/office), Safety and Health Engineer (Gf/telework), and Sociologist (Gc/telework). All participants received these four job descriptions. The only factor that varied between subjects was applicant age. Participants rated either four younger applicants (ages 25-29 years) or four older applicants (ages 55-59). Participants completed three rating scales assessing the applicant's suitability for the target job. Responses ranged from 1 ("Not at All) to 5 ("Extremely"). The scales were: "How qualified is this applicant for the job?", "How likely is it that you would hire this applicant for this job?", and "As compared to other applicants in general, how successful do you think this applicant would be in this job?" Participants also rated additional questions that served as checks on the experimental manipulation of task demands (e.g., "How important is general reasoning ability in this job?", "How important is knowledge and experience in this job?", and "If you had to choose the most relevant tool to identify the best person for this job, which of the below would you pick?": an intelligence test, a personality test, a job knowledge test, I prefer not to answer, or other.

Participants then completed demographic and managerial experience questionnaires, telework questionnaires (experience with telework, attitudes towards telework, and importance of traits and abilities in telework decisions), knowledge about older adults, beliefs about older workers, attitudes towards discriminatory practices, and authoritarianism.

Results

Awareness of Task Demands

To determine if participants were explicitly aware of the primary importance of either fluid ability or crystallized ability in each of the job descriptions, the following steps were taken: Participants rated "How important is general reasoning ability to this job?, "How important is knowledge and experience in this job?", and "If you had to choose the most relevant tool to identify the best person for this job, which of the following would you pick? (Intelligence test, personality test, job knowledge test, other), for each of the four job descriptions. Table 9 displays the descriptive statistics for these questions for each of the job descriptions.

Paired-samples t-tests were conducted to assess whether participants rated either knowledge or reasoning as being primarily important in any of the four job descriptions. Participants indicated that for the job of a School Psychologist, knowledge and experience was significantly more important than general reasoning ability t (218) = -4.07, $p < .001$. However, there were no significant differences between the importance ratings of knowledge and experience and importance ratings of general reasoning ability for any of the three other job descriptions. Additionally, for every job description, the most popular choice of selection tool to identify the best person for the job was that of a job knowledge test. Proportion of participants who selected this option ranged from 48.6% to 74.5%.

Table 9

Descriptive Statistics for Participants' Awareness of Task Demands

Job Description: *School Psychologist (Gc/Office)*

Question	Mean	Standard deviation	Range	Percent chosen	N
How important is general reasoning ability to this job?	4.21	.74	2-5		219
How important is knowledge and experience in this job?	4.44	.68	2-5		220
If you had to choose the most relevant tool to identify the best person for this job, which of the following would you pick?					220
Intelligence test				5.5%	
Personality test				34.5%	
Job knowledge test				55.5%	
Other				4.5%	
I prefer not to answer				0%	

Job Description: *Forensic Science Technician (Gf/Office)*

Question	Mean	Standard deviation	Range	Percent chosen	N
How important is general reasoning ability to this job?	4.44	.77	2-5		219
How important is knowledge and experience in this job?	4.48	.67	2-5		219
If you had to choose the most relevant tool to identify the best person for this job, which of the following would you pick?					220
Intelligence test				20%	
Personality test				6.4%	
Job knowledge test				69.5%	
Other				2.3%	
I prefer not to answer				1.8%	

Table 9, cont'd.

Descriptive Statistics for Participants' Awareness of Task Demands

Job Description: *Safety and Health Engineer (Gf/Telework)*

Question	Mean	Standard deviation	Range	Percent chosen	N
How important is general reasoning ability to this job?	4.17	.79	2-5		218
How important is knowledge and experience in this job?	4.23	.75	2-5		217
If you had to choose the most relevant tool to identify the best person for this job, which of the following would you pick?					220
Intelligence test				10.9%	
Personality test				10.0%	
Job knowledge test				74.5%	
Other				1.4%	
I prefer not to answer				3.2%	

Job Description: *Sociologist (Gc/Telework)*

Question	Mean	Standard deviation	Range	Percent chosen	N
How important is general reasoning ability to this job?	4.16	.78	1-5		219
How important is knowledge and experience in this job?	4.12	.81	1-5		219
If you had to choose the most relevant tool to identify the best person for this job, which of the following would you pick?					220
Intelligence test				20.9%	
Personality test				26.8%	
Job knowledge test				48.6%	
Other				2.7	
I prefer not to answer				.9%	

Job Status Differences

To assess whether job descriptions were attributed different levels of job status, perceived job status (prestige) as well as perceptions of how suitable each job was for younger and older workers were examined. The only variable that had a significant relationship with qualification ratings was that of job status, $r = .40$, $p < .001$. Table 10 displays the descriptive statistics for job status for each of the four job descriptions. Paired-samples t-tests were conducted to assess whether differences existed between perceived job status for each of the four jobs. Results showed that participants rated the status of a Safety and Health Engineer significantly lower as compared to the job of Forensic Science Technician and the job of Sociologist, $t(212) = 3.36$, $p < .01$ and $t(212) = -2.67$, $p < .01$, respectively. However, although these differences were statistically significant, all status ratings were centered at the mid-point ($3 =$ moderate status or prestige), had similar variance, and did not vary more than one-quarter of a point from each other.

These results are similar in pattern to those of hiring managers in Study 1. Overall, each of the four occupations were given higher status ratings in Study 1 than in Study 2, but once again, the job of a Safety and Health engineer was rated lowest in status and was significantly lower than status ratings for the other three job descriptions.

Table 10

Descriptive Statistics for Job Status (Prestige)

Job Description	Mean	Standard deviation	Range	N
School Psychologist (Gc/Office)	2.97	1.06	1-5	218
Forensic Science Technician (Gf/Office)	3.08	1.14	1-5	216
Safety and Health Engineer (Gf/Telework)	2.84	1.16	1-5	213
Sociologist (Gc/Telework)	3.01	1.11	1-5	216

Overall, these results suggest that although participants perceived all job descriptions as being very dependent on both fluid and crystallized ability, they did not rate either ability as being of primary importance in any of the job descriptions. One interpretation of these results may be that the job descriptions did not depend more on one ability as compared to another. However, another interpretation is that the job descriptions were dependent primarily on one ability, and while participants did not appear to be explicitly aware of this, such awareness may be evident in their qualification ratings of younger and older applicants. More specifically, because job descriptions were identical across participants except for applicant age, should older applicants be given higher qualification ratings for jobs dependent on crystallized ability and/or younger applicants be given higher qualification ratings for jobs dependent on fluid ability, then support for this latter interpretation would be obtained.

The Effect of Task Demands and Work Context on Applicant Qualification Ratings

A 2 X 2 X 2 mixed design repeated measures ANOVA was conducted to address the effect of task demands (Gc, Gf) and work context (office work, telework) on applicant qualification ratings (young, old). Table 11 depicts the results for this analysis.

<u>Main Effects</u>

Applicant Age

Hypothesis 1a stated that participants would provide significantly higher ratings to younger applicants as compared to older applicants. Results showed no main effect of applicant age on qualification ratings $F(1, 208) = 1.24$, $p = .27$.

Hypothesis 1b stated that according to the in-group hypothesis, age of rater may moderate the relationship between applicant age and qualification ratings. However, there was no significant relationship between rater age and qualification ratings ($r = -.103$, $p = .07$). Nor did rater age moderate the relationship between applicant age and qualification ratings ($r = .14$, R^2 Change $= .00$, $p = .87$).

Work context

There was no hypothesis for work context. That is, applicant qualification ratings were not expected to differ across contexts. However, a main effect of work context was found. More specifically, applicants in the telework context were given higher qualification ratings as compared to applicants in office work contexts, $F(1, 210) = 25.80$, $p < .001$.

There were different jobs in the telework context than in the office work context. In the future, it would be important to compare the same applicants with the same jobs, in different work contexts.

The finding that applicants in the telework context were consistently given higher qualification ratings was somewhat puzzling. One potential factor that may have influenced this finding may be attitudes towards telework. It may be that more positive attitudes towards telework lead participants to assign higher qualification ratings to those applicants applying for telework jobs. Therefore, the same 2X2X2 repeated measures analysis was conducted with task and context as within-subjects factors, and applicant age as the between-subjects factor. However, the attitudes towards telework score was entered in the model as a covariate. Indeed, results showed that once attitudes towards telework had been included in the model, the main effect of work context disappeared. All reported statistics, even those for the main effect of applicant age, are based on this latter analysis, with attitudes towards telework as a covariate. Adding in attitudes towards telework as a covariate slightly changed the F-values, but not the direction or significance of the results.

Table 11

Analysis of Variance for Applicant Qualification Ratings

Source	df	F	η^2	p
Between subjects				
Applicant age	1	1.24	.01	.27
Error	208			
Within subjects				
Task	1	.82	.00	.37
Task X Attitudes towards Telework	1	.78	.00	.38
Task X Applicant age	1	4.61	.02	.03
Error (task)	210			
Context	1	.23	.00	.63
Context X Attitudes towards Telework	1	.03	.00	.87
Context X Applicant age	1	4.17	.02	.04
Error (context)	210			
Task X Context	1	1.08	.01	.30
Task X Context X Attitudes towards Telework	1	.14	.00	.71
Task X Context X Applicant age	1	1.12	.01	.29
Error (task x context)	210			

Interaction Effects

Applicant Age and Work Context

Hypothesis 2 stated that an interaction between applicant age and work context was expected. More specifically, it was expected that for telework jobs, older applicants would be rated significantly higher as compared to younger applicants due to perceptions concerning their stability and the independent nature of telework. In contrast, for office work jobs, younger applicants were expected to be rated significantly higher as compared to older applicants in line with traditional research on attitudes towards older workers.

A significant interaction of applicant age by work context was obtained. Follow-up contrasts revealed that, in line with the above hypotheses, older applicants were rated significantly higher for telework jobs ($M = 3.88$) as compared to younger applicants ($M = 3.67$) (p<.05). However, for office work contexts, the difference was not significant ($p = .99$); younger applicants were rated similarly ($M = 3.50$) as compared to older applicants ($M = 3.48$). Figure 2 depicts these results.

Interaction of Applicant Age and Work Context

Younger applicants   Older applicants
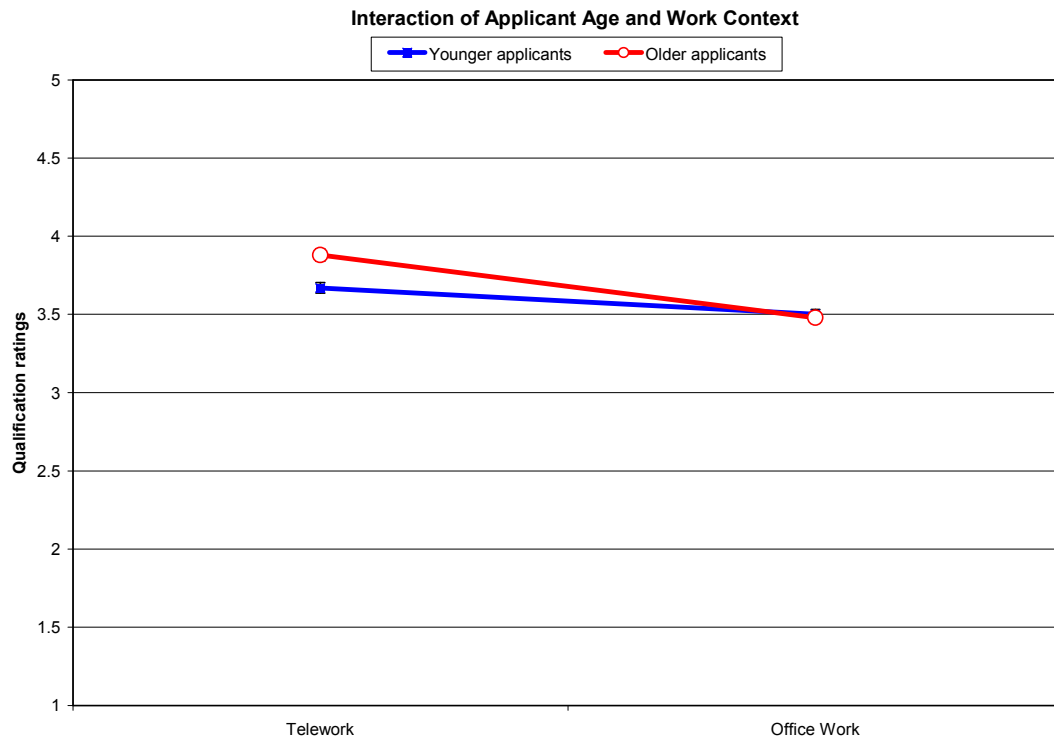
Figure 2. Interaction for Applicant Age and Work Context on Qualification Ratings. Ratings range from: 1 (not at all qualified) to 5 (extremely qualified). Note that standard error bars are included in the above figure, but are too small to appear visible.

Overall, results indicated that older applicants were viewed as more qualified than younger applicants, when the context was that of telework. However, both younger and older applicants were perceived similarly when the context was that of office work.

The notion that older applicants would be rated as more qualified in telework contexts was hypothesized to be due to perceptions of older workers as more reliable, as well as the independent nature of telework, where reliability may be important. In the Attitudes towards Telework measure, participants rated the perceived importance of a number of abilities and traits in their decision to allow a worker to telework. Results showed that participants who felt that reliability was an important factor in allowing a worker to telework, also perceived that older workers were more reliable than younger workers ($r = .199$, $p < .01$). This latter item was from the Beliefs About Older Workers scale.

