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Engaging the Aging Workforce: The Relationship Between Perceived Age Similarity, Satisfaction With Coworkers, and Employee Engagement

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Business publications and the popular press have stressed the importance of creating conditions for meaningful employee expression in work roles, also known as *engagement*. Few empirical studies, however, have examined how individual or situational factors relate to engagement. Consequently, this study examines the interplay between employee age, perceived coworker age composition, and satisfaction with older (older than 55) and younger (younger than 40) coworkers on engagement using a sample of 901 individuals employed in the United Kingdom. Results indicated that satisfaction with one's coworkers related significantly to engagement. Moreover, perceived age similarity was associated with higher levels of engagement among older workers when they were highly satisfied with their coworkers over 55 and lower levels of engagement when they were not.

Keywords: age, diversity, engagement, similarity, satisfaction with coworkers

Two seemingly unrelated workplace trends could have a considerable conjunctive impact on management. First, the global workforce is aging. In the United States, there are 18.4 million workers age 55 or older, a figure representing 13% of the workforce. By 2015, this number is projected to grow to 31.9 million, or approximately one in every five employees (U.S. General Accounting Office, 2001). Similarly, 41% of the Canadian working population is expected to be between the ages of 45 and 64 by the year 2021 (cf. Lende, 2005). In the United Kingdom, 30% of workers are over 50 (Dixon, 2003). Across the European Union as a whole, the proportion of workers over 50 is expected to rise nearly 25% over the next 15 years ("Turning boomers into boomerangs," 2006).

Simultaneously, the challenge of engaging employees is mounting (Fleming, Coffman, & Harter, 2005; May, Gilson, & Harter, 2004; Pech & Slade, 2006). Kahn (1990) initially defined engagement as "the harnessing of organization members' selves to their work roles" (p. 694). Despite its seeming conceptual overlap with existing constructs such as organizational commitment and job involvement, evidence suggests that engagement is a distinct construct (Hallberg & Schaufeli, 2006). According to a survey of 656 chief executive officers hailing from countries around the world, engaging employees is the fourth most important management challenge, behind creating customer loyalty, managing mergers and alliances, and reducing costs (Wah, 1999). Further illustrating the magnitude of this challenge, the Gallup Organization recently found that nearly 20% of U.S. employees were disengaged and an additional 54% were effectively neutral about their work (see Fleming et al., 2005). The authors estimated disengaged employees to cost U.S. organizations more than $300 billion per year in lost productivity. Furthermore, research by Gallup and Towers Perrin (Momal, 2003; Seijts & Crim, 2006) suggests that employee disengagement is equally problematic in other countries as well. In fact, the latter found that only 14% of more than 85,000 employees across 16 countries were engaged (Aselstine & Alletson, 2006).

Collectively, the impact of these two trends—the graying of the workforce and the growing challenge of engagement—could prove problematic for many employers. The graying of the workforce will increase the amount of age diversity present in most work settings. Accordingly, more age diversity enhances the likelihood of encountering greater age dissimilarity with one's coworkers than was the case for previous generations of employees. Although research has linked age dissimilarity to outcomes such as intent to stay and organizational commitment (cf. Riordan, 2000), the effect of this dissimilarity on engagement is uncertain. Understanding this relationship is important because (a) meta-analytic evidence and other results have shown engagement to predict key outcomes, such as turnover, customer satisfaction and loyalty, safety, and, to some extent, productivity and profitability (Harter, Schmidt, & Hayes, 2002; Salanova, Agut, & Peiró, 2005), and (b) because engagement has a direct effect on performance, whereas the effect of job attitudes such as organizational commitment are indirect (Harrison, Newman, & Roth, 2006).

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The present study, therefore, aims to shed some much-needed light in this regard by assessing the linkage between relational age (i.e., perceived age similarity or dissimilarity) and employee engagement. Moreover, we extend existing work on in-group favoritism and reversals of this effect (e.g., black sheep effect, in-group denigration) to determine how employee age, perceived coworker age composition, and satisfaction with older (older than 55 years of age) and younger (younger than 40 years of age) coworkers collectively influence engagement. In the following sections, we discuss employee engagement and apply and extend the tenets of social identity (Tajfel & Turner, 1986) and self-categorization (Turner, 1987) theories to develop the theoretical rationale underlying our study. Subsequently, the research hypotheses are presented.

Background and Hypotheses

Employee Engagement

Kahn (1990, 1992) is frequently credited as the first scholar to apply the concept of engagement to work. He suggested that employees vary along a continuum with regard to the extent to which they feel able to express their preferred selves in their work role. Those who perceive more supportive conditions for this type of authentic expression tend to be engaged, which allows for full investment in the work role. Those who perceive less supportive conditions tend to be disengaged, which promotes withholding of effort and, ultimately, withdrawal.

Kahn (1990, 1992) argued that employee engagement is contingent on three psychological conditions in the workplace: meaningfulness, psychological safety, and availability. Meaningfulness refers to the intrinsic value employees attach to performance in the work role. It is influenced by the tasks employees perform and the roles they fill (May et al., 2004). Safety pertains to the sense of whether one perceives the freedom to be authentic in the work role. Its primary determinant is the perceived quality of interpersonal interactions employees experience at work (May et al., 2004). Finally, availability involves employees' beliefs regarding whether they possess the physical, cognitive, and emotional resources needed to invest themselves fully in their work roles. It is determined largely by individuals' perceptions of the quantity and quality of available resources and the extent of involvement in activities outside of work (May et al., 2004; Schaufeli & Bakker, 2004). Collectively, these three conditions determine whether employees are more engaged or disengaged (Kahn, 1990).

Subsequent to Kahn (1990, 1992), a number of authors have demonstrated engagement to be an important variable of interest to organizations. Although these scholars have focused on different aspects of the psychological conditions, collectively, the body of work illustrates the value of effectively engaging employees. For instance, Salanova et al. (2005) showed that higher levels of employee engagement corresponded to a more hospitable service climate. Likewise, Harter et al. (2002) conducted a meta-analysis, finding that engagement related positively to customer satisfaction, productivity, and profit and negatively to employee turnover. More recent meta-analytic evidence also indicated significant negative relationships with absenteeism and shrinkage, or unaccounted for, lost merchandise (Harter, Schmidt, Killham, & Asplund, 2006). Thus, employee engagement boosts the bottom line.

Despite this evidence of the importance of engagement, very few empirical studies have investigated its antecedents (cf. Bakker, van Emmerik, & Euwema, 2006). Extending the findings of these few exceptions (e.g., May et al., 2004; Schaufeli & Bakker, 2004), we believe age similarity to one's coworkers could impact engagement. In the next section, we use social identity and self-categorization theories to determine how this variable can influence the conditions identified by Kahn (1990) and thus affect engagement.