Applicant Age and Task Demands

Hypothesis 3 stated an expected interaction between applicant age and task demands. More specifically, for jobs dependent on Gc, older applicants were expected to be rated significantly higher as compared to younger applicants. In contrast, for jobs dependant on Gf, younger applicants were expected to be rated significantly higher as compared to older applicants. Figure 3 depicts these results.
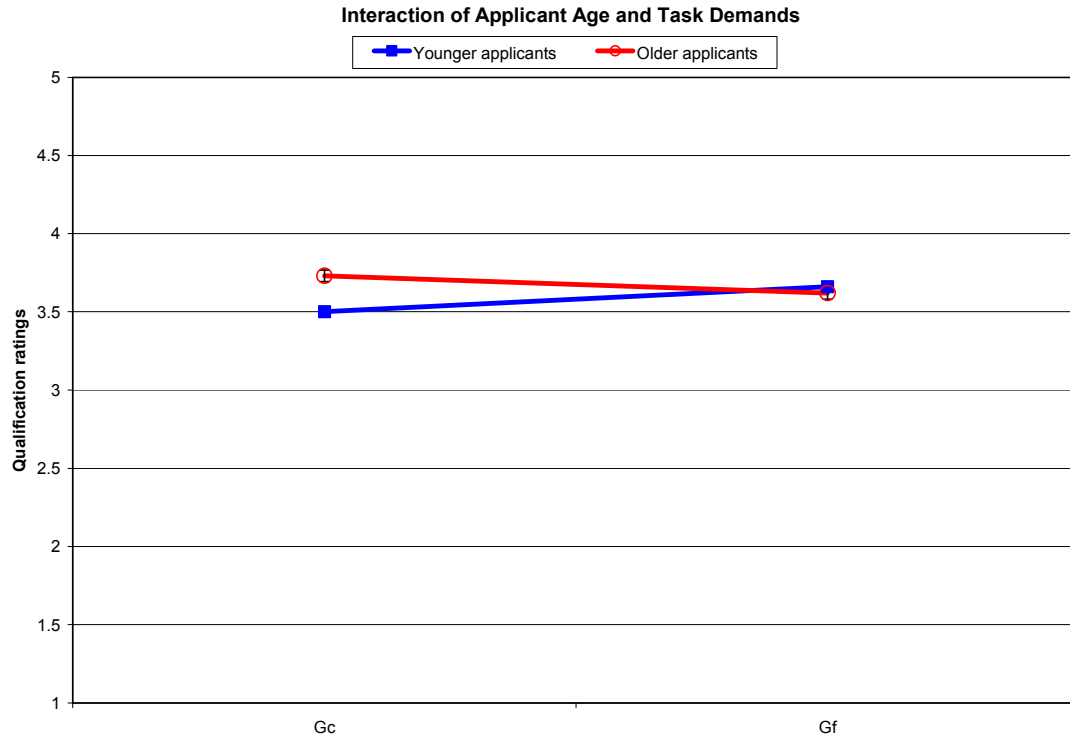
Figure 3. Interaction for Applicant Age and Task Demands on Qualification Ratings. Ratings range from: 1 (not at all qualified) to 5 (extremely qualified). Note that standard error bars are included in the above figure, but are too small to appear visible.

Overall, results indicated that older applicants were perceived as more qualified than younger applicants, when the job was dependent on Gc. However, when the job was dependent on Gf, there were no significant age differences.

Applicant Age, Work Context, and Task Demands

A three-way interaction was expected. More specifically, for office work jobs, older applicants were expected to be rated significantly lower than younger applicants for jobs dependent on Gf, and slightly higher than younger applicants for jobs dependent on Gc. For telework jobs, older applicants were expected to be rated slightly lower than younger applicants for jobs dependent on Gf, and significantly higher than younger

applicants when for jobs dependent on Gc. The overall interaction was not significant.

However, because these hypotheses were formed a priori, separate analyses were

conducted for office work and telework contexts.

Results showed a significant applicant age by task demands interaction for office

work jobs (p<.05). More specifically, older applicants were rated as more qualified for

jobs dependent on Gc, and younger applicants were rated as more qualified for jobs

dependent on Gf. However, further follow-up contrasts were not significant for applicant

age and crystallized ability ($p = .20$), or for applicant age and fluid ability (p = .21).

Figure 4 depicts these results. It should be noted that power was particularly low for

these last contrasts (.25 and .24, respectively), providing only approximately 25% chance

of detecting a significant difference should one exist.

Interaction of Applicant age and Task Demands for Office Work Jobs
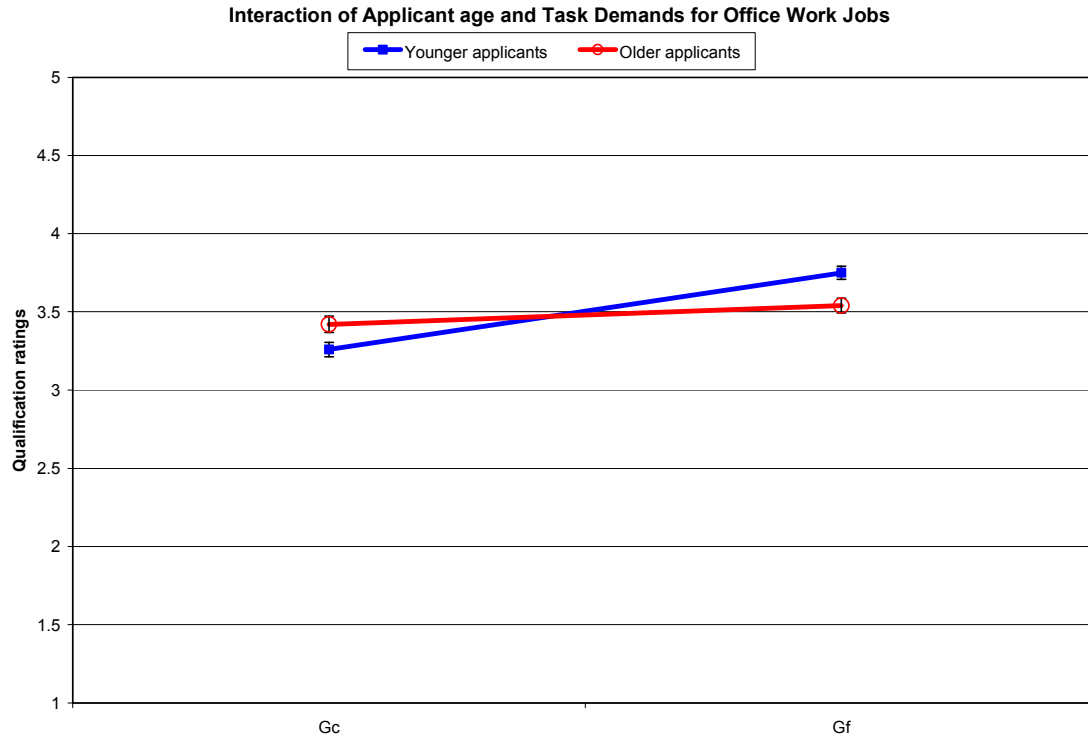
Figure 4. Interaction for Applicant Age and Task Demands on Qualification Ratings for Office Work jobs. Ratings range from: 1 (not at all qualified) to 5 (extremely qualified). Note that standard error bars are included in the above figure, but are too small to appear visible.

No significant applicant age by task demands interaction was obtained for the telework context. However, follow-up contrasts revealed that older applicants were rated as significantly more qualified for jobs dependent on Gc (M = 4.03) as compared to younger applicants (M = 3.75), *p*<.05. Yet for jobs dependent on Gf, there was no significant effect of applicant age (*p* = .16). Figure 5 depicts these results.
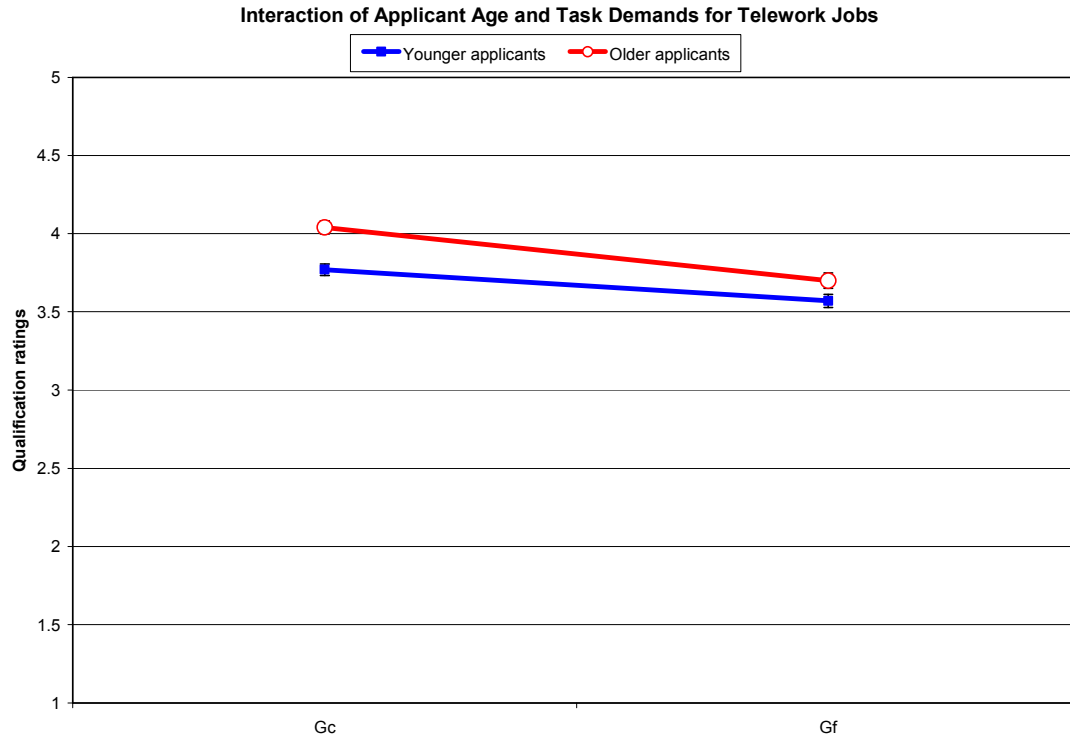
Figure 5. Interaction for Applicant Age and Task Demands on Qualification Ratings for Telework jobs. Ratings range from: 1 (not at all qualified) to 5 (extremely qualified). Note that standard error bars are included in the above figure, but are too small to appear visible.

Summary of findings

Neither hypothesis 1a nor 1b was supported by the data. That is, younger applicants were not rated significantly more qualified than older applicants. Furthermore, participant age did not moderate the relationship between applicant age and qualification ratings.

Consistent with hypothesis 2, a significant applicant age by work context interaction was obtained in the hypothesized direction. However, follow-up contrasts revealed that while older applicants were rated significantly more qualified in telework

contexts, younger applicants were not rated significantly higher than older applicants in office work contexts.

Hypothesis 3 was supported with a significant applicant age by task demand interaction, in the direction specified. However, follow-up contrasts revealed that while older applicants were rated significantly more qualified in for jobs dependent on Gc, younger applicants were not rated significantly more qualified than older applicants in for jobs dependent on Gf.

The results did not support hypothesis 4; there was no significant applicant age by task demands by work context interaction.

However, results did support hypothesis 4a. More specifically, for jobs suited to a telework context, older applicants were rated as significantly more qualified than younger applicants for jobs dependent on Gc. Additionally, as predicted, older applicants were not rated significantly different from younger applicants for jobs dependent in Gf.

Results for Hypothesis 4b were mixed. Specifically, a significant age by task demands interaction was obtained for jobs suited to an office work context. However, further contrasts on the main effects were not significant. For jobs suited to an office work context, older applicants were not rated significantly less qualified for jobs dependent on Gf. Nor were older applicants rated significantly more qualified for jobs dependent on Gc. It should be noted that power was extremely low for these last contrasts (power = .05). This indicates that is only a 5% chance of detecting a significant difference where one exists.

These results suggest that most definitely, both the nature of the work context, as well as task demands influence age-related differences in qualification ratings. However,

other variables may too, influence qualification ratings. These include attitudes towards older workers, knowledge about older workers, and authoritarianism. This next section addresses measures assessing these variables.

Authoritarianism and Scales Assessing Attitudes towards Older Workers

Overall, attitudes towards older workers were fairly neutral on the Beliefs about Older Workers Scale, the Fraboni Scale of Ageism, and the Discriminatory Attitudes scale. However, correct knowledge about older adults was rather low. Table 12 presents the means and standard deviations for these scales. Consistent with previous research, males exhibited significantly more negative attitudes towards older workers on all three attitudes towards older workers scales (F (1, 213) = 12.65, $p<.001$, F (1, 213) = 11.90, $p<.01$, and F (1, 213) = 12.59, $p<.001$, respectively). Also consistent with previous research, younger participants had significantly more age bias towards older workers on all three scales (r = -.312, $p<.001$, r = -.177, $p<.05$, and r = -.305, $p<.001$, respectively).

Table 12

Descriptive Statistics for Attitudes towards Older Workers Scales

Scale	Mean	Standard Deviation
Palmore's Facts on Aging[a] (correct knowledge about older adults)	2.34	1.23
Beliefs about Older Workers scale[b]	2.66	0.40
Fraboni Scale of Ageism[c]	1.94	0.41
Stereotypes subscale	2.13	0.52
Separation subscale	1.68	0.50
Affective Attitudes subscale	1.98	0.37
Discriminatory Attitudes scale[b]	2.50	0.65

Note: Higher means indicate more negative attitudes towards older workers
[a] Correct answers range from 0 to 7
[b] Scores range from 1 (strongly disagree) to 5 (strongly agree), with a neutral point of 3 (neither agree nor disagree)
[c] Scores range from 1 (strongly disagree) to 4 (strongly agree)

Predictors of Applicant Qualification Ratings

Authoritarianism

Hypothesis 4 stated that participants scoring high in authoritarianism will give significantly lower qualification ratings to older, as compared to younger applicants. Three simultaneous regression analyses were performed for the overall authoritarianism scale, the authoritarianism subscale, and the comfort with diversity subscale. Results failed to support this hypothesis. Neither the overall authoritarianism scale, nor the individual subscales (authoritarianism and comfort with diversity) were related to

applicant qualification ratings ($\beta = .05$, $p = .43$, $\beta = .06$, $p = .37$, and $\beta = -.01$, $p = .85$, respectively). The complete authoritarianism scale, as well as the two subscales all showed good internal consistency ($\alpha = .87$, $\alpha = .89$, and $\alpha = .82$ respectively).