Social Identity and Self-Categorization Theories

According to social identity (Tajfel & Turner, 1986) and self-categorization theories (Turner, 1987), individuals classify themselves and others into groups using personally meaningful dimensions. These dimensions may include demographic categories, such as race, gender, national origin, or age. Classifications are important because they are used to draw the distinction between similar and dissimilar others, or in- and out-group members, respectively.[1] Because individuals are motivated to enhance their self-esteem, they generally tend to (a) respond unfavorably to social identity threats, such as discrimination; (b) exhibit bias in favor of in-group members; and (c) seek information affirming identification with their in-groups.

Threats to social identity can take various forms. One such threat is a high degree of dissimilarity to one's coworkers, which is likely to increase identity salience, defined as the extent to which a person's group membership is a central component of his or her self-concept (Thompson, 1999). Increased identity salience, in turn, corresponds to heightened concerns about the valuation of one's identity group (Hogg & Terry, 2000; Randel, 2002). According to Major and O'Brien (2005), one frequent coping strategy is to disengage, which involves psychological or physical withdrawal to avoid further threats to one's identity. Applied in the current context, identity threats resulting from age dissimilarity should enhance the likelihood of employees being disengaged from their work roles, because such threats decrease the likelihood of the employee feeling safe enough to engage.

The tendency toward in-group bias has helped form the basis of the relational demography framework (Tsui & O'Reilly, 1989), which proposes that individuals prefer and respond more favorably to contexts containing greater proportions of in-group members. Research involving race, sex, age, education, and tenure has yielded support for relational demography (Tsui & Gutek, 1999). Demographic similarity of this nature fosters greater perceptions of similarity in values and historical experiences, thus leading to enhanced cohesion (Mehra, Kilduff, & Brass, 1998). It seems the presence of employees whose age is viewed as similar to one's own conveys that age-group identity affirmation is likely, thereby heightening identification with one's coworkers. In turn, this greater identification should relate to greater job meaningfulness and psychological safety (i.e., perceptions that employees are free to expose their "true selves" in performing their work), which are two of the key facilitators of engagement (Kahn, 1990, 1992).

Moreover, age similarity should correspond to an increased likelihood of an employee developing strong friendship ties at

[1] We recognize that in- and out-group distinctions also appear in the leader–member exchange literature. Our use, however, pertains to this type of categorization in social identity processes, as opposed to those associated with leader–subordinate relationships.

work. In fact, evidence indicates age to be second only to race among demographic drivers of social network homogeneity and shows that the overwhelming majority of friendship dyads involve people of highly similar ages (McPherson, Smith-Lovin, & Cook, 2001). Strong, supportive relationships, such as friendships, play a considerable role in employee engagement (Loehr & Schwartz, 2003). Hence, age similarity may help to promote greater engagement through its impact on both identification and friendship networks, which should enhance perceived safety.

The tendency to seek identity-affirming information, however, suggests that similarity alone may be insufficient for determining the effects of perceived age similarity on engagement. For example, what if a large proportion of one's coworkers are similar in terms of age but also happen to be incompetent and generally unsatisfactory? Although relational demography does not account for this additional variable (i.e., satisfaction with in-group coworkers), social identity theory suggests that the tendency toward in-group bias might be reversed in such an instance. Individuals do not act blindly in search of similarity but instead seek identity-affirming similarity. The black sheep effect (Marques, Yzerbyt, & Leyens, 1988), for example, illustrates how evaluations of likable and unlikable in-group members are more polarized than those of likable and unlikable out-group members. In short, the propensity toward in-group bias occurs only when the fellow in-group members in question help to create or maintain a favorable impression of the group. Otherwise, in-group denigration is likely (Bown & Abrams, 2003; Lewis & Sherman, 2003).

The preceding discussion suggests that age similarity should relate to employee engagement. Nonetheless, satisfaction with one's younger and older coworkers could influence engagement as well. The effects of this satisfaction may be both direct and interactive, such that similarity corresponds to higher levels of engagement only when the similar coworkers are perceived favorably. In the next section, we build on this logic to derive the study hypotheses.

Research Hypotheses

Age similarity. Social identity theory and relational demography both suggest that the perceived age composition of one's coworkers should interact with age to influence engagement. Because of its impact on identification, greater employee–coworker age similarity commonly results in more favorable attitudes and behavior. For instance, greater age similarity corresponds to improved technical communication within work groups (Zenger & Lawrence, 1989), less propensity to turnover (O'Reilly, Caldwell, & Barnett, 1989; Sacco & Schmitt, 2005), increased organizational citizenship behavior (Chattopadhyay, 1999; Riordan & Weatherly, 1999), diminished conflict (Jehn, Chadwick, & Thatcher, 1997; Pelled, Xin, & Weiss, 2001), greater involvement (Hobman, Bordia, & Gallois, 2004), higher peer-rated performance (Zalesny & Kirsch, 1989), and enhanced job challenge and person–group fit (Kirchmeyer, 1995). Likewise, age similarity could correspond to heightened employee engagement as well.

In particular, being dissimilar to one's coworkers in terms of age (or merely perceiving oneself to be) makes age more distinctive or salient (Randel, 2002). Consequently, dissimilarity, whether perceived or actual, probably leads employees to pay greater attention to age differences and identify more with their similar-age peers than with their coworkers in general (Chattopadhyay, Tluchowska, & George, 2004; Riordan & Weatherly, 1999). Moreover, coworkers likely perceive employees whose age varies considerably from their own as dissimilar. This perception should result in a weaker sense of shared values and historical experiences, which facilitate identification with coworkers. In sum, age dissimilarity should correspond in less integration and, thus, lower psychological safety and engagement.

It is important for us to formally acknowledge the distinction between actual and perceived coworker age composition. Researchers have used measures of both in the relational demography literature (Riordan, 2000). We opted to use a measure of perceived coworker age composition because it is more consistent with the tenets of social identity theory, self-categorization theory, and relational demography (cf. Riordan, 2000, p. 160), which we used as the bases for our study. According to Harrison and Klein (in press), "such measures are reasonable—even required—when authors seek to test theories specifically addressing *perceptions of differences*" (p. 36).

> *Hypothesis 1:* Perceived coworker age composition and employee age will interact to predict employee engagement such that employee engagement will be higher when employees perceive a greater proportion of coworkers to be of an age similar to their own.

Satisfaction with younger and older coworkers. In addition to the interactive effects of age and perceived coworker age composition, satisfaction with older and younger coworkers could influence employee engagement. Prior research has shown coworker relationships to influence employee attitudes and behaviors. Perhaps more important, this literature suggests that coworker relations also could impact engagement. For instance, an analysis of numerous extensive organizational ethnographies and a survey revealed that when employees got along well with one another, employee–management relations also tended to be better (Hodson, 1997). On the basis of this, Hodson concluded that coworker relations could be a larger determinant of organizational attitudes than previously believed.

Concerning employee engagement in particular, both Kahn (1990, 1992) and subsequent authors have discussed the importance of coworker relations. Harmonious relations with coworkers should foster a sense of psychological safety in work settings, leading employees to feel more secure in exposing their true selves to others in performing their jobs and, thus, to be more engaged. In contrast, poor relations with coworkers should heighten defensiveness, resulting in greater detachment in the work setting. Furthermore, perceiving one's coworkers as supportive has been construed as an important job resource that facilitates the achievement of work goals and correlates significantly with employee engagement (Schaufeli & Bakker, 2004). While previous research has not examined the relationships between satisfaction with younger and older coworkers and employee engagement, some support exists for our general reasoning. For instance, May et al. (2004) reported that individuals with rewarding interpersonal interactions with their coworkers expressed greater psychological safety at work, which was a significant predictor of engagement. Ducharme and Martin's (2000) findings suggest that persons who deem their interpersonal interactions to be emotionally or instrumentally re-

warding, relative to those who do not, should report greater satisfaction with their coworkers. This greater satisfaction, in turn, should lead employees to invest themselves more heavily in their work roles, yielding enhanced engagement (Harrison et al., 2006).

Given the age focus of the present research, we operationalized satisfaction with one's coworkers by targeting colleagues under the age of 40 (i.e., younger) and over the age of 55 (i.e., older). This allowed us to examine the impact of individuals' levels of satisfaction with in- and out-group members. We selected 40 as the cutoff for younger employees because legislation protecting U.S. employees from age discrimination uses this age as the standard. The new age discrimination act enacted in the United Kingdom to comply with the policies of the European Union (which took effect in October 2006) does not set an age standard. We used age 55 because most research suggests it is the age at which employees, and individuals in general, begin to be considered older (Kite, Stockdale, Whitley, & Johnson, 2005; Maloney & Paul, 1989; Morison, Erickson, & Dychtwald, 2006; Noonan, 2005). In fact, Ashbaugh and Fay (1987) reviewed more than 100 studies on older workers and found the mean age for this category to be 53.4 years. In this research, we anticipated facilitative effects of satisfaction with both younger and older coworkers on engagement.

> *Hypothesis 2:* Satisfaction with one's (a) younger and (b) older coworkers will have a positive effect on employee engagement such that higher satisfaction corresponds to higher engagement.

Moderating effects of relevance. Although satisfaction with one's younger coworkers and satisfaction with one's older coworkers should both be important predictors of employee engagement, there is likely to be systematic variation in the magnitude of their effects. For instance, an employee's level of satisfaction with his or her younger colleagues is not particularly relevant in contexts wherein such colleagues are rare. Essentially, since distinctiveness heightens identity salience and the need for identity affirmation, the proportional representation of younger and older coworkers should influence the relationship between an individual's satisfaction with these individuals and engagement.

> *Hypothesis 3:* Perceived coworker age composition will moderate the effect of satisfaction with one's (a) younger and (b) older coworkers on employee engagement. That is, the relationship between satisfaction with one's younger (older) coworkers and employee engagement will be stronger when employees perceive a greater proportion of younger (older) coworkers.

Additionally, an employee's age should make satisfaction with either younger or older colleagues more or less relevant. As predicted by social identity theory, employees are motivated to feel positively about their own age group. Thus, the relationship between satisfaction with one's younger coworkers and engagement may be stronger for younger, relative to older, employees. The opposite is likely true concerning satisfaction with older colleagues. This proposition is consistent with the black sheep effect (Marques et al., 1988), which describes why there is greater variance in reactions to in-group than to out-group members.

> *Hypothesis 4:* Employee age will moderate the effect of satisfaction with one's (a) younger and (b) older coworkers on employee engagement. That is, the relationship between satisfaction with one's younger (older) coworkers and employee engagement will be stronger for younger (older) employees.

Positive versus negative in-group bias. Building further on social identity theory, we suggest that the relational age effect predicted in Hypothesis 1 may depend on an employee's satisfaction with in-group coworkers. This is due to people's identity affirmation motive, whereby they seek to optimize the images associated with in-groups to boost self-esteem (Hogg & Terry, 2000). As mentioned previously, the effects of age similarity (dissimilarity) generally tend to be positive (negative) in the organizational literature. Nonetheless, there are several notable exceptions to this tendency. For instance, though the aforementioned study by Chattopadhyay (1999) showed a positive effect of age similarity on organizational citizenship behavior among older employees, the opposite pattern was reported for younger employees. Other scholars have found positive effects of age dissimilarity on perceived promotional opportunities and on coworker support (Liao, Joshi, & Chuang, 2004; Lichtenstein & Alexander, 2000). In Mexico, age similarity was shown to have a negative impact on relationship quality (Pelled & Xin, 2000). Leonard and Levine (2006) reported age isolation (i.e., dissimilarity) to have a negative impact on turnover, such that more dissimilar employees were less likely to leave their job. Furthermore, though one study (Bacharach & Bamberger, 2004) found that employee–coworker age dissimilarity was associated positively with union commitment, another showed a negative relationship between the two (Iverson & Buttigieg, 1997). This inconsistency suggests that potential moderators need to be examined and has led scholars (e.g., Liao et al., 2004) to call for research that does so.

The preceding discussion leads one to question why similarity corresponds to more favorable outcomes in some instances but less favorable outcomes in others. In their theoretical discussion, Hogg and Terry (2000, p. 127) used social identity and self-categorization theories in conjunction with work on the black sheep hypothesis to explain why in-group members are sometimes rejected. Although similarity often proves useful in identity affirmation and enhancement, this is not the case when other in-group members are deviant or somehow inconsistent with one's image of the in-group. Consequently, these in-group members (also known as black sheep) tend to evoke more extreme negative reactions than out-group members (Marques et al., 1988). For instance, Lewis and Sherman (2003) found that in-group favoritism occurred during personnel selection only when in-group candidates were qualified. When they were not, participants engaged in in-group denigration to protect the image of the in-group.

Even more germane to the present study, individuals perceived antinorm deviant in-group members (i.e., those who rejected group norms or appeared to favor another group) to be significantly less (a) similar to themselves and (b) attractive than pronorm in-group deviants (i.e., those who held an extreme position but still supported group goals) and typical in-group members (Abrams, Marques, Bown, & Henson, 2000; Marques, Abrams, & Serodio, 2001). Moreover, in the study by Abrams et al. (2000), antinorm in-group deviants were rated similar to typical out-group members

(*M*s = 3.22 vs. 3.25, respectively). In the current context, employees are apt to view dissatisfying coworkers whose age is similar to their own as antinorm in-group deviants to help maintain a positive age-group image. The impact of their presence, therefore, should be similar to that of age-dissimilar coworkers. Thus, the effects of similarity proposed in this article could be contingent on how individuals view similarly aged coworkers in the manner specified below:

> *Hypothesis 5a:* There will be a three-way interaction among employee age, perceived coworker age composition, and satisfaction with younger coworkers. Among younger employees, perceived age similarity will correspond to higher engagement when satisfaction with younger coworkers is higher and lower engagement when satisfaction with younger coworkers is lower.