These results suggest that authoritarianism has no relationship to qualification ratings of older applicants. However, is it that authoritarianism has no relationship to negative attitudes towards older workers? Or is it that while participants high in authoritarianism are more likely to experience negative attitudes towards older workers, these negative attitudes are somehow prevented from entering behavior, in the form of qualification ratings? Indeed, results suggest that it is the latter of these two explanations. More specifically, results showed that there was a significant correlation between authoritarianism and the Beliefs about Older Workers scale, as well as the Fraboni Scale of Ageism ($r = .258$, $p < .001$, and $r = .340$, $p < .001$ respectively). However, despite the fact that participants high in authoritarianism had more negative attitudes towards older workers, they were not any more likely to evaluate older applicants less favorably than younger applicants. It seems that participants were managing their negative attitudes towards older workers by preventing such biases from entering into qualification ratings.

The Effect of Demographic and Managerial Variables

Correlational analyses were conducted to identify which of the demographic and managerial experience variables were related to applicant qualification ratings. No specific hypotheses regarding these variables had been stated. Thus the examination of these factors was for exploratory purposes. Number of years of work experience, number of years of hiring experience, and number of applicants hired had significant negative

correlations with applicant qualification ratings. Table 13 presents the correlations

among these variables.

		1	2	3	4	5	6	7	8
1.	Applicant qualification ratings								
2.	Rater age	-.10							
3.	Education	.03	-.11						
4.	Work experience	-.14*	.89***	-.18**					
5.	Hiring experience	-.24**	.51***	.08	.56***				
6.	Number of applicants hired	-.14*	.30***	.19**	.34***	.75***			
7.	Experience interviewing job applicants	-.09	.24**	.19**	.23**	.61***	.83***		
8.	Experience reviewing job applications	-.09	.19**	.18**	.20**	.59***	.80***	.93***	
9.	Experience working with older workers	.07	.16*	-.00	.20**	.18**	.20**	.22**	.23**

Note. * = p < .05, ** = p < .01, *** = p < .001

These results suggest that the more significant predictors of applicant

qualification ratings have to do with the amount of experience managers have. More

specifically, participants with more hiring experience, more work experience, and a

greater number of applicants hired were provided significantly lower qualification

ratings. This fact may not be surprising, given that these individuals are more

experienced in determining how qualified applicants are.

The Effect of Attitudes towards Older Workers, Knowledge about Older Adults, and

Attitudes towards Telework

Further correlational analyses were conducted to identify which of the attitudinal measures were related to applicant qualification ratings. Scores on the Beliefs about Older Workers scale, the Fraboni Scale of Ageism, and the Discriminatory Attitudes scale were hypothesized to be negatively related to applicant qualification ratings. The Attitudes towards Telework scale, and the subscale score of knowledge about older adults from the Palmore's Facts on Aging quiz were expected to be positively related to older applicant qualification ratings.

A correlational analysis was performed for applicant qualification ratings, attitudes towards telework, Palmore's facts on aging quiz (correct knowledge of older adults, positive bias towards older adults, and negative bias towards older adults), the Fraboni Scale of Ageism overall score and subscale scores (stereotypes, separation, and affective attitudes), the Beliefs about older Workers scale, and the Discriminatory Attitudes scale. Of these variables, the attitudes towards telework scale and the Palmore's correct knowledge of older adults score had a significant, positive correlation with applicant qualification. In addition, there was a significant, negative correlation between the affective attitudes subscale of the Fraboni scale of ageism and applicant qualification ratings. Higher scores on the affective attitudes subscale indicate more negative affective attitudes towards older adults. Table 14 presents the correlations among these variables.

Table 14

Correlations Among Attitude Measures and Applicant Qualification Ratings

		1	2	3	4	5
1.	Applicant qualification ratings					
2.	Attitudes towards Telework	.30***				
3.	Palmore's correct knowledge of older adults	.18*	.08			
4.	Palmore's negative bias towards older adults	-.08	-.10	-.18**		
5.	Palmore's positive bias towards older adults	-.02	.16*	-.22**	-.24**	
6.	Beliefs about Older Workers Scale	-.08	-.32***	-.04	.29***	-.39***
7.	Fraboni Scale of Ageism	-.06	-.29***	.01	.20**	-.22**
8.	Fraboni stereotype subscale	-.03	-.24***	.01	.26***	-.22**
9.	Fraboni separation subscale	-.06	-.27***	-.04	.07	-.18**
10.	Fraboni affective subscale	-.16*	-.26***	.05	.09	-.21**
11.	Discriminatory attitudes scale	.01	-.22*	-.05	.27***	-.39***

Note. * = p < .05, ** = p < .01, *** =p < .001

Table 14, cont'd.

Correlations Among Attitude Measures and Applicant Qualification Ratings

		6	7	8	9	10	11
1.	Applicant qualification ratings						
2.	Attitudes towards Telework						
3.	Palmore's correct knowledge of older adults						
4.	Palmore's negative bias towards older adults						
5.	Palmore's positive bias towards older adults						
6.	Beliefs about Older Workers Scale						
7.	Fraboni Scale of Ageism	.68***					
8.	Fraboni stereotype subscale	.64***	.88***				
9.	Fraboni separation subscale	.57***	.88***	.60***			
10.	Fraboni affective subscale	.42***	.68***	.39***	.59***		
11.	Discriminatory attitudes scale	.81***	.60***	.51***	.55***	.42***	

Note. * = p < .05, ** = p < .01, *** =p < .001

To learn which variables accounted for the most to least variance in qualification ratings, all variables with a significant relationship to applicant qualification ratings were entered into a stepwise multiple regression.   Applicant qualification rating served as the dependent variable and the following were entered as independent variables: attitudes towards telework, correct knowledge of older adults, Fraboni affective attitude subscale, years of work experience, years of hiring experience, and number of applicants hired. Only three variables were retained in the model, they are ordered from most to least variance accounted for: Attitudes towards telework, years of hiring experience, and Palmore's correct knowledge about older adults subscale. Table 15 presents the regression coefficients for these variables.

Table 15

Summary of Stepwise Regression Analysis for Variables Predicting Overall Applicant Qualification Ratings

Variable	B	$SE\ B$	β	p	Δr^2	Model r^2
Attitudes towards Telework	.378	.100	.253	.000	.085	.085
Years of hiring experience	-.018	.006	-.212	.002	.045	.129
Palmore's correct knowledge about older adults	.094	.037	.169	.012	.028	.158

To learn whether predictors differed based on applicant age, two separate stepwise regression analyses were conducted for younger and older applicant ratings, with the same independent variables entered. The only significant predictor for younger applicant qualification ratings was the number of years of work experience held by the

rater.   More specifically, participants with more years of work experience give younger

applicants lower qualification ratings. In contrast, three significant predictors emerged

from the regression analysis on older applicant qualification ratings. In order from most

to least variance account for: Attitudes towards telework, years of hiring experience, and

Palmore's correct knowledge about older adults subscale. Table 16 presents the

regression coefficients for these variables.

Table 16

Summary of Stepwise Regression Analysis for Variables Predicting Applicant

Qualification Ratings

Younger Applicants

Variable	B	*SE B*	β	p	Δr^2	*Model r^2*
Years of work experience	-.013	.006	-.212	.028	.045	.045

Older Applicants

Variable	B	*SE B*	β	p	Δr^2	*Model r^2*
Attitudes towards Telework	.552	.129	.383	.000	.187	.187
Years of hiring experience	-.026	.007	-.313	.001	.102	.289
Palmore's correct knowledge about older adults	.095	.045	.189	.037	.035	.324

A significant negative correlation was hypothesized for the Beliefs about Older

Workers scale, the Fraboni Scale of Ageism, the Discriminatory Attitudes scale and

qualification ratings for older applicants. In addition, a positive correlation was expected

for the Palmore's Facts on Aging subscale of knowledge about older adults and qualification ratings. Although a significant negative correlation was found for the affective attitudes subscale of the Fraboni Scale of Ageism and qualification ratings, once other variables were controlled for, this variable no longer predicted applicant qualification ratings. However, a positive correlation was found for knowledge about older adults and older applicant qualification ratings. If the only age-related predictor of older applicant qualification ratings is knowledge, rather than attitudes towards older adults, does this mean that negative attitudes towards older workers do not exist?

Results presented earlier (see table 12), showed that negative attitudes towards older workers, were on average, fairly low. However, it remains unclear as to whether all participants were neutral towards older employees, or if there was a subset of participants that did hold negative beliefs. In other words, the participants used the full response range (strongly disagree to strongly agree) in their ratings for all but one item in the Beliefs about Older Workers scale, and for all items in the Fraboni Scale of Ageism. Thus, some participants indicated that they agreed or strongly disagreed with negative stereotypes or affect towards older adults. To learn more about where participants experienced negative attitudes towards older workers, each item where more than 25% of participants either agreed or strongly agreed with the statement was presented in Appendix O (Beliefs about Older Workers scale) and Appendix P (Fraboni Scale of Ageism).

Approximately 25% of participants indicated that they believed older workers were harder to train for jobs, were more resistant to change, and preferred less challenging jobs than those they held when they were younger. Almost 40% of

participants perceived that younger workers were more interested than older workers in challenging jobs. Over 40% of participants believed that the majority of older workers would quit work if they could afford it, and that it is more expensive to provide health care for older employees.

Of particular interest were the findings that only 13% of participants agreed that job performance declines with age, and that only 13% of participants believed that older workers would not stay at the organization for as long as younger workers. However, almost 30% of participants still agreed with the statement that it is a better investment to train younger workers rather than older workers.

Items endorsed by over 25% of participants in the Fraboni Scale of Ageism dealt with age-related negative stereotypes of older adults. For example, over 25% of participants agreed that many old people are stingy and complain more than other people. Approximately 30% of participants agreed that old people are not interested in making new friends; many old people just live in the past, and that most old people are irritating because they tell the same stories over again. This relatively high percentage of agreement was unexpected because participants were told that "old" was defined as any individual over 55. It was surprising that participants felt that these statements applied to this demographic. However, participants may have ignored this definition, focusing mostly on the term "old people" contained in the statements. It may be that participants' own definitions of what constitutes old were used in the rating process.

Summary of Findings

The goal of this set of analyses was to determine what factors predict applicant qualification ratings, aside from work context and task demands. The data show that the only predictor of younger applicant qualification ratings was number of years of work experience. Participants with more years of work experience tended to rate younger applicants as less qualified. This may be because having more work experience leads to more realistic assessments of the qualifications needed to perform a job. Thus, applicants may be judged as less qualified.

In contrast, more positive attitudes towards telework, and greater correct knowledge about older adults predicted higher older applicant qualification ratings. In addition, more hiring experience was related to lower qualification ratings for older applicants. One possibility is that hiring experience mirrored the effect of work experience. Participants with more experience hiring may have developed more realistic assessments of the qualifications needed to perform a job; thus lowering qualification ratings.

The fact that correct knowledge about older workers predicted older applicant qualification ratings, over all other attitudinal measures is a compelling finding. This knowledge questionnaire consisted of only seven questions, assessing basic knowledge about: the proportion of older adults who experience impaired memory, how effective older workers are in comparison to younger workers, adaptability to change and ability to learn new things among older people, accident rates among older workers, as well as the proportion of the population that is over 65, and the proportion of older adults who are employed. It seems that knowledge about these basic facts is an important age-related predictor of older applicant qualification ratings.

Whether participants with higher levels of knowledge of older adults make more accurate qualification ratings is a question for empirical investigation. The hiring manager sample from Study 1 rated applicants with a mean qualification rating of 3.79 (*SD* = .55) (no applicant age was given). However, in Study 2, participants with low scores on the knowledge of older adults scale rated older applicants with a mean qualification rating of 3.61 (*SD* = .72), as compared to participants with high scores on the knowledge of older applicants scale, who rated the older applicants with a mean qualification rating of 3.76 (*SD* = .52). Applicant qualifications were kept identical across Studies 1 and 2, except for the inclusion of applicant age in Study 2. Participants with more correct knowledge about older adults may be more accurate in their evaluations of older applicants. Alternatively, and perhaps more likely, participants with higher levels of correct knowledge of older adults may rate older applicants in a more age-neutral manner.

Neither the hypothesis that attitudes towards older workers predict older applicant qualification ratings, nor the hypothesis that authoritarianism predicts older applicant qualification ratings was supported. It appears that while not overwhelming, negative attitudes towards older workers do exist. For example, at least 25% of participants indicated that they agreed with statements portraying older workers as harder to train for jobs, more resistant to change, less interested in challenging jobs, and preferring to quit work if they could afford it. These negative attitudes were further exhibited by results that showed even though the majority of participants believed that job performance does not decline with age, and that older workers stay at the organization for as long as younger workers, it is still a better investment to train younger, as opposed to older

workers. This conclusion may have been influenced by negative age-related stereotypes of older workers, but perceptions of older workers as more expensive may also help explain participants' stand on this statement. One of the questions I have attempted to answer is: Do these results mean there are no negative attitudes towards older workers? Or, do negative attitudes towards older workers exist, and are these negative attitudes somehow controlled and prevented from entering participants' ratings of older applicants?

Attitudes towards Telework

Another major goal of the current study was to understand what attitudes participants had towards telework. To answer this issue, the telework survey was examined in detail. There were three sections to the telework survey. The first section measured experience with telework. The second section measured attitudes towards telework. The third section measured factors perceived as important to telework.

Experience with Telework

Experience with telework was assessed with a 13-item scale. The first item assessed whether participants had the opportunity to engage in telework at their organization. Twelve items were answered by those participants who indicated they did have the opportunity to telework at their company. See Appendix Q for a table of the results. Almost 40% of participants indicated that they had the opportunity to telework at their organization. On average, participants engaged in telework quite frequently, at an average of two and a half days per week.

Who teleworks?