> *Hypothesis 5b:* There will be a three-way interaction among employee age, perceived coworker age composition, and satisfaction with older coworkers. Among older employees, perceived age similarity will correspond to higher engagement when satisfaction with older coworkers is higher and lower engagement when satisfaction with older coworkers is lower.

Collectively, these hypotheses are modeled in Figure 1.

Method

Data and Sample

The Gallup Organization collected the data presented in this article in June 2005. Founded more than 60 years ago, Gallup conducts international polling and provides extensive measurement, consulting, and educational services to a broad array of clients. A total of 1,006 individuals working in the United Kingdom (442 men and 564 women) took part in the telephone-administered survey (response rate = 22.9%). The average participant was 41.64 years of age and earned between £15,000 ($27,680.99) and £25,000 ($46,134.82) per year. Participants were selected via random digit dialing methodology and were asked a variety of questions regarding their perceptions of their workplace. The total population of the United Kingdom in 2005 was approximately 60.2 million people, of which approximately 98% owned a phone (National Statistics, 2006a). The random digit dialing approach utilized by Gallup randomly selected phone numbers from a national phone directory. Those who answered the phone were asked whether the surveyor could speak to the adult whose birthday had passed most recently. Thus, phone numbers were dialed at random and adults within contacted households were selected randomly from the U.K. population.

Accordingly, the demographics of our sample are remarkably consistent with those of the U.K. workforce in terms of age, employment status, and income (Dobbs, 2005; Heap, 2005; National Statistics, 2006b). Women, however, are somewhat overrepresented in our sample (55% vs. 46% of the workforce), which could suggest that more of our respondents were employed in the predominantly female (65%) public sector. Moreover, the sample was composed of a diverse set of industries (e.g., wholesale, construction, finance, agriculture), which suggests that the results should generalize well. Because of missing data on categorical variables and resulting listwise deletion, the usable sample size was 901.

Measures

Perceived coworker age composition. After being prompted to think about "the team of individuals with whom they work most often on their job," participants indicated the age of their cowork-

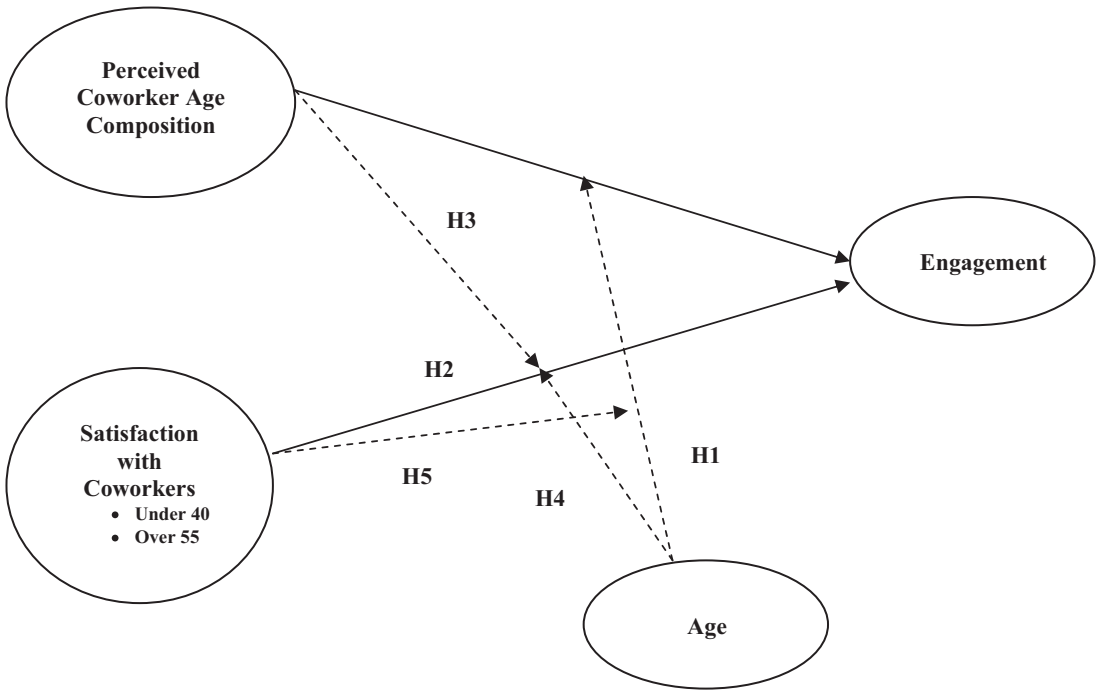

Figure 1. The proposed model. H = hypothesis.

ers by classifying them as (a) mostly older (older than 55 years old), (b) mostly younger (younger than 40 years old), or (c) a mix of older and younger workers. This variable is conceptually similar to relational demography measures used in prior research (e.g., Aquino, Townsend, & Scott, 2001; Burke & McKeen, 1996; Cleveland & Shore, 1992; Ferris, Judge, Chachere, & Liden, 1991; Fields & Blum, 1997; Ragins & Cornwell, 2001; Ragins, Cornwell, & Miller, 2003; Riordan & Shore, 1997) to capture group composition in terms of age, gender, race, tenure, and sexual orientation.

Research indicates that this type of perceptual measure of group age diversity appears reliable and valid. Using a multitrait–multimethod design, McPherson and Rotolo (1995) compared group members' perceptions, group leaders' perceptions, and direct observations of the number of group members below the age of 30. Group size ranged from 2 to 88 members. Their results indicated that the correlation between the trait (i.e., age composition) and respondents' perceptions was .84, compared to .88 for leaders and .81 for direct observation. The authors concluded that each type of measurement introduced some degree of measurement error and that the three appeared to be functionally equivalent. In our study, the majority of respondents perceived the age of their coworkers as balanced ($n = 614$), but a significant number perceived their coworkers to be mostly under 40 (mostly younger; $n = 180$) or over 55 (mostly older; $n = 127$).

To evaluate the construct validity of our coding scheme for this variable, we asked a convenience sample ($n = 20$) to complete a brief survey (see the Appendix). Essentially, these nine items represented a 3×3 design by asking participants to estimate the composition of groups (percentage under 40, percentage ages 41–54, and percentage over 55) described as mostly workers under the age of 40, mostly workers over the age of 55, and mostly a mix of workers under 40 and over 55. Using repeated measures analysis of variance, we examined the effect of age composition and age on the percentage estimated. Common definitions of *mostly* suggest that this term should imply that the referent is the majority, which Kanter (1977) estimated to be about 65%. Thus, we expected the mean percentage estimated for those under 40 (over 55) in groups described as mostly under 40 (over 55) to be approximately 65%. Moreover, these means should be significantly higher than the other two in those conditions. As expected, there was a statistically significant Age Composition $\times$ Age interaction, $F(4, 68) = 32.08$, $p < .01$, $\eta^2 = .65$. Post hoc tests of least significant differences indicated two statistically significant contrasts. In groups described as mostly workers under the age of 40, participants estimated a significantly higher percentage of workers under 40 than workers between 40 and 55 or workers over 55 (69.72% vs. 47.33% and 27.00%, respectively). In groups described as mostly workers over the age of 55, participants estimated a significantly higher percentage of workers over 55 than workers between 40 and 55 or workers under 40 (65.00% vs. 29.83% and 14.17%, respectively). No means were significantly different in the groups described as mostly a mix of workers under 40 and over 55 years of age. Thus, we have some reason to believe the participants in our telephone survey interpreted these category labels in the intended manner.

Age. Participants reported their chronological age in years (range = 18–68).

Satisfaction with younger and older coworkers. The survey contained 12 items similar to those on the Satisfaction With Coworkers subscale of the Job Descriptive Index (Balzer et al., 1997). A meta-analytic investigation of the Job Descriptive Index Satisfaction With Coworkers subscale indicated adequate internal consistency ($M = .85$) and test–retest ($M = .59$) reliabilities (Kinicki, McKee-Ryan, Schriesheim, & Carson, 2002). Our items formed two subscales asking participants to indicate whether the following adjectives described the coworkers they "come in contact with at work" (a) under the age of 40 and (b) over the age of 55: "efficient," "reliable," "focused on excellence," "enthusiastic," "knowledgeable," and "focused on getting promoted." As for the Job Descriptive Index, the response options were *yes* (coded as 3), *no* (coded as 0), and *uncertain* (coded as 1). Item analyses indicated that dropping the final descriptor considerably improved internal consistency for both the younger (.71 vs. .76) and the older coworker (.74 vs. .80) subscales. Whereas the other five descriptors refer to unambiguously positive characteristics, being focused on getting promoted could be interpreted positively or negatively. Consequently, the final item was eliminated.

Employee engagement. The 12 items composing the Gallup Q^{12} (also known as the Gallup Workplace Audit; Gallup Organization, 1993–1998)[2] were used to assess employee perceptions of engagement in their workplace. Although a more detailed description of this instrument and its measurement properties is presented elsewhere in the literature (Harter et al., 2002), we note that these items, which are listed in the Appendix, are antecedents of performance (cf. Harter et al., 2002). In the present study, responses were made on a 5-point Likert scale (1 = *strongly disagree* and 5 = *strongly agree*) and demonstrated acceptable internal consistency (coefficient $\alpha = .88$). For those who responded to some but not all items on this scale ($n = 70$), we performed person-mean imputation to replace missing item values. Evidence suggests that person-mean imputation is a highly effective method for dealing with missing item responses (McDonald, Thurston, & Nelson, 2000; Roth, Switzer, & Switzer, 1999).[3]

It is important to note that each of the Q^{12} items relates to one of Kahn's (1990) three psychological conditions promoting engagement: meaningfulness, psychological safety, and availability. For instance, Items 1 and 3 refer to employees' work roles, which is a component of meaningfulness. Items 4, 5, and 11 refer to management style and process, a component of psychological safety. Item 6 refers to interpersonal relations, also a component of safety. Items 7, 9, and 10 refer to work interactions, which are a component of safety. Item 8 involves meaningfulness in general. Finally, Item 2 refers to resources, which directly affect availability (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Bakker, 2004) and may affect meaningfulness indirectly (i.e., having more resources may be interpreted as having greater worth within the company). Thus, the items capture employee percep-

[2] The engagement scale (Q^{12}) is proprietary and copyrighted by the Gallup Organization. Its scale items cannot be reprinted or reproduced in any manner without the written consent of the Gallup Organization. Copyright 1993–1998, the Gallup Organization, Washington, DC. All rights reserved. Gallup and Q^{12} are trademarks of the Gallup Organization.

[3] We note that conducting the analyses without these imputed cases produced virtually identical results to those presented.

tions of these psychological conditions, thereby "measuring the extent to which employees are 'engaged' in their work" (Harter et al., 2006, p. 9).

Control variables. We anticipated that a number of variables could influence employee engagement. For instance, prior evidence has indicated women to be more engaged than men (Mauno, Kinnunen, Mäkikangas, & Nätti, 2005; Rothbard, 2001; "The gender question," 2001). Workers who have been in their job longer are more likely to have plateaued (Allen, Poteet, & Russell, 1998) and thus may report less engagement than those with less positional tenure. Similar effects could occur for organizational tenure and tenure with one's manager. Evidence suggests that employees of larger organizations tend to be absent more often (Winkelmann, 1999), which could be indicative of less engagement. Part-time employees, because of lower job involvement (Thorsteinson, 2003), are apt to be less engaged than full-time employees. Higher ranking employees and those with more similarity to their coworkers (i.e., race and gender) should report greater engagement than lower ranking or highly dissimilar individuals (Kahn, 1990, 1992). Finally, those with more education may obtain an employment role they consider more psychologically meaningful, which tends to enhance engagement. Thus, we controlled for the effects of gender (0 = *male,* 1 = *female*), tenure (positional, organizational, and with one's manager, in years; 1 = *less than 1*, 2 = *1–3*, 3 = *3–7*, 4 = *7–10*, 5 = *10–15*, 6 = *15–20*, 7 = *20–25*, 8 = *25–30*, 9 = *more than 30*),[4] job rank, job status (0 = *part time*, 1 = *full time*), organizational size (number of employees; 1 = *fewer than 50*, 2 = *50–100*, 3 = *100–500*, 4 = *500–1,000*, 5 = *1,000–5,000*, 6 = *5,000–10,000*, 7 = *more than 10,000 employees*), gender dissimilarity (1 = *mostly similar*, 2 = *gender balanced*, 3 = *mostly dissimilar*), racial dissimilarity (0 = *mostly similar*, 1 = *mostly dissimilar*), and education (1 = *less than General Certificate of Secondary Education/O level*, 2 = *O level or General Certificate of Secondary Education qualification*, 3 = *A level*, 4 = *diploma/Higher National Diploma*, 5 = *vocational qualification*, 6 = *some university, no degree*, 7 = *degree level/university degree*, and 8 = *postgraduate training or professional school after college or university*).