In the current sample, approximately 30% of participants indicated that they engaged in telework. In addition, the gender distribution of teleworkers was almost equal, with 51% consisting of male teleworkers, and 49% female. Teleworkers tended to have higher levels of education, under 30% only had a high school diploma or some college. Over 70% had either a College, Masters, or Doctoral degree. Consistent with previous research, the majority (67%) of teleworkers tended to be employed in either smaller (fewer than 50 employees) or larger (more than 5000 employees) organizations. Additionally, 59% were from managerial and professional occupations (architecture and engineering, business and financial operations, computer and mathematical, healthcare practitioner and support, legal, life, physical, and social sciences, management, and sales). Teleworker age was also evenly distributed with 52% under 40, and 48% 40 or over. The majority of teleworkers were Caucasian (75%), with 8% Asian, 8% multi-racial, 5% Hispanic, and 3% African American.

Reasons for not instituting telework

A little over half of participants (52%) indicated that workers at their organization do not have the opportunity to telework. These participants then answered a 6-item subscale assessing reasons why their company may not be instituting telework. Table 17 presents the descriptive statistics for these items. Responses ranged from 1 (Strongly Disagree) to 5 (Strongly Agree). The reason that participants agreed with the most for their company not instituting telework, was that the inherent nature of the company's work activities prevents them from being performed by telework.

Table 17

Descriptive Statistics for Items Assessing the Question: "Do you feel that your company

is not (formally) instituting telework because:"

Item	Mean	Standard Deviation
Allowing some workers to telework would create friction among workers who could not be given such an opportunity.	3.12	1.26
This would place an extra burden on managers in managing these workers.	3.17	1.09
The inherent nature of the company's work activities prevents them from being performed by telework.	4.02	1.00
The company believes the performance by teleworkers will not live up to the standards it requires.	3.19	1.20
It would be too difficult to train workers to perform in this capacity.	2.89	1.12
It would be too difficult to keep teleworkers abreast of changes in job requirements and company policy.	2.78	1.08

Attitudes towards Telework

Little research examines telework from a managerial perspective. The goal of this

measure was to assess how participants felt about telework. A 25-item scale measured

attitudes towards telework, in comparison to traditional office work. For example,

participants responded to questions such as: "As compared to traditional office work,

telework would help lower operational costs associated with space". Overall, participants

had fairly neutral attitudes towards telework ($M = 3.39$, $SD = .43$). A rating of 3 equals

"Neither Agree or Disagree", with higher ratings indicating more favorable attitudes

towards telework, in comparison to office work.. The scale showed good internal

consistency, $\alpha = .84$. Participants who had the opportunity to engage in telework at their organization had significantly more favorable attitudes towards telework ($M = 3.58$, $SD = .42$) as compared to those participants who did not have the opportunity to telework ($M = 3.24$, $SD = .42$), $F(1, 198) = 31.33$, $p < .001$.

Factors Perceived as Important in the Decision to Allow a Worker to Telework

A total of 17 traits and abilities were assessed by participants in terms of their importance in allowing a worker to telework. Table 18 presents the descriptive statistics for these factors. Overall, the most highly rated traits and abilities in terms of importance tended to be the traits of self-discipline, reliability, trustworthiness, and the ability to work independently.

Table 18

Descriptive Statistics for Trait and Ability Importance Ratings for Telework

	Item	Mean	Standard deviation	Range	N
1.	Experience	3.88	.92	1-5	215
2.	Flexibility	4.12	.83	1-5	216
3.	Good performance record	4.31	.84	1-5	216
4.	Health status	3.06	1.11	1-5	214
5.	Length of time at company (tenure)	3.23	1.08	1-5	214
6.	Maturity	3.84	1.03	1-5	216
7.	Need for autonomy	3.40	1.08	1-5	211
8.	Organizational skills	4.19	.88	1-5	216
9.	Reliability	4.44	.86	1-5	217
10.	Self-discipline	4.52	.77	1-5	217
11.	Technology skills	3.93	.97	1-5	216
12.	Time management skills	4.36	.79	1-5	217
13.	Trustworthiness	4.53	.75	1-5	215
14.	Verbal communication ability	3.85	1.00	1-5	215
15.	Working independently	4.43	.80	1-5	217
16.	Works well on teams	3.40	1.12	1-5	217
17.	Writing ability	3.84	1.01	1-5	217

Summary of Findings

Overall, results from the telework measures show that approximately 40% of participants are allowed to telework at their organization, and those who do telework do so for approximately half of the work week (2 ½ days). Overall, participants have slightly positive attitudes towards telework, with those who telework themselves having significantly more positive attitudes as compared to those who do not telework. Finally,

it appears that participants perceive self-discipline, reliability, trustworthiness, and the ability to work independently, as the most important factors for a teleworker to have.

Discussion

The primary research questions in this study were: (1) To what degree were participants' attitudes influenced by applicant age? (2) What were the factors that underlie attitudes towards older workers? (3) Do participants' attitudes differ based on the work context? (4) Do participants' attitudes vary depending on task demands? and (5) To what extent do these variables interact with one another?

Applicant Age

The hypothesis that older applicants would be given significantly lower qualification ratings as compared to younger applicants was not supported by the data. Thus, it appears that applicant age alone does not influence participants' ratings of older applicants. There is a multitude of research examining age bias and age discrimination in the workplace, and findings are varied. It is not difficult to find individual studies and meta-analyses that cite negative attitudes towards older workers, as well as negative evaluations of them (Avolio & Barrett, 1987; Finkelstein et al., 1995; Gordon & Arvey, 2004; Hassell & Perrewe, 1995; Kite & Johnson, 1988; Kite, Stockdale, Whitley, & Johnson, 2005; Perry et al., 1996; Rosen & Jerdee, 1976a; Rupp, Vodanovich, & Credé, 2005).   However, the results of this study indicated that older job applicants were not evaluated any less favorably than younger job applicants. There may be a number of reasons for this finding. Some studies have found age bias when no individuating or job-relevant information is given about the individual being evaluated (Finkelstein et al, 1995, Gordon &

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Arvey, 2004 & Kite & Johnson, 1988). In the current study, both the job descriptions and the applicant resumes contained highly job-relevant, individuating information about the applicants. Some of these same studies suggest that within-subject designs may elicit more age bias, due to a comparison among younger and older applicants, making age-related stereotypes more salient (Finkelstein et al, 1995, Kite & Johnson, 1988,) However, Gordon and Arvey stated that age bias was more likely to emerge in between-subjects designs and when overall rating measures are used, rather than specific measures. Applicant age was a between-subject variable in the current study, and overall ratings were used, yet no age bias emerged in the rating of older job applicants. It should be noted that due to the between-subjects design of applicant age, power was noticeably low (.19). This indicates that there was less than a 20% chance of detecting a significant effect, where one exists, and thus, may also help explain the lack of a significant relationship.

Many studies investigating attitudes towards older adults tend to use undergraduate student samples or business students. Previous findings have indicated that younger raters are more likely to discriminate against older workers (Finkelstein et al.,1995; Gibson, Zerbe, & Franken, 1993; Gordon & Arvey, 2004).   The current study examined full-time employed individuals with a mean age of 41 years. It may be that in a more experienced population such as this one, negative attitudes towards older adults, where they exists, are better managed or controlled, and thus do not carry over into behavior.

Does this mean that age discrimination does not exist? Certainly not; while mean scores on the Beliefs about Older Workers scale and the Fraboni Scale of Ageism were at mid-point, an analysis of those participants who agreed or strongly agreed with age-biased statements showed that an average of approximately 25% of participants held negative stereotypes of older workers.

Furthermore, age, years of work experience, and amount of experience working with older workers, were all negatively related to age bias, while authoritarianism was positively related to age bias. More specifically, participants who were younger, had less work experience, had less experience working with older workers, and scored higher on authoritarianism, scored significantly higher on age bias measures. It appears to be the case that while authoritarianism may help explain negative bias towards older workers, it cannot account for negative behaviors towards older applicants. The results of this study showed that while negative attitudes and stereotypes towards older workers existed, such biases did not carry into qualification ratings of older workers. Whether this disconnect between attitudes and behavior was a conscious decision on the part of participants remains to be explored.

The Effect of Work Context and Task Demands

There is an abundance of research examining attitudes towards older workers. Some studies find that older workers are evaluated less favorably than younger workers, and others, such as this study, reveal no such finding. A number of factors have been evaluated in an attempt to explain attitudes towards older workers, such as rater characteristics, experimental design, as well as characteristics of the applicant. What has remained relatively unexamined though, are characteristics of the job, and characteristics of the work environment, and the impact that these factors have on evaluations of older workers.

Applicant Age and Work Context

Results showed that, as predicted, older applicants were rated significantly higher for telework jobs as compared to younger applicants. However, younger applicants were not rated significantly different from older applicants for office work jobs.

This finding is consistent with research on managers' attitudes towards telework. Managers report being concerned about not being able to monitor employees' work, and fear that their employees are playing when they should be working (Kurland & Bailey, 1999; Nilles, 1998). This concern, combined with the fact that some commonly attributed traits of older workers are those of stability and reliability (Chiu et al., 2001; Rosen & Jerdee, 1976a; Warr & Pennington, 1993), loyalty (Warr & Pennington, 1993), conscientiousness (Chiu et al., 2001; Warr & Pennington, 1993), and integrity (Rosen & Jerdee, 1976b), seems to explain this finding. Indeed, findings from the attitudes towards telework survey indicate that the traits and abilities participants find as being most important in deciding whether a worker should be allowed to telework are those of: reliability, trustworthiness, self-discipline, and the ability to work independently. Furthermore, participants who endorsed reliability as an important factor in allowing a worker to telework, also perceived older workers as more reliable than younger workers. Indeed, almost 65% of participants indicated that they either agreed or strongly agreed that "older workers are more reliable" in the Beliefs about Older Workers scale.

Applicant Age and Task Demands

As predicted, older applicants were rated as significantly more qualified for jobs dependent on Gc as compared to younger applicants. However, younger applicants were not rated significantly different from older applicants for jobs dependent on Gf. The

former finding is consistent with the literature on age-related changes in abilities. The latter finding may be explained by the finding that participants overwhelmingly indicated that they though job knowledge was the most important test to select applicants, as such, they did not rate older applicants as less qualified for jobs dependent on Gf.

Applicant Age, Task Demands, and Work Context

This study investigated the interaction of applicant age, work context, and task demands on qualification, and provided direction as to how these variables interact with one another? Although the 3-way interaction was not significant, a significant interaction was revealed once office work and telework contexts were examined separately. When participants evaluated applicants for office work contexts, a significant age by task demand interaction was obtained. Older applicants were given higher qualification ratings as compared to younger applicants for jobs dependent on Gc. In contrast, younger applicants were given higher qualification ratings as compared to older applicants for jobs dependent on Gf. Although these findings are consistent with the literature on age-related changes in abilities, follow-up contrasts failed to reach significance for applicant age and jobs dependent on Gc or applicant age and jobs dependent on Gf.

When participants evaluated applicants for the telework context, the age by task demand interaction failed to reach significance. However, follow-up contrasts revealed that older applicants received significantly higher qualification ratings as compared to younger applicants for jobs dependent on Gc. Yet, there was no significant difference in qualification ratings for younger and older applicants for jobs dependent on Gf. Older applicants were viewed as significantly more qualified in a telework context, where, in

such a malleable context, they may be perceived as capable of adjusting their work environment and thus compensating for traditional declines in Gf.

Predictors of Qualification Ratings

Different predictors emerged for younger, as opposed to older qualification ratings. Participants with more years of work experience tended to rate younger applicants as less qualified. In contrast, attitudes towards telework, knowledge about older adults, and years of hiring experience predicted older applicant qualification ratings. The predictive power of knowledge about older workers was especially noteworthy. Data showed that participants with higher levels of knowledge about older adults rated older applicants more accurately. This finding has tangible implications for the workplace. Based on these findings, interventions designed to increase managers' knowledge of older workers' attitudes, capabilities, and other characteristics, would directly impact evaluation accuracy of older workers.

Telework

Previous research estimated that approximately one-fifth of workers engage in telework (Davis & Polonko, 2001). This estimate may under-represented. In the current sample, this proportion averaged 30%. Furthermore, previous research on the gender distribution of teleworkers was mixed, with some sources stating that more males telework (Davis & Polonko), and other sources indicating an even percentage of both males and females (Bailey & Kurland, 2002). The results of this study were consistent with the latter finding. Gender was equally distributed across teleworkers. Also evenly distributed was age, with approximately half of teleworkers under 40, and half 40 or over.

However, race was not evenly distributed across teleworkers. Approximately three-quarters of teleworkers were Caucasian, followed by, from largest to smallest proportions: Multi-racial, Asian, Hispanic, and African American races. Research indicating that teleworkers tended to have higher levels of education was also supported by the current data. Over 70% of teleworkers had at least a College degree. Additionally, consistent with previous research, a significant proportion of teleworkers work in managerial and professional occupations.

Previous research has stated that one of the main differences between telework adopters and non-adopters was a fear of telework as having a negative effect on organizational culture, as well as increasing social isolation (Illegems & Verbeke, 2004). However, data from this study suggests that the most agreed upon reason by current participants for not adopting telework, was due simply to the nature of the work not being suited for telework.

CHAPTER 7

GENERAL DISCUSSION

The goals of the present research were three-fold. (1) To discover what jobs participants viewed as being suited to telework or office work contexts, as well as what jobs were perceived to be dependent on fluid or crystallized ability. (2) To understand the role of applicant age, work context, and task demands on participants' attitudes of older workers. (3) To identify attitudinal or demographic predictors of attitudes towards older workers.

Contributions to Theory

Recognition of Task Demands and the Work Context

Results from the current study show that participants recognize what work context a job is suited to. In addition, participants use the work context to make selection-related decisions concerning both younger and older job applicants. Results of Study 1 showed that overall, hiring managers were able to recognize telework jobs as suited to a telework context, and office work jobs, as suited to an office work context. Consistent with this finding, participants in Study 2 rated older and younger applicants differently for jobs suited to a telework context as opposed to an office work context.

There were different jobs in the telework context than in the office work context. This difference introduces an additional source of variation that may have influenced qualification ratings. However, if this had been the case, controlling for attitudes towards telework would not have made a difference in the analysis of the main effect of work

context. In the future, it would be important to compare the same applicants with the same jobs, in different work contexts.

The findings from this study also indicate that participants were not explicitly aware of the primary importance of task demands for specific jobs. For the most part, hiring managers in Study 1 were not aware of jobs as being primarily dependent on either fluid or crystallized ability. However, in spite of these results, participants in Study 2 rated older and younger applicants differently for jobs dependent on fluid ability as opposed to crystallized ability. The question then, becomes: Why were hiring managers not explicitly aware of the differences in jobs dependent on fluid or crystallized ability?

Participants in Study 2 were of similar age, race, and gender to the hiring manager sample in Study 1. Study 2 participants also had substantial hiring experience, in terms of years of hiring experience, and number of employees hired. Thus, it seems that the samples were not substantially different from each other. An alternative reason may have to do with the rating process. Hiring managers had to read definitions of fluid and crystallized ability, and then complete two separate ratings for how dependent the job was on fluid ability and crystallized ability. It may be that hiring managers do not define fluid ability and crystallized ability as they were presented in the definitions. Evidence for this was how frequently a knowledge test was endorsed as the most appropriate selection test. Managers may have different schemas of what intelligence or knowledge and experience look like. As such, they may not relate those schemas to the definitions used, yet they appear to use this information in their qualification ratings of older and younger applicants.

As a result of this study, we now know that it is not sufficient to address rater or ratee characteristics when evaluating process used by managers making selection decisions regarding older applicants. Both the task demands of the job, as well as the work context need to be examined to obtain a clearer understanding of the hiring process.

Age Bias

We have learned that on the basis of applicant age alone, participants do not evaluate older job applicants less favorably as compared to younger job applicants. Does this mean that negative attitudes towards older workers are a thing of the past? Some researchers have found substantial effect sizes for age bias, ranging from .24 to .39 (Finkelstein et al., 1995; Kite & Johnson, 1988; Kite et al., 2005). Yet Gordon and Arvey (2004) found a small effect size of d = .11, and argued that age bias may be less of a problem today than it was in previous decades.

Based on the results of this study, it appears that while modest, negative attitudes towards older workers do exist. At least 25% of participants indicated that they agreed with statements portraying older workers as harder to train for jobs, more resistant to change, less interested in challenging jobs, and that it is a better investment to train younger, as opposed to older workers. Additionally, over 40% of participants agreed that it is more expensive to provide health care for older employees.

Additionally, while authoritarianism failed to predict qualification ratings, it was significantly related to negative attitudes towards older workers (on the Beliefs about Older Workers Scale and the Fraboni Scale of Ageism).

The results of the current study suggest that while raters may hold negative stereotypes of older, they do not evaluate older applicants any less favorably as compared to younger applicants. These results differ from a substantial amount of research finding age discrimination in simulated employment settings. One reason for this difference may be in the type of information provided about the applicant. Studies often cite more age bias when only general or non job-related information is given about the applicant (Finkelstein et al, 1995; Gordon & Arvey, 2004; Kite & Johnson, 1988). In the current study, both the job descriptions and the applicant resumes contained highly job-relevant and specific information about the applicants. Having more individuating information may give raters more motivation and opportunity to override pre-existing negative stereotypes about the applicant being evaluated.

Predictors of Qualification Ratings

We have learned that the most powerful predictors of qualification ratings for older applicants were attitudes towards telework, knowledge about older adults, and amount of hiring experience. Overall, participants had slightly positive attitudes towards telework, although personal experience as a teleworker was related to more positive attitudes. Additionally, participants had rather limited knowledge about older adults. Participants got on average, 2 correct answers out of a possible 7. This finding is of particular importance, as it appears as though more knowledge about older adults is related to more accurate ratings of older job applicants. Finally, we have learned that greater hiring experience appears to lead to lower qualification ratings. One

interpretation of this may be that managers with more hiring experience are more stringent in their decisions about how qualified an applicant really is.

Research has evaluated the influence of rater characteristics, experimental design, as well as characteristics of the applicant in an attempt to explain negative attitudes towards older workers. However, the current research advances the current understanding of age bias and discrimination by examining how the role of the work context, as well as the task demands of the job, are considered, and used to influence evaluations of younger and older job applicants.

It seems to be a consensus in the literature that one of the main limitations of the research on attitudes towards older workers is a lack of available theories of age discrimination.   The results of the current study are a step in the direction of further developing and empirically testing such theories.

Contributions to Practice

Enhancing knowledge about older adults

Results of the current research indicate that correct knowledge about older adults was an important predictor in older applicant qualification ratings. To educate hiring mangers' knowledge about older adults, organizations may wish to implement diversity training programs in the workplace. Such program typically attempt to increase awareness of characteristics among racial, ethnic, and cultural groups, and encourage individuals to value these differences (Stephan & Stephan, 2005). Training concerning the large amount of variability that is present in characteristics of older adults can be incorporated in such programs as well. These programs use both instructional

techniques, such as lectures and readings, as well as interactive techniques, such as role-playing and simulation games.

Job Analysis

Participants consistently rated older applicants as more qualified in telework contexts. Research suggests that the advantages that telework affords older workers may make it appropriate and potentially preferred by older people (Czaja, 2005). The results of the current study suggest that participants may also hold this perception. Organizations may wish to conduct job analyses on their jobs to identify which jobs are suited to a telework context or an office work context. Such information may help organizations attract and retain older workers in an environment where they can excel.

Limitations

This study addresses previous limitations of research examining age bias with undergraduate student samples. However, although the participant sample in Study 2 was very similar to the hiring manager sample along a number of dimensions, the participants in Study 2 did not, on average, have as many years of hiring experience or had they hired as many job applicants as the hiring manager sample. Thus, future research should attempt a larger sample selected with only hiring managers.

It could be argued that the between-subjects design for applicant age was a subtle manner of examining differences in attitudes towards older applicants. It may be beneficial to conduct a similar study with applicant age as a within-subjects variable.

This may produce more age bias, but it may also limit inter-individual variation from influencing the independent variables.

Participants rated jobs that were white collar in nature (e.g., forensic science technician, safety and health engineer, school psychologist, and sociologist). Additionally participants themselves, held mostly white collar jobs (e.g., regional manager, computer programmer, consultant, finance officer, lawyer, project manager, etc.). As such, the generalizability of these results may be limited jobs and hiring mangers from white collar occupations, rather than from all occupations.

Future Directions

Hiring managers failed to be explicitly aware of the primary importance of task demands in job descriptions. One reason for this may be because they thought of intelligence or knowledge and experience differently, and thus, could not apply the definitions of Gf and Gc given to them. Future research should be conducted with hiring managers, where they are asked what intelligence, and knowledge and experience means to them. In their own words, definitions of Gf and Gc may be created, and Study 1 replicated.

Negative attitudes towards older workers were present, yet such negative attitudes were somehow managed from entering older applicant qualification ratings. Future research should examine the process and strategies used by participants to prevent their attitudes from emerging in behavior.

Another possible area of research involves disentangling life stage from life experience. The average participant age was 41 years. While participants did not

evaluate older applicants less favorably than younger applicants, it remains unclear whether this finding is due to life stage of the participant (e.g., older participants exhibit less age bias than younger participants, perhaps because they view themselves as more similar to older workers). Alternatively, this finding may be due to the increased amount of work and hiring experience held by older participants. An area for future research may include the comparison of a 40-year old participant sample with a 40-year old hiring manager sample. Such a comparison may further highlight the difference between these two factors.

Finally, the generalizability of these findings may be further addressed in future research that replicates the current study, with the addition of both jobs and participants from blue collar backgrounds.

APPENDIX A

DEFINITIONS OF FLUID ABILITY, CRYSTALLIZED ABILITY, TELEWORK,

OFFICE WORK, AND JOB STATUS

TELEWORK: An alternative work arrangement where employees conduct some or all of their work away from the traditional workplace. Telework may be performed for as little as one day per week at home, though rarely as much as every day. Communication and personal contact in telework may be accomplished through e-mail, telephone, and videoconferencing.

OFFICE WORK: An office is the traditional environment where employees conduct all of their professional and administrative duties. Office work is performed every day of the workweek at a central location that employees must commute to (this may be an office or other location outside of the home). Traditional office work involves face-to-face communication and personal contact with other employees.

FLUID ABILITY: Can be defined as one's "on-the-spot" reasoning ability. Fluid ability represents an individual's ability to reason abstractly, perceive, remember, and think about a wide variety of basic ideas. Fluid ability involves the following: Combining information to come to conclusions about relationships, as well as the ability to apply rules to problems or situations to arrive at resolutions.

CRYSTALLIZED ABILITY: Can be defined as the range and amount of acquired knowledge, experience, skill, and information that one has learned or acquired over time. Crystallized ability represents the application of such knowledge and skill. Crystallized ability involves the following: The understanding and knowledge of communication, such as the development of verbal and written skills.

JOB STATUS:
The relative amount of esteem, standing, socioeconomic rewards, or prestige associated with an occupation in a society.

APPENDIX B

AUTHOR LISTING OF O*NET ABILITIES CITED IN THE LITERATURE AS

REPRESENTING FLUID AND CRYSTALLIZED ABILITY

O*NET Abilities Cited in the Literature as Representing Fluid Ability

O*NET Ability	Author	# Citations
Category flexibility	N/A	0
Deductive Reasoning	Bell, Matthews, Lassiter, & Leverett, 2002 Goff & Ackerman, 1992 Horn, 1968 Horn, 1989 Horn & Cattell, 1982 McGrew, 2003	6
Flexibility of Closure	Bell, Matthews, Lassiter, & Leverett, 2002 Horn, 1989	2
Fluency of Ideas	N/A	0
Inductive Reasoning	Ackerman, 2000 Bell, Matthews, Lassiter, & Leverett, 2002 Goff & Ackerman, 1992 Horn & Cattell, 1982 Horn, 1968 Horn, 1989 Klauer, Willmes, & Phye, 2002 McGrew, 2003 Rogers, Hertzog, & Fisk, 2000	9
Information Ordering	N/A	0
Mathematical Reasoning	N/A	0
Memorization	N/A	0
Number Facility	McGrew, 2003	1

O*NET Abilities Cited in the Literature as Representing Fluid Ability, cont'd.

O*NET Ability	Author	# Citations
Oral Comprehension	*Included in the review on crystallized ability*	6
	Avolio & Waldman, 1994	
	Baltes, 1993	
	Bell, Matthews, Lassiter, & Leverett, 2002	
	Horn, 1980	
	Horn, 1989	
	McGrew, 2003	
Oral Expression	*Included in the review on crystallized ability*	0
	Ackerman, 2000	
	McGrew, 2003	
Originality	N/A	0
Perceptual Speed	Baltes, 1993	2
	McGrew, 2003	
Problem Sensitivity	Ackerman, 2000	2
	Horn, 1989	
Selective Attention	Ackerman, 2000	3
	Horn, 1968	
	Rogers, Hertzog, & Fisk, 2000	
Spatial Orientation	N/A	0
Speed of Closure	N/A	0
Time Sharing	N/A	0
Visualization	Ackerman, 2000	3
	Cattell, 1963	
	Horn, 1980	

O*NET Abilities Cited in the Literature as Representing Fluid Ability, cont'd.

O*NET Ability	Author	# Citations
Written Comprehension	*Included in the review on crystallized ability*	14
	Ackerman, 1996	
	Ackerman, 2000	
	Avolio & Waldman, 1994	
	Baltes, 1993	
	Bell, Matthews, Lassiter, & Leverett, 2002	
	Cattell, 1963	
	Goff & Ackerman, 1992	
	Horn & Cattell, 1982	
	Horn & Cattell, 1982	
	Horn, 1966	
	Horn, 1968	
	Horn, 1980	
	Horn, 1989	
	McGrew, 2003	
Written Expression	*Included in the review on crystallized ability*	2
	Baltes, 1993	
	McGrew, 2003	

O*NET Abilities Cited in the Literature as Representing Crystallized Ability

O*NET Ability	Author	# Citations
Administration and Management	N/A	0
Biology	Bell, Matthews, Lassiter, & Leverett, 2002	1
Building and Construction	N/A	0
Chemistry	Bell, Matthews, Lassiter, & Leverett, 2002	1
Clerical	N/A	0
Communications and Media	N/A	0
Computers and Electronics	N/A	0
Customer and Personal Service	Baltes, 1993 Horn, 1989	2
Design	N/A	0
Economics and Accounting	N/A	0
Education and Training	N/A	0
Engineering and Technology	N/A	0
English Language	Avolio & Waldman, 1994 Baltes, 1993 Goff & Ackerman, 1992 Horn, 1980	4

O*NET Abilities Cited in the Literature as Representing Crystallized Ability, cont'd.