Statistical Analyses

To examine the dimensionality of the Satisfaction With Younger and Older Coworkers and Employee Engagement scale items, we computed confirmatory factor analyses using LISREL 8.30 (Jöreskog & Sörbom, 1993). Adequate fit of factor models is indicated by a nonsignificant chi-square (which is sensitive to sample size), confirmatory fit index (CFI) of .90 or greater, and a root-mean-square error of approximation (RMSEA) of .08 or less. The three-factor model marginally fit the data, $\chi^2(206) = 1{,}279.57$, $p < .001$ (CFI = .87; RMSEA = .08), and modification indexes suggested correlating uniquenesses between Items 3 and 5 of the Satisfaction With Younger Coworkers scale and between Items 1 and 2 of the Engagement measure (see the Appendix for a listing of items). The revised three-factor model provided satisfactory fit, $\chi^2(204) = 988.73$, $p < .001$ (CFI = .90; RMSEA = .07). In contrast, a two-factor model that collapsed items from the two Satisfaction With Coworkers scales onto one factor and loaded Engagement items on the other, $\chi^2(206) = 2{,}488.72$, $p < .001$ (CFI = .76; RMSEA = .12) and a one-factor model, $\chi^2(201) = 3{,}124.57$, $p < .001$ (CFI = .66; RMSEA = .13) both failed to fit the data. Thus, the three survey scales of interest were statistically discernible.

As suggested by prior research (Cleveland & Shore, 1992; Harrison, McLaughlin, & Coalter, 1996), we collected the dependent measures prior to collecting the independent and moderator variables to minimize the potential impact of order effects and percept–percept inflation. Nevertheless, to examine the potential influence of common method variance on study results, we estimated a four-factor method effects model. In this model, each indicator was set to load on a fourth method factor added to the three factors assessed previously. Because of model convergence concerns, factor loadings were constrained to be equal on the fourth factor (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). This model failed to improve fit appreciably beyond the three-factor model, $\chi^2(201) = 831.95$, $p < .001$ (CFI = .91; RMSEA = .06), suggesting that the impact of common method bias on the relationship between these scales was insignificant.

Additionally, we performed a one-way analysis of variance using industry as the independent variable to determine whether there were significant differences in employee engagement across the 19 industrial categories represented in the data set. The effect of industry on engagement was not statistically significant, $F(18, 860) = 1.48$, $\eta^2 = .03$. Therefore, we did not include the 18 dummy variables (excluding one hold-out category) as covariates in our analyses. We should note, however, that doing so did not alter the findings presented, and none of the industry dummies produced a statistically significant effect.

We used hierarchical regression to test the hypotheses. To account for the effects of the nominal variables in the study, we had to select coding schemes to create $k - 1$ variables. For job rank, we created dummy variables for both supervisors and executives (yes = 1, no = 0). In the analyses, the partial coefficients for these variables refer to differences between supervisors and employees and between executives and employees, respectively. For perceived coworker age composition, we created dummy variables for those with mostly younger and age-balanced coworkers (yes = 1, no = 0). In the analyses, these partial coefficients represent differences between the mostly younger and mostly older groups and between the age-balanced and mostly older groups, respectively (Cohen & Cohen, 1983). We entered the individual-level controls in Model 1, age and perceived age composition in Model 2, and the interaction between age and perceived age composition in Model 3. Next, the Satisfaction With Younger and Older Coworkers scales were entered in Model 4, followed by their interactions with age and perceived age composition in Model 5. Finally, the three-way interaction terms (i.e., Age × Perceived Age Composition × Satisfaction) were included in Model 6. Additionally, we replicated these analyses using the general linear model function in SPSS to obtain sums of squared values needed to calculate the classic eta-squared effect size estimates presented in the Results section.

Results

The means, standard deviations, and correlations for all study variables are presented in Table 1. As anticipated, several of the

[4] Ideally, we would operationalize tenure as a continuous variable, but it is Gallup's standard practice to code tenure using these categories.

Table 1
Means, Standard Deviations, and Correlations

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Gender dissimilarity	1.57	0.73	—																
2. Racial dissimilarity	0.16	0.37	.01	—															
3. Organizational size	3.87	2.26	.08*	.07*	—														
4. Organizational tenure	3.71	2.10	−.01	−.05	.22**	—													
5. Tenure with manager	2.40	1.49	−.02	−.01	−.17**	.35**	—												
6. Positional tenure	2.79	1.63	−.06	−.04	−.04	.56**	.38**	—											
7. Executive	0.06	0.23	.02	.00	−.06	.05	.14**	.03	—										
8. Supervisor	0.46	0.50	.07*	.00	.04	.13**	.06	−.01		—									
9. Full-time employee	0.74	0.44	.02	.04	.08*	.03	−.01	−.02	.07*	.19**	—								
10. Female	0.55	0.50	.01	.00	−.03	−.05	−.03	−.02	−.04	−.02	−.37**	—							
11. Education	4.35	2.35	.10**	.03	.06	−.04	−.04	−.11**	.20**	.10**	.11**	−.03	—						
12. Age balanced	0.67	0.47	.03	.01	.10**	.09**	.01	.05	.02	−.01	−.03	.07*	−.06	—					
13. Mostly younger	0.19	0.40	−.01	.05	−.09*	−.12**	−.05	−.10**	−.05	.07*	.03	−.05	.06		—				
14. Age	41.62	11.41	−.04	−.04	.02	.42**	.22**	.39**	.07*	.03	−.05	−.06	−.15**	.05	−.08*	—			
15. Coworker sat—younger	2.26	0.89	.00	.00	−.02	−.08*	−.03	−.09**	.08*	−.02	−.05	.08*	.13**	.06	.02	−.12**	—		
16. Coworker sat—older	2.44	0.80	.04	.05	.06	.05	.02	.02	.04	−.07*	−.06	.08*	−.04	.11**	−.14**	.10**	.08*	—	
17. Engagement	3.61	0.84	.08*	−.06	−.06	−.11**	−.01	−.17**	.05	.05	−.10**	.19**	.05	.05	−.02	−.12**	.29**	.11**	—

Note. $N = 901$. Executive, supervisor, female, mostly younger, and age balanced were dummy coded. sat = satisfaction.
* $p < .05$. ** $p < .01$.

control variables exhibited significant effects on employee engagement in the regression analyses (see Table 2) and, collectively, accounted for a significant amount of variance ($R^2 = .09$). Employees with greater positional tenure were less engaged than those with lower positional tenure ($B = -.09$, $p < .01$; $\eta^2 = .02$). Also, executives ($M = 3.79$, $SD = 0.76$) and supervisors ($M = 3.65$, $SD = 0.80$) reported greater engagement than rank-and-file employees ($M = 3.51$, $SD = 0.89$), as indicated by the statistically significant effects of the executive ($B = .26$, $p < .05$; $\eta^2 < .01$) and supervisor ($B = .13$, $p < .05$; $\eta^2 = .01$) dummy variables. Finally, a significant effect for the female dummy variable ($B = .29$, $p < .01$; $\eta^2 = .03$) indicated that women ($M = 3.79$, $SD = 0.81$) were significantly more engaged than men ($M = 3.50$, $SD = 0.82$).