O*NET Ability	Author	# Citations
Fine Arts	Bell, Matthews, Lassiter, & Leverett, 2002	1
Food Production	N/A	0
Foreign Language	McGrew, 2003	1
Geography	N/A	0
History and Archeology	N/A	0
Law and Government	N/A	0
Mathematics	Avolio & Waldman, 1994 Horn, 1968 Horn, 1989	3
Mechanical	Ackerman, 1996 Baltes, 1993 Horn, 1989 Horn & Cattell, 1982	4
Medicine and Dentistry	N/A	0
Personnel and Human Resources	N/A	0
Philosophy and Theology	N/A	0
Physics	Bell, Matthews, Lassiter, & Leverett, 2002	1
Production and Processing	N/A	0

O*NET Abilities Cited in the Literature as Representing Crystallized Ability, cont.d

O*NET Ability	Author	# Citations
Psychology	Bell, Matthews, Lassiter, & Leverett, 2002	1
Public Safety and Security	N/A	0
Sales and Marketing	N/A	0
Sociology and Anthropology	N/A	0
Telecommunications	N/A	0
Therapy and Counseling	N/A	0
Transportation	N/A	0

APPENDIX C

OCCUPATIONS

Occupations along Task Demand and Work Context

Occupations	Task Demand	Average Rating	Work Context
Education Administrator, Elementary and Secondary school	Gc	86.0	Office
Technical Writer	Gc	88.0	Telework
Forensic Science Technician	Gf	83.0	Office
Database Administrator	Gf	79.5	Telework
Industrial/Organizational Psychologist	Gc	82.5	Office
Economist	Gc	82.5	Telework
Chemist	Gf	81.0	Office
Mining and Geological Engineer	Gf	78.0	Telework
Government Property Inspector and Investigator	Gc	77.5	Office
Advertising Sales Agent	Gc	81.5	Telework
Data Processing Equipment Repairs	Gf	81.0	Office
Insurance Underwriter	Gf	78.0	Telework
Radiologic Technician	Gc	74.0	Office
Real Estate Appraiser	Gc	73.0	Telework
Registered Nurse	Gf	78.0	Office
Actuary	Gf	76.5	Telework
Public Relations Manager	Gc	84.0	Office
Sociologist	Gc	82.5	Telework
Police Detective	Gf	83.0	Office
Engineering Manager	Gf	76.5	Telework
School Psychologist	Gc	80.0	Office
Compensation and Benefit Manager	Gc	80.0	Telework
Fire Investigator	Gf	81.5	Office
Training and Development Manager	Gf	78.0	Telework
Radio and Television Announcer	Gc	77.5	Office
Reporter and Correspondent	Gc	85.5	Telework
Coroner	Gf	77.5	Office
Operations Research Analyst	Gf	76.5	Telework
Secretary	Gc	75.0	Office
Graduate Teaching Assistant	Gc	84.0	Telework
Security Guard	Gf	75.0	Office
Mechanical Drafter	Gf	75.0	Telework

APPENDIX D

HOLLAND'S 6-FACTOR PERSONALITY TYPOLOGY

Artistic — Artistic occupations frequently involve working with forms, designs and patterns. They often require self-expression and the work can be done without following a clear set of rules.

Enterprising — Enterprising occupations frequently involve starting up and carrying out projects. These occupations can involve leading people and making many decisions. Sometimes they require risk taking and often deal with business.

Social — Social occupations frequently involve working with, communicating with, and teaching people. These occupations often involve helping or providing service to others.

Conventional — Conventional occupations frequently involve following set procedures and routines. These occupations can include working with data and details more than with ideas. Usually there is a clear line of authority to follow.

Investigative — Investigative occupations frequently involve working with ideas, and require an extensive amount of thinking. These occupations can involve searching for facts and figuring out problems mentally.

Realistic — Realistic occupations frequently involve work activities that include practical, hands-on problems and solutions. They often deal with plants, animals, and real-world materials like wood, tools, and machinery. Many of the occupations require working outside, and do not involve a lot of paperwork or working closely with others.

APPENDIX E

INTERNET RESOURCES USED TO RECRUIT HIRING MANAGERS

Message Boards

www.SHRM.org

www.workforce.com

http://jobsyntax.com/forums

http://tcpmag.com/forums/forum_posts.asp?tid=4148&pn=1&Tpn=1

Listservs

HRNET@yahoogroups.com

http://finance.groups.yahoo.com/group/HRNET/messages

APPENDIX F: LIST OF PARTICIPANTS' REPORTED JOB TITLES

Participants' Reported Job Titles

account executive	detention processing technician	Mechanical Engineer
Accounting Manager	detention training officer	Metering Serices Administrator
adm assistant	director	Mtg Administrator
admin	Director	national logistics director
Admin Sec	email processor	National Sales Manager
Administrative Officer	engineer	network engineer
administrator	Executive	OE
Administrator	Executive Assistant	Office Administrator
Agent	Executive Director	Office manager
area manager	Faculty	Office Manager
assembler	field engineer	OFFICE MANAGER
assembly operator	field manager or owner	officer
Assistant Public Defender	Finance manager	Operations Manager
Assistant Regional Manager -	Finance Officer	owner
Human Resource	Forensic Evidence Specialist	Owner
Assistant to the President	General Labourer	Owner / Manager
Assistant to the Vice-President	General Manager	owner operator
billing clerk	GENERAL MANAGER	P.E. teacher/Coach
Bookkeper	Grocery Clerk	Paramedic
Business Development Manager	Head oSciences (in a School)	paramedic/ 911 dispatcher
caregiver	head teller	Partner
cashier	Healthcare Supervisor	Pastor
CEO	Healthy Strides Assistant	Personal Assistant
CFO	HR Advisor	physician
chief	HR Analyst	Pit Manager
Chief Audit Executive	HR Manager	PLANNING MANAGER
cio	hr mgr	Police Sergeant
Clinic Manager	HR Specialist	Postal Delivery Officer
Collections , Senior Management	Human Resources Director	Process Engineer
College Instructor	Human Resources Supervisor	Process Tech
Computer Programmer	Instructional Designer	Processing Specialist
Construction Site Administrator	Instructor	Progrmamer
consultant	inventory control specialists	project manager
Consultant	IT Director	Project Manager
Consultant Landman	IT Manager	Quality Control Tech
Cook	IT MGR PRO TECH	radiology transcriptionist
credit analyst	it/ms dept head	receptionist
Crisis Advocate	Kennel manager	Recruitment Officer
Customer Administrator	laborer	rep
Customer Engineer	laundry assitant	Rep
customer service agent	Law Accountant	research associate
Customer Solutions Team Lead	lawyer	resident care aide
Database Admin and Teacher	lecturer	revenue auditor 3
Database Analyst	Legal Secretary	RN
Dental Assistant	legalkey coordinator	Sales
desktop support officer	Librarian	Sales and Accounts
	line operater	Sales and marketing manager
	machine operator	Sales Manager
	Manager	Sales Rep
	manager travel agency	Sales Rep.
		school counselor
		secretary

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Participants' Reported Job Titles, cont'd.

Secretary
Senior Project Engineer
Senior Research Analyst
Senior Research Officer
social worker
software consultant
Software Engg
Software Engineer
Sr Programme Devt Officer
Sr. Executive
Staff accountant
Substitute Teacher
supervisor
Supervisor/Trainer

Supervisory Civil Engineering
Technician
Supportive roommate
System Test Engineer
Systems Integrator
tailoress/storeperson
tapper crane operator
taxpayer service representive
teacher
Teacher
Teachers Aide
Team Leader
team leader

Team Manager
technical officer
Technical services advisor
technician
Treasury Manager
truck driver
Trust Compliance Officer
Universal Technical Support
Representative
Total

APPENDIX G: COMPARISON OF DESCRIPTIVE STATISTICS FOR

STUDY 1 (HIRING MANAGERS) AND STUDY 2 (STUDYRESPONSE

PARTICIPANTS)

Hiring Manager Sample (N=77) Study 1			StudyResponse Sample (N=220) Study 2		
Gender (N=49)		Percent	Gender (N=219)		Percent
Male		47%	Male		51%
Female		53%	Female		49%
Race (N=48)			Race (N=218)		
Caucasian		88%	Caucasian		80%
Minority		12%	Minority		20%
African American		4%	African American		4%
Hispanic		2%	Hispanic		3%
American Indian		0	American Indian		1%
Asian		2%	Asian		8%
Native Hawaiian		0	Native Hawaiian		.5%
Multi		2%	Multi		3%
Other		2%	Other		1%
Education (N=49)			Education (N=219)		
High School/GED		0	High School/GED		11%
Some College		6%	Some College		25%
College Degree		53%	College Degree		49%
Masters Degree		41%	Masters Degree		12%
Doctoral Degree		0	Doctoral Degree		3%
Number of applicants hired (N=39)			Number of applicants hired (N=208)		
26+		N/A[a]	26+		20%
21-25		N/A[a]	21-25		2%
16-20		N/A[a]	16-20		5%
16+		67%	16+		N/A[b]
11-15		13%	11-15		6%
6-10		15%	6-10		12%
3-5		5%	3-5		13%
1-2		0	1-2		12%
None		0	None		31%

Hiring Manager Sample				StudyResponse Sample			
	Mean	SD	Range		Mean	SD	Range
Age	42.25	8.46	30-62	Age	41.04	10.22	22-68
Yrs Work	5.38	5.23	1-25	Yrs Work	19.71	10.79	1-55
Yrs Hiring	12.52	7.92	3-38	Yrs Hiring	5.91	7.65	0-36

Note: [a] The highest category for "number of applicants hired" for the hiring manager sample (study 1) was 16+.
[b] The StudyResponse sample (study 2) did not have a "16+" category for "number of applicants hired.

**APPENDIX H: DEMOGRAPHIC, MANAGERIAL EXPERIENCE, AND
ORGANIZATIONAL CHARACTERISTICS MEASURES**

Background Information

Please answer some general questions about yourself and your employment history.

Section 1. Personal Information

1. What is your gender?
   - ❑ Male   ❑ Female   ❑ I prefer not to answer

2. What is your age? (Enter 0 if you do not wish to answer)
   _____ Years

3. What is the title of your current position in the organization where you are employed? (Enter 0 if you do not wish to answer)

   Title _____

4. What is the highest level of education you have completed?
   - ❑ High School /GED
   - ❑ Some College
   - ❑ College degree
   - ❑ Master's Degree
   - ❑ Doctoral Degree
   - ❑ I prefer not to answer

5. What is your race? (Check all that apply)
   - ❑ White
   - ❑ Black / African American
   - ❑ Hispanic / Latino
   - ❑ American Indian / Alaska Native
   - ❑ Asian
   - ❑ Native Hawaiian / Pacific Islander
   - ❑ Multi-racial
   - ❑ I prefer not to answer
   - ❑ Other (please specify)

6. Are you currently, or have you been, a job applicant in the past 3 months?
   - ❑ Yes   ❑ No   ❑ I prefer not to answer

Section 2. Your Work Experience

7. How many years of full-time work experience do you have? (Enter 99 if you do not wish to answer)

    _____

8. How many years of experience do you have hiring job applicants? (Enter 99 if you do not wish to answer)

    _____

9. How many job applicants have you hired?
    - ❑ None
    - ❑ 1-2
    - ❑ 3-5
    - ❑ 6-10
    - ❑ 11-15
    - ❑ 16-20
    - ❑ 21-25
    - ❑ 26+
    - ❑ I prefer not to answer

10. How experienced are you in interviewing job applicants?
    - ❑ Not at all
    - ❑ Somewhat
    - ❑ Moderately
    - ❑ Very
    - ❑ Extremely
    - ❑ I prefer not to answer

11. How experienced are you in reviewing job applications?
    - ❑ Not at all
    - ❑ Somewhat
    - ❑ Moderately
    - ❑ Very
    - ❑ Extremely
    - ❑ I prefer not to answer

12. How experienced are you in working with the following populations?

	Not at all	Somewhat	Moderately	Very	Extremely	I prefer not to answer
Non-native English speakers	❑	❑	❑	❑	❑	❑
Disabled or handicapped individuals	❑	❑	❑	❑	❑	❑
Older workers (individuals 55 and over)	❑	❑	❑	❑	❑	❑

Section 3. Characteristics of Your Organization

1. My company is primarily associated with the following sector:
    - ❑ Service
    - ❑ Manufacturing
    - ❑ Agricultural
    - ❑ Private
    - ❑ Federal
    - ❑ I prefer not to answer
    - ❑ Other

2. My company has the following number of employees:
    - ❑ Fewer than 50
    - ❑ Between 50 and 499
    - ❑ Between 500 and 5000
    - ❑ More than 5,000
    - ❑ I prefer not to answer

3. The following category or categories best describe the products or services that I am responsible for in my company (please check all categories that apply):
    - ❑ Architecture and Engineering
    - ❑ Installation, Maintenance, and Repair
    - ❑ Arts, Design, Entertainment, Sports, and Media
    - ❑ Legal
    - ❑ Building and Grounds Cleaning and Maintenance
    - ❑ Life, Physical, and Social Sciences
    - ❑ Business and Financial Operations
    - ❑ Management
    - ❑ Community and Social Services
    - ❑ Military Specific
    - ❑ Computer and Mathematical
    - ❑ Office and Administrative Support
    - ❑ Construction and Extraction
    - ❑ Personal Care and Service
    - ❑ Education, Training, and Library
    - ❑ Production
    - ❑ Farming, Fishing, and Forestry
    - ❑ Protective Services
    - ❑ Food Preparation and Serving Related
    - ❑ Sales and Related
    - ❑ Healthcare Practitioner and Technical
    - ❑ Transportation and Material Moving
    - ❑ Healthcare Support
    - ❑ I prefer not to answer
    - ❑ Other (please specify)

APPENDIX I: ATTITUDES TOWARDS TELEWORK

Telework Survey
The focus of this survey is on telework, specifically, the goal is to assess the attitudes managers have about the different dimensions of telework.

Telework is also referred to as telecommuting, as well as flexiwork, and has been defined by the United States Office of Personnel Management (OPM) as an alternative work arrangement for employees to conduct all or some of their work away from the primary workplace.

In this survey, we will be asking you about the status of telework in your company, as well as your attitudes and experience concerning telework.   In responding to these questions, assume that the telework site in question is the employee's home or residence.

Section 1. The Existence of Telework in your Company

1.   Do any workers at your company have the opportunity to telework (e.g. by working at home)?
_____ Yes   _____ No   _____ Not Sure   ___ I prefer not to answer
If you answered No or Not Sure, please skip to Question 14. If yes, please continue.