Hypothesis 1 predicted an Age × Perceived Coworker Age Composition interaction wherein engagement would be greatest for employees whose colleagues were more similar to them in terms of age. This hypothesis was tested in Model 3, in which we added the Age × Perceived Age Composition interaction terms. Neither, however, was significant, nor did the model account for significant incremental variance in engagement ($\Delta R^2 = .00$). Hence, Hypothesis 1 was not supported.

Hypothesis 2 predicted that satisfaction with one's (a) younger and (b) older coworkers would exhibit positive main effects on employee engagement. In Model 4, we added these two variables to the regression equation ($\Delta R^2 = .07$). As anticipated, there were significant positive effects of satisfaction with younger ($B = .23$, $p < .01$; $\eta^2 = .06$) and older colleagues ($B = .09$, $p < .01$; $\eta^2 = .01$), such that those who reported greater satisfaction with their coworkers also tended to report greater engagement. Thus, Hypothesis 2 was supported.

Hypotheses 3 and 4 predicted that perceived age composition and age, respectively, would moderate the effects of satisfaction with (a) younger and (b) older coworkers on employee engagement. In Model 5, we added the 6 two-way interaction terms to the regression equation ($\Delta R^2 = .02$). Two of the four hypothesized interactions between perceived age composition and coworker satisfaction were statistically significant: Mostly Younger × Satisfaction With Younger Coworkers ($B = .19$, $p < .05$; $\eta^2 = .004$) and Mostly Younger × Satisfaction With Older Coworkers ($B = -.33$, $p < .01$; $\eta^2 = .008$). Subgroup follow-up analyses to these interactions (see Figure 2 for a graphic illustration following the procedures outlined by Cohen & Cohen, 1983) indicated that the relationship between satisfaction with younger coworkers and engagement was stronger when employees perceived their coworkers as mostly younger ($B = .30$, $p < .01$; $\eta^2 = .11$) versus mostly older ($B = .14$, *ns;* $\eta^2 = .02$). Additionally, the relationship between satisfaction with older coworkers and engagement was weaker when coworkers were perceived as mostly younger ($B = -.06$, *ns;* $\eta^2 = .00$) as opposed to mostly older ($B = .30$, $p < .01$; $\eta^2 = .06$). Thus, Hypothesis 3 received support.

Concerning Hypothesis 4, one of the two proposed Age × Satisfaction interactions on engagement was significant: satisfaction with older workers ($B = .01$, $p < .01$; $\eta^2 = .01$). Follow-up analyses showed that the relationship between satisfaction with older coworkers and engagement was significant for older ($B = .29$, $p < .01$; $\eta^2 = .05$) but not younger employees ($B = -.02$, *ns;* $\eta^2 = .00$). See Figure 3 for a graphic illustration. Consequently, Hypothesis 4 received partial support.

Table 2
Summary of Regression Analyses Predicting Employee Engagement

	Step 1			Step 2			Step 3			Step 4			Step 5			Step 6		
Variable	B_1	*SE*	95% CI	B_2	*SE*	95% CI	B_3	*SE*	95% CI	B_4	*SE*	95% CI	B_5	*SE*	95% CI	B_6	*SE*	95% CI
Gender dissimilarity	0.07	0.04	0.00, 0.14	0.07	0.04	0.00, 0.14	0.07	0.04	−0.00, 0.14	0.07	0.04	0.00, 0.14	0.08*	0.04	0.01, 0.15	0.08**	0.04	0.01, 0.15
Racial dissimilarity	−0.14	0.07	−0.30, 0.00	−0.14	0.07	−0.29, 0.00	−0.14	0.07	−0.29, 0.00	−0.15*	0.07	−0.29, −0.01	−0.12	0.07	−0.26, 0.02	−0.13	0.07	−0.26, 0.01
Organizational size	−0.02	0.01	−0.04, 0.01	−0.02	0.01	−0.05, 0.01	−0.02	0.01	−0.05, 0.01	−0.02	0.01	−0.05, 0.00	−0.02	0.01	−0.04, 0.01	−0.02	0.01	−0.04, 0.01
Organizational tenure	−0.01	0.02	−0.04, 0.03	0.00	0.02	−0.04, 0.03	0.00	0.02	−0.04, 0.03	0.00	0.02	−0.03, 0.03	0.00	0.02	−0.04, 0.03	−0.01	0.02	−0.04, 0.03
Tenure with manager	0.03	0.02	−0.02, 0.07	0.03	0.02	−0.01, 0.07	0.03	0.02	−0.02, 0.07	0.02	0.02	−0.02, 0.06	0.02	0.02	−0.02, 0.06	0.02	0.02	−0.02, 0.06
Positional tenure	−0.09**	0.02	−0.13, −0.05	−0.08**	0.02	−0.12, −0.04	−0.08**	0.02	−0.12, −0.04	−0.08**	0.02	−0.12, −0.03	−0.07**	0.02	−0.11, −0.03	−0.07**	0.02	−0.11, −0.03
Executive	0.26*	0.13	0.01, 0.51	0.27*	0.13	0.03, 0.52	0.27*	0.13	0.03, 0.52	0.20	0.12	−0.04, 0.44	0.19	0.12	−0.05, 0.42	0.20	0.12	−0.04, 0.43
Supervisor	0.13*	0.06	0.02, 0.24	0.13*	0.06	0.02, 0.25	0.14*	0.06	0.02, 0.25	0.14**	0.06	0.03, 0.25	0.13*	0.06	0.02, 0.24	0.13*	0.06	0.02, 0.24
Full time	−0.12	0.07	−0.25, 0.02	−0.13	0.07	−0.26, 0.01	−0.12	0.07	−0.26, 0.01	−0.10	0.07	−0.23, 0.03	−0.07	0.07	−0.20, 0.06	−0.07	0.07	−0.20, 0.06
Female	0.29**	0.06	0.18, 0.40	0.28**	0.06	0.16, 0.39	0.28**	0.06	0.16, 0.39	0.25**	0.06	0.13, 0.36	0.25**	0.06	0.14, 0.36	0.25**	0.06	0.14, 0.36
Education	0.01	0.01	−0.02, 0.03	0.01	0.01	−0.02, 0.03	0.01	0.01	−0.02, 0.03	0.00	0.01	−0.03, 0.02	0.00	0.01	−0.03, 0.02	0.00	0.01	−0.03, 0.02
Y				0.01	0.10	−0.18, 0.20	0.01	0.10	−0.18, 0.20	−0.02	0.09	−0.20, 0.17	−0.01	0.10	−0.20, 0.17	0.03	0.10	−0.16, 0.22
AB				0.10	0.08	−0.06, 0.26	0.11	0.08	−0.05, 0.26	0.04	0.08	−0.12, 0.19	0.05	0.08	−0.10, 0.21	0.08	0.08	−0.08, 0.23
Age				−0.01	0.00	−0.01, 0.00	0.00	0.01	−0.01, 0.01	0.00	0.01	−0.01, 0.01	0.00	0.01	−0.01, 0.01	−0.01	0.01	−0.02, 0.01
Y × Age							−0.01	0.01	−0.02, 0.01	0.00	0.01	−0.02, 0.01	0.00	0.01	−0.01, 0.02	0.00	0.01	−0.01, 0.02
AB × Age							−0.01	0.01	−0.02, 0.01	−0.01	0.01	−0.02, 0.01	0.00	0.01	−0.02, 0.01	0.00	0.01	−0.01, 0.01
SYC										0.23**	0.03	0.17, 0.29	0.12	0.07	−0.03, 0.27	0.12	0.08	−0.03, 0.26
SOC										0.09**	0.03	0.03, 0.16	0.27**	0.10	0.08, 0.46	0.30**	0.10	0.11, 0.49
Y × SYC													0.19*	0.10	0.00, 0.39	0.20*	0.10	0.00, 0.39
Y × SOC													−0.33**	0.12	−0.56, −0.10	−0.36**	0.12	−0.59, −0.13
AB × SYC													0.11	0.08	−0.05, 0.27	0.12	0.08	−0.05, 0.28
AB × SOC													−0.12	0.11	−0.33, 0.09	−0.16	0.11	−0.37, 0.05
Age × SYC													0.00	0.00	−0.01, 0.01	0.00	0.01	−0.02, 0.01
Age × SOC													0.01**	0.00	0.00, 0.02	0.03**	0.01	0.02, 0.05
Y × SYC × Age																0.01	0.01	−0.01, 0.03
Y × SOC × Age																−0.02*	0.01	−0.04, 0.00
AB × Age × SYC																0.00	0.01	−0.01, 0.02
AB × Age × SOC																−0.03**	0.01	−0.05, −0.01
ΔR^2		.09**			.01			.00			.07**			.02**			.01*	
R^2		.09			.10			.10			.17			.19			.20	