2.   About what percentage of the workers in your <u>department</u> are involved in telework?
_____ Less than 20%   _____ Between 20% and 50%   _____ More than 50%   ___ I prefer not to answer

3.   About what percentage of the workers in your <u>company</u> are involved in telework?
_____ Less than 20%   _____ Between 20% and 50%   _____ More than 50%   ___ I prefer not to answer

4.   How often do you yourself engage in telework?

1	2	3	4	5	6
Not at all	Rarely	Sometimes	Most of the Time	All the Time	I prefer not to answer

5.   How familiar are you with telework as an alternative work arrangement?

1	2	3	4	5	6
Not at all	Somewhat	Moderately	Very	Extremely	I prefer not to answer

6. How often do you interact with other teleworkers in your company?

1	2	3	4	5	6
Never	Occasionally	Often	Most of the time	All of the time	I prefer not to answer

7.   On average, how many days per week do those workers who telework actually do so?

1	2	3	4	5	6
1 Day	2 Days	3 Days	4 Days	5 Days	I prefer not to answer

8. When did the opportunity for telework in your company first occur?

1	2	3	4	5	6
Less than 2 Years ago	2-5 Years ago	6-10 Years ago	Over 10 Years ago	Not Sure	I prefer not to answer

9. How supportive would you say your organization is of telework?

1	2	3	4	5	6
Not at all	Somewhat	Moderately	Very	Extremely	I prefer not to answer

10. The rate of participation in telework by older (55 and older) employees as compared to younger employees is:

1	2	3	4	5	6
Not at all	Less than younger employees	About the same	Greater than younger employees	Not sure	I prefer not to answer

11. How "formalized" is telework in your company, in the sense that company or departmental policies exist regarding telework?

1	2	3	4	5	6
Not at all	Somewhat	Moderately	Very	Extremely	I prefer not to answer

.

12. How are teleworkers trained to perform their job? Please check all that apply.

❑	❑	❑	❑	❑	❑
On site	Satellite location	Online	Not Sure	Not trained	I prefer not to answer

13. How are teleworkers kept abreast of changes in company policies or job requirements? Please check all that apply.

❑ Face-to-face ❑ Staff meetings ❑ Online messages ❑ Telephone

❑ Postal mail ❑ They are not kept abreast of changes ❑ Not Sure ❑ I prefer not to answer

Please go to Section 2.

The following questions assume that opportunities for telework **do not exist** in your company.

14. How likely do you think your company would be to implement a formalized telework program or policy if incentives were provided to do so, such as a reduction in costs of equipment needed for teleworkers or an energy tax credit?

1	2	3	4	5	6
Not at all	Somewhat	Moderately	Very	Extremely	I prefer not to answer

15. Legal issues involving employer responsibility for work performed are an impediment to the company in allowing telework.

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

16. Issues regarding security of data and privacy regarding company business are an impediment to the company in allowing telework.

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

Do you feel that your company is not (formally) instituting telework because:

17. Allowing some workers to telework would create friction among workers who would not be given such an opportunity?

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

18. This would place an extra burden on managers in managing these workers

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

19. The inherent nature of the company's work activities prevents them from being performed by telework (i.e., direct supervision and face-to-face communication is necessary)?

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

20. The company believes the performance by teleworkers will not live up to the standards it requires?

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

21. It would be too difficult to train workers to perform in this capacity?

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

22. It would be too difficult to keep teleworkers abreast of changes in job requirements and company policy?

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

Section 2. Your Attitudes Toward the Work Environment

Below are a number of statements regarding telework <u>that is assumed to be performed in the worker's home or residence</u>. For each one of these, rate telework in comparison to traditional office work. Circle the extent to which you agree or disagree with the statement.

1.   As compared to traditional office work, telework would help lower operational costs associated with space.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

2.   As compared to traditional office work, several of our jobs would benefit from telework because the workers who perform those jobs would be able to work in a more uninterrupted fashion.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

3.   As compared to traditional office work, workers who telework could get easily distracted by family or other pressures at home.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

4.   As compared to traditional office work, teleworkers are more stressed to meet quotas or performance objectives.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

5.   As compared to traditional office work, telework would help bind qualified personnel to the organization because it would give them a better chance of addressing personal responsibilities such as caregiving or medical problems.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

6.   As compared to traditional office work, there are home safety or other legal issues associated with telework involving employer responsibility.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

7. As compared to traditional office work, it is more difficult to train workers who will telework.

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

8. As compared to traditional office work, workers who need to commute long distances would welcome the opportunity for telework.

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

9. As compared to traditional office work, telework would improve the prospects for job retention and satisfaction.

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

10. As compared to traditional office work, telework can produce excessive management burdens by virtue of having to manage employees off site in addition to managing those who are on site.

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

11. As compared to traditional office work, telework can disrupt a worker's home activities due to the pressure to meet work performance objectives.

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

12. As compared to traditional office work, by reducing the need for commuting, telework helps us play a role in protecting the environment.

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

13. As compared to traditional office work, telework cannot accommodate face-to-face communication, which may impact job performance.

	1	2	3	4	5	6
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

14. As compared to traditional office work, telework provides the opportunity to employ older workers who may not be able to commute or work on a regular basis.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

15. As compared to traditional office work, the nature of many of the jobs in our company is not easily adaptable to telework.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

16. As compared to traditional office work, it is more difficult to get feedback from workers who engage in telework.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

17. As compared to traditional office work, telework provides us with the opportunity for recruiting part-time workers for whom we could save office space.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

18. As compared to traditional office work, the opportunity to work at home would cause friction among other workers for whom telework is not a viable option.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

19. As compared to traditional office work, telework would be able to accommodate handicapped workers who cannot easily commute.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

20. As compared to traditional office work, workers cannot be adequately supervised when their jobs are not performed on site.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

21. As compared to traditional office work, technology is sufficiently affordable and available that it can make communication with workers and support of their job functions a non-issue when working from the home.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

22. As compared to traditional office work, the opportunity for telework diminishes concerns related to terrorism or other security issues, making workers more comfortable and satisfied with their jobs.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

23. As compared to traditional office work, telework makes it more difficult for workers to be aware of company-related information.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

24. As compared to traditional office work, telework provides workers with greater flexibility in scheduling personal activities.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

25. As compared to traditional office work, telework increases overall satisfaction with one's job.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

Section 3. Traits and Abilities Impacting the Opportunity for Telework

Below is a list of factors associated with work performance. Rate each factor on a scale of 1 (Not important) to 5 (Extremely important) in terms of the importance of that factor in impacting your decision to allow a worker to telework.

1. Ability to make adjustments:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

2.	Capacity for self-assessment:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

3.	Experience:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

4.	Flexibility:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

5.	Good performance record:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

6.	Health status:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

7.	Length of time at company (tenure):

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

8.	Maturity:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

9.	Need for autonomy:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

10.	Organizational skills:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

11.   Reliability:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

12.   Self-discipline:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

13.   Technology skills:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

14.   Time management skills:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

15.   Trustworthiness:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

16.   Verbal communication ability:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

17.   Working independently

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

18.   Works well on teams:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

19.   Writing ability:

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

APPENDIX J: THE FRABONI SCALE OF AGEISM

Attitudes towards Employees

Please read each statement carefully. Choose the response that BEST tells how you feel about each statement. In all cases, OLDER refers to those who are 55 years of age or older.

1. Teenage suicide is more tragic than suicide among the old.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

2.   Many old people are stingy and hoard their money and possessions.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

3.   Many old people are not interested in making new friends, preferring instead the circle of friends they have had for years.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

4.   Many old people just live in the past.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

5.   I would prefer not to go to an open house at a senior's club, if invited.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

6.   Most old people should not be trusted to take care of infants.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

7.   Many old people are happiest when they are with people their own age.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

8.   Most old people would be considered to have poor personal hygiene.

            1   2   3   4   5
    Strongly Disagree   Disagree   Agree   Strongly Agree   I prefer not to answer

9.   Most old people can be irritating because they tell the same stories over and over again.

            1   2   3   4   5
    Strongly Disagree   Disagree   Agree   Strongly Agree   I prefer not to answer

10.   Old people complain more than other people do.

            1   2   3   4   5
    Strongly Disagree   Disagree   Agree   Strongly Agree   I prefer not to answer

11.   I sometimes avoid eye contact with old people when I see them.

            1   2   3   4   5
    Strongly Disagree   Disagree   Agree   Strongly Agree   I prefer not to answer

12.   I don't like it when old people try to make conversation with me.

            1   2   3   4   5
    Strongly Disagree   Disagree   Agree   Strongly Agree   I prefer not to answer

13.   Complex and interesting conversation cannot be expected from most old people.

            1   2   3   4   5
    Strongly Disagree   Disagree   Agree   Strongly Agree   I prefer not to answer

14.   Feeling depressed when around old people is probably a common feeling.

            1   2   3   4   5
    Strongly Disagree   Disagree   Agree   Strongly Agree   I prefer not to answer

15.   Old people should find friends their own age.

            1   2   3   4   5
    Strongly Disagree   Disagree   Agree   Strongly Agree   I prefer not to answer

16.   Old people should feel welcome at the social gatherings of young people.

            1   2   3   4   5
    Strongly Disagree   Disagree   Agree   Strongly Agree   I prefer not to answer

17. Old people don't really need to use our community sports facilities.

| 1 | 2 | 3 | 4 | 5 |
| Strongly Disagree | Disagree | Agree | Strongly Agree | I prefer not to answer |

18. It is best that old people live where they won't bother anyone.

| 1 | 2 | 3 | 4 | 5 |
| Strongly Disagree | Disagree | Agree | Strongly Agree | I prefer not to answer |

19. I personally would not want to spend much time with an old person.

| 1 | 2 | 3 | 4 | 5 |
| Strongly Disagree | Disagree | Agree | Strongly Agree | I prefer not to answer |

20. The company of most old people is quite enjoyable.

| 1 | 2 | 3 | 4 | 5 |
| Strongly Disagree | Disagree | Agree | Strongly Agree | I prefer not to answer |

21. It is sad to hear about the plight of the old in our society these days.

| 1 | 2 | 3 | 4 | 5 |
| Strongly Disagree | Disagree | Agree | Strongly Agree | I prefer not to answer |

22. Old people should be encouraged to speak out politically.

| 1 | 2 | 3 | 4 | 5 |
| Strongly Disagree | Disagree | Agree | Strongly Agree | I prefer not to answer |

23. Most old people are interesting, individualistic people.

| 1 | 2 | 3 | 4 | 5 |
| Strongly Disagree | Disagree | Agree | Strongly Agree | I prefer not to answer |

APPENDIX K: BELIEFS ABOUT OLDER WORKERS

Attitudes towards Employees

Please read each statement carefully. Choose the response that BEST tells how you feel about each statement. In all cases, OLDER refers to those who are 55 years of age or older.

1. Older employees have fewer accidents on the job.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

2. Most companies are unfair to older employees.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

3. Older employees are harder to train for jobs.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

4. Older employees are absent more often than younger employees.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

5. Younger employees have more serious accidents than older workers.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

6. If two workers had similar skills, I'd pick the older worker to work with me.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

7. Occupational diseases are more likely to occur among younger employees.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

8. Older employees usually turn out work of higher quality.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

9. Older employees are grouchier on the job.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

10. Younger workers are more cooperative on the job.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

11. Older workers are more reliable.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

12. Most older workers cannot keep up with the speed of modern industry.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

13. Older employees are most loyal to the company.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

14. Older workers resist change and are too set in their ways.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

15. Younger workers are more interested than older workers in challenging jobs.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

16. Older workers can learn new skills as easily as other employees.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

17. Older employees are better employees

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

18. Older employees do not want jobs with increased responsibilities.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

19. Older workers are not interested in learning new skills.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

20. Older employees should 'step aside' (take a less demanding job) to give younger employees advancement opportunities.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

21. The majority of older employees would quit work if they could afford it.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

22. Older workers are usually outgoing and friendly at work.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

23. Older workers prefer less challenging jobs than those they held when they were younger.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

24. It is a better investment to train younger workers rather than older workers.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

25. Older employees in our department work just as hard as anyone else.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

26. Given a choice, I would not work with an older worker on a daily basis.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

27. A person's job performance declines significantly with age.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

28. It is more expensive to provide health care for older employees.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

29. It is much more expensive to have older employees.

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

30. Older employees are harder to fire

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

31. Older workers will not stay at the organization for as long as younger employees

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

32. I think younger employees should be given priority to stay if a company contracts its business

1	2	3	4	5	6
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	I prefer not to answer

APPENDIX L: PALMORE'S FIRST FACTS ON AGING QUIZ

Knowledge about older people.

Please read each statement carefully. Choose the response that you think is correct. In all cases, unless otherwise mentioned, OLDER refers to those who are 55 years of age or older.

1. The proportion of older people who have impaired memory, disorientation, or dementia is:

	Answer Key
a. about 1 in 100	+
b. about 1 in 10	*
c. about 1 in 2	-
d. the majority	-
e. I don't know	0
f. I prefer not to answer	0

2. Most older workers:

a. work less effectively than younger workers	-
b. work as effectively as younger workers	*
c. work more effectively than younger workers	+
d. are preferred by most employers	+
e. I don't know	0
f. I prefer not to answer	0

3. Adaptability to change among older people is:

a. rare	-
b. present among half	-
c. present among most	*
d. more common than among younger people	+
e. I don't know	0
f. I prefer not to answer	0

4. As for old people learning new things:

a. most are unable to learn at any speed	-
b. most are able to learn, but at a slower speed	*
c. most are able to learn as fast as younger people	+
d. learning speed is unrelated to age	+
e. I don't know	0
f. I prefer not to answer	0

5. The accident rate among older workers tends to be:

a. higher than among younger workers	-
b. about the same as among younger workers	-
c. lower than among younger workers	*
d. Unknown because there are so few workers over 65	-
e. I don't know	0
f. I prefer not to answer	0

Knowledge about older people, cont'd.

Please read each statement carefully. Choose the response that you think is correct. In all cases, unless otherwise mentioned, OLDER refers to those who are 55 years of age or older.

6.   The proportion of the U.S. population now age 65 or over is:
     a. 3%   0
     b. 13%   *
     c. 23%   0
     d. 33%   0
     e. I don't know   0
     f. I prefer not to answer   0

7.   Most old people are:
     a. employed   +
     b. employed or would like to be employed   +
     c. employed, do housework or volunteer work, or would like to do some   *
        kind of work
     d. not interested in any work   -
     e. I don't know   0
     f. I prefer not to answer   0

Answer key:

*   Correct answer
+   Positive bias
-    Negative bias
0   Neutral

Net age-bias score = Mean percentage of positive-bias errors - Mean percentage of negative-bias errors

APPENDIX M: AUTHORITARIANISM AND COMFORT WITH DIVERSITY

1. It is always better to trust the judgment of the proper authorities in government and religion than to listen to the noisy rabble-rousers in our society who are trying to create doubt in people's minds.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

2.   It would be best for everyone if the proper authorities censored magazines and movies to keep trashy material away from youth.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

3.   It may be considered old-fashioned by some, but having a decent, respectable appearance is still the mark of a gentleman and, especially, a lady.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

4.   The facts on crime, sexual immorality, and the recent public disorders all show we have to crack down harder on deviant groups and troublemakers if we are going to save our moral standards and preserve law and order.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

5.   Obedience and respect for authorities are the most important virtues children should learn.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

6.   Once the government leaders and the authorities condemn the dangerous elements in our society, it will be the duty of every patriotic citizen to help stomp out the rot that is poisoning our country from within.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

7.   The real keys to the "good life" are obedience, discipline, and sticking to the straight and narrow.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

8.   People should pay less attention to the Bible and the other traditional forms of religious guidance and instead develop their own personal standards of what is moral and immoral.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

9.   There is nothing wrong with premarital sexual intercourse.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

10.   Atheists and others who have rebelled against the established religions are no doubt every bit as good and virtuous as those who attend church regularly.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

11.   A lot of our rules regarding modesty and sexual behavior are just customs which are not necessarily any better or holier than those which other people follow.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

12.   There is absolutely nothing wrong with nudist camps.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

13.   It's very important that a friend agrees with me on most issues.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

14.   It does not upset me if someone is unlike myself.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

15.   Getting to know someone of another race is generally an uncomfortable experience for me.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

16.   Knowing how a person is similar to me is the most important part of being good friends.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

17.   It's really hard for me to feel close to a person from another race.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

18.   It's often hard to find things in common with people from another generation.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

19.   I have friends of differing ethnic origins.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

20.   I am often embarrassed when I see a physically disabled person.

1	2	3	4	5
Strongly Disagree	Disagree	Agree	Strongly Agree	I prefer not to answer

APPENDIX N: JOB DESCRIPTIONS AND APPLICANT RESUMES

USED IN STUDY 2

Job Description: School Psychologist (Gc/Office)

Major responsibilities:
- Compile and interpret students' test results, along with information from teachers and parents, in order to diagnose conditions, and to help assess eligibility for special services.
- Assess an individual child's needs, limitations, and potential, using observation, review of school records, and consultation with parents and school personnel.
- Select, administer, and score psychological tests.
- Provide consultation to parents, teachers, administrators, and others on topics such as learning styles and behavior modification techniques.
- Counsel children and families to help solve conflicts and problems in learning and adjustment.

Major requirements:
- You are expected to possess the relevant knowledge, experiences, and skills of a school psychologist. You will be responsible for the application of such knowledge and skill, and must possess an understanding and knowledge of communication (e.g., verbal and written skills).

Additional requirements:
- Ability to read and understand students' test results
- Ability to work with ideas that require extensive thought
- Capability in searching for facts
- Ability to figure out problems mentally
- Comfort in working with, communicating with, and teaching people
- Help and provide service to others
- A minimum of 5 years of experience

Work environment:
This position takes place in an office. Employees are expected to commute to the office every day of the workweek. Such work will involve face-to-face communication and personal contact with other employees.

Applicant's resume

Objective: Position as a School Psychologist
<u>Name:</u> Logan Browne
<u>Age:</u> 55 (25)

<u>Qualifications</u>:
- 6 years of experience
- Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.
- Strong communication skills, such as giving full attention to what other people are saying, taking time to understand the points being made, and asking questions as appropriate.
- Effective listening and comprehension skills
- Experience in observing and obtaining information from all relevant sources
- Capability to work and plan with little supervision

Job Description: Forensic Science Technician (Gf/Office)

Major responsibilities:

- Collect evidence from crime scenes, storing it in conditions that preserve its integrity.
- Identify and quantify drugs and poisons found in biological fluids and tissues, in foods, and at crime scenes.
- Reconstruct crime scenes in order to determine relationships among pieces of evidence.
- Collect impressions of dust from surfaces in order to obtain and identify fingerprints.
- Analyze gunshot residue and bullet paths in order to determine how shootings occurred.

Major requirements:

- You are expected to possess the ability to engage in "on-the-spot" reasoning, and must be able to perceive, remember, and think about a wide variety of basic ideas in your position as a forensic science technician. This includes combining information to come to conclusions about relationships, as well as the ability to apply rules to problems or situations to arrive at resolutions.

Additional requirements:

- Must be able to combine pieces of evidence found so as to reconstruct crime scenes
- Ability to work with ideas that require an extensive amount of thinking
- Capability in searching for facts and figuring out problems mentally
- Ability to follow set procedures and routines
- Aptitude in working with data and details more than with ideas
- Experience with practical, hands-on problems and solutions
- A minimum of 3 years of experience

Work environment:

This position takes place in the office, where you will conduct all of your professional and administrative duties. Employees are expected to commute to the office every day of the workweek. Such work will involve face-to-face communication and personal contact with other employees.

Applicant's resume

Objective: Position as a Forensic Science Technician
Name: Tyler Grave
Age: 59 (29)

Qualifications:

- 4 years of experience
- Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.
- Skilled in the use of scientific rules and methods to solve problems
- Ability to combine pieces of information to form conclusions as well as finding relationships among seemingly unrelated events
- Experienced in the identification of information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.
- Capability to work and plan with little supervision

Job Description: Safety and Health Engineer (Gf/Telework)

Major responsibilities:
- Review findings from industrial accidents, injuries, or occupational diseases to determine causes and preventive measures.
- Review employee safety programs to determine their adequacy.
- Review plans and specifications for construction of new machinery or equipment to determine if all safety requirements have been met.
- Compile, analyze, and interpret statistical data related to occupational illnesses and accidents.
- Interpret safety regulations for others interested in industrial safety, such as safety engineers, labor representatives, and safety inspectors.

Major requirements:
- You are expected to possess the ability to engage in "on-the-spot" reasoning, and must be able to perceive, remember, and think about a wide variety of basic ideas in your position as a safety and health engineer. This includes combining information to come to conclusions about relationships, as well as the ability to apply rules to problems or situations to arrive at resolutions.

Additional requirements:
- The ability to combine findings from accidents, injuries, and diseases to form conclusions about causes and prevention.
- Ability to work with ideas that require an extensive amount of thinking
- Capability in searching for facts and figuring out problems mentally
- Comfort in leading people and making many decisions
- Comfort with following a clear line of authority
- Comfortable working independently
- A minimum of 3 years of experience

Work environment:
This position includes the ability to telework. Telework may be performed for as little as one day per week at home though rarely as much as every day. Communication and personal contact in telework may be accomplished through e-mail, telephone, and videoconferencing.

Applicant's resume

Objective: Position as a Safety and Health Engineer
Name: Avery Benton
Age: 57 (27)

Qualifications:
- 4 years of experience
- Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.
- Critical thinking skills, such as the use of logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems
- Ability to recognize problems, such as to tell when something is wrong or is likely to go wrong
- Experienced in the analysis of information and evaluation of results to choose the best solution and solve problems
- Capability to work and plan with little supervision

Job Description: Sociologist (Gc/Telework)

Major responsibilities:
- Prepare publications and reports containing research findings.
- Analyze and interpret data in order to facilitate the understanding of human social behavior.
- Plan and conduct research to develop and test theories about societal issues such as crime, group relations, poverty, and aging.
- Consult with and advise individuals such as administrators, social workers, and legislators regarding social issues and policies, as well as the implications of research findings.
- Develop approaches to the solution of groups' problems, based on research findings in sociology and related disciplines.

Major requirements:
- You are expected to possess the relevant knowledge, experiences, and skills of a sociologist. You will be responsible for the application of such knowledge and skill, and must possess an understanding and knowledge of communication (e.g., verbal and written skills).

Additional requirements:
- Use of correct spelling, composition, and grammar in preparation of research publications and reports
- Ability to work with ideas that require extensive thought
- Strong self-expression skills
- Ability to work without following a clear set of rules
- Comfort in working with, communicating with, and teaching people
- Help and provide service to others
- A minimum of 5 years of experience

Work environment:
This position includes the ability to telework. Telework may be performed for as little as one day per week at home though rarely as much as every day. Communication and personal contact in telework may be accomplished through e-mail, telephone, and videoconferencing.

Applicant's resume

Objective: Position as a Sociologist
Name: Morgan Kelsey
Age: 58 (28)

Qualifications:
- 6 years of experience
- Knowledge of group behavior and dynamics, societal trends and influences, human migrations, ethnicity, cultures and their history and origins.
- Skilled writing with respect to the needs of the audience
- Strong ability in spoken communication of information and ideas to ensure understanding
- Experience in analyzing data and other information, including: identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts
- Capability to work and plan with little supervision

APPENDIX O: ITEMS FROM THE BELIEFS ABOUT OLDER

WORKERS SCALE THAT INDICATE AGREEMENT WITH NEGATIVE

ATTITUDES OR AFFECT TOWARDS OLDER WORKERS

Item Number and Description	Percent of participants that agree or strongly agree with item
2. Most companies are unfair to older employees.	47.4%
3. Older employees are harder to train for jobs.	27%
7. Occupational diseases are most likely to occur among older employees.	25.6%
14. Older workers resist change and are too set in their ways	30.2%
15. Younger workers are more interested than older workers in challenging jobs.	37.2%
21. The majority of older employees would quit work if they could afford it.	43.3%
23. Older workers prefer less challenging jobs than those they held when they were younger.	26.5%
24. It is a better investment to train younger workers rather than older workers.	28.9%
37. It is more expensive to provide health care for older employees.	43.7%

APPENDIX P: ITEMS FROM THE FRABONI SCALE OF AGEISM

THAT INDICATE AGREEMENT WITH NEGATIVE ATTITUDES OR AFFECT

TOWARDS OLDER WORKERS

Item Number and Description	Percent of participants that agree or strongly agree with item
1. Teenage suicide is more tragic than suicide among the old.	41%
2. Many old people are stingy and hoard their money and possessions.	27.8%
3. Many old people are not interested in making new friends, preferring instead the circle of friends they have had for years.	33.8%
4. Many old people just live in the past.	32.4%
5. I would prefer not to go to an open house at a senior's club, if invited.	32.7%
7. Most old people are happiest when they are with people their own age.	44%
9. Most old people can be irritating because they tell the same stories over and over again.	29%
10. Old people complain more than other people do.	25.6%
21. It is sad to hear about the plight of the old in our society these days.	90.3%

APPENDIX Q: DESCRIPTIVE STATISTICS FOR ATTITUDES TOWARDS

TELEWORK SCALE

Descriptive Statistics for Experience with Telework

		Mean	Standard deviation	Range	Percent chosen	N
1.	Do workers at your company have the opportunity to telework (e.g., by working at home)?					
	Yes				38.2%	220
	No				52.3%	
	Not sure				0%	
	I prefer not to answer				9.5%	
2.	About what percentage of the workers in your <u>department</u> are involved in telework?					
	Less than 20%				25.5%	220
	Between 20% and 50%				5.0%	
	More than 50%				6.8%	
	I prefer not to answer				1.8%	
	Not applicable				60.9%	
3.	About what percentage of the workers in your <u>company</u> are involved in telework?					
	Less than 20%				21.8%	220
	Between 20% and 50%				10.5%	
	More than 50%				4.5%	
	I prefer not to answer				2.3%	
	Not applicable				60.9%	
4.	How often do you yourself engage in telework? 1=Not at all 5 = All the time	2.49	1.22	1-5		84[a]
5.	How familiar are you with telework as an alternative work arrangement? 1=Not at all 5 = Extremely	3.24	1.16	1-5		84[a]
6.	How often do you interact with other teleworkers in your company? 1=Never 5 = All the time	2.49	.1.0	1-5		74[a]

Descriptive Statistics for Experience with Telework, cont'd.

	Mean	Standard deviation	Range	Percent chosen	N
7. On average, how many days per week do those workers who telework actually do so? 1= 1 Day 5 = 5 Days	2.61	1.45	1-5		82 [a]
8. When did the opportunity for telework in your company first occur?					
Less than 2 years ago				9.1%	220
2-5 years ago				10.9%	
6-10 years ago				4.5%	
Over 10 years ago				5.0%	
Not sure				8.6%	
I prefer not to answer				.9%	
Not applicable				60.9%	
9. How supportive would you say your organization is of telework? 1=Not at all 5 = Extremely	3.20	1.25	1-5		84 [a]
10. The rate of participation in telework by older (55 and older) employees as compared to younger employees is:					
Not at all				2.7%	220
Less than younger employees				8.2%	
About the same				15.5%	
Greater than younger employees				3.6%	
Not sure				8.2%	
I prefer not to answer				.9%	
Not applicable				60.9%	
11. How formalized is telework in your company (e.g., the existence of company or departmental policies about telework?) 1=Not at all 5 = Extremely	2.55	1.20	1-5		82 [a]

Descriptive Statistics for Experience with Telework, cont'd.

	Mean	Standard deviation	Range	Percent chosen	N
12. How are teleworkers trained to perform their job? (Check all that apply)					
Onsite				20.5%	220
Satellite location				5.5%	
Online				8.2%	
Not trained				5.0%	
Not sure				9.5%	
I prefer not to answer				.9%	
Not applicable				60.9%	
13. How are teleworkers kept abreast of changes in company policies or job requirements? (Check all that apply)					220
Face-to-face				20.9%	
Staff meetings				24.1%	
Online messages				30.0%	
Telephone				20.0%	
Postal mail				4.5%	
They are not kept abreast of changes				0%	
Not sure				2.7%	
I prefer not to answer				1.4%	
Not applicable				60.9%	

[a] The total N is based on a sample of 84 participants who indicated that they had the opportunity to telework (A total of 136 participants did not have the opportunity to telework, and thus, did not answer these items)

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