Note. $N = 901$. Coefficients are unstandardized. Executive, supervisor, female, mostly younger (Y), and age balanced (AB) are dummy coded. CI = confidence interval; SYC = satisfaction with younger coworkers; SOC = satisfaction with older coworkers.
* $p < .05$. ** $p < .01$.

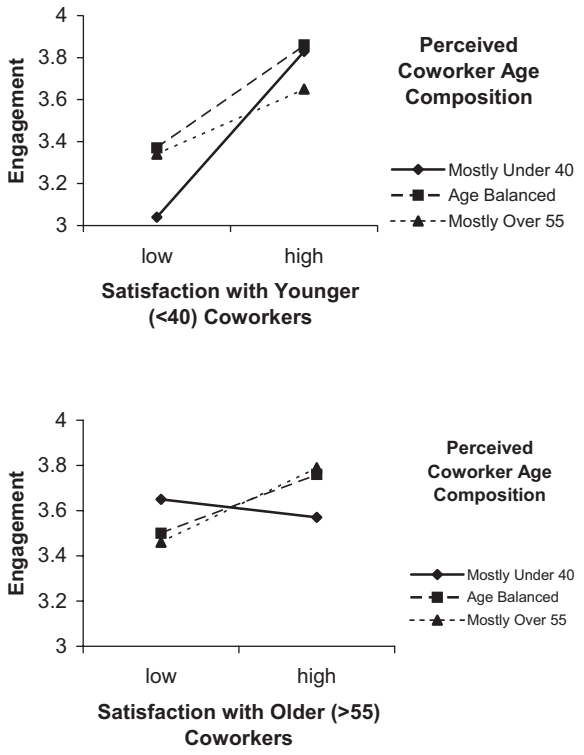

Figure 2. The interactive effects of perceived coworker age composition and satisfaction with younger (younger than 40) and older (older than 55) coworkers on employee engagement.

Finally, Hypothesis 5 predicted three-way interactions among age, perceived age composition, and coworker satisfaction influencing engagement. Model 6 presented the tests of this hypothesis ($\Delta R^2 = .01$). Two of the proposed interactions were significant: Age × Mostly Younger × Satisfaction With Older Coworkers ($B = -.02$, $p < .05$; $\eta^2 = .004$) and Age × Age Balanced × Satisfaction With Older Coworkers ($B = -.03$, $p < .01$; $\eta^2 = .008$). For younger employees, there were no significant differences in engagement by perceived age composition and satisfaction with older coworkers. Conversely, older employees exhibited significantly different relational age effects depending on their satisfaction with older coworkers. Looking at the graphic illustration provided in Figure 4 shows that the pattern of relational age effects was consistent with that predicted by Hypothesis 5b. Namely, age similarity corresponded with higher levels of engagement when similarly aged coworkers were deemed satisfactory and lower levels of engagement when they were not.

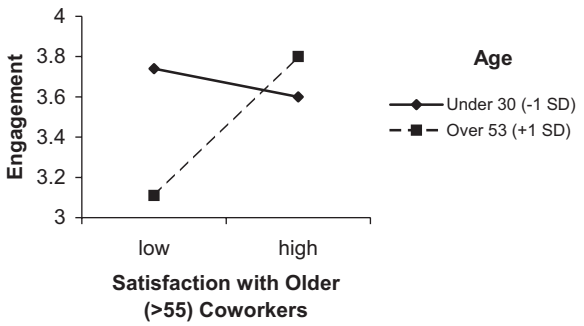

Figure 3. The interactive effect of employee age and satisfaction with older (older than 55) coworkers on engagement.

Though the effect sizes for our interactions appear small by conventional standards, recent research by Aguinis, Beaty, Boik, and Pierce (2005) suggests otherwise. They reviewed articles that appeared in the *Journal of Applied Psychology, Personnel Psychology,* and the *Academy of Management Journal* from 1969 to 1998 that employed moderated multiple regression to test categorical moderators and found that the median and 75th percentile effect sizes (modified f^2) for these interactions were .002 and .005, respectively. One can compute traditional f^2 by dividing the classic eta-squared value by the amount of variance in the outcome variable not accounted for by the model ($1 - R^2$). Thus, classic eta-squared values (as we report) are more conservative than f^2 in moderated multiple regression. Moreover, interactions involving categorical moderators (e.g., our perceived age composition variable) often violate the homogeneity of error variance assumption, which tends to downwardly bias traditional f^2 values (Aguinis et al., 2005). This led Aguinis et al. to create a formulaic modification to account for this problem. For an illustration of this difference, consider our Perceived Coworker Age Composition × Satisfaction With Older Coworkers interactions (Hypothesis 3). Because categorical variables must be coded with $k - 1$ dummy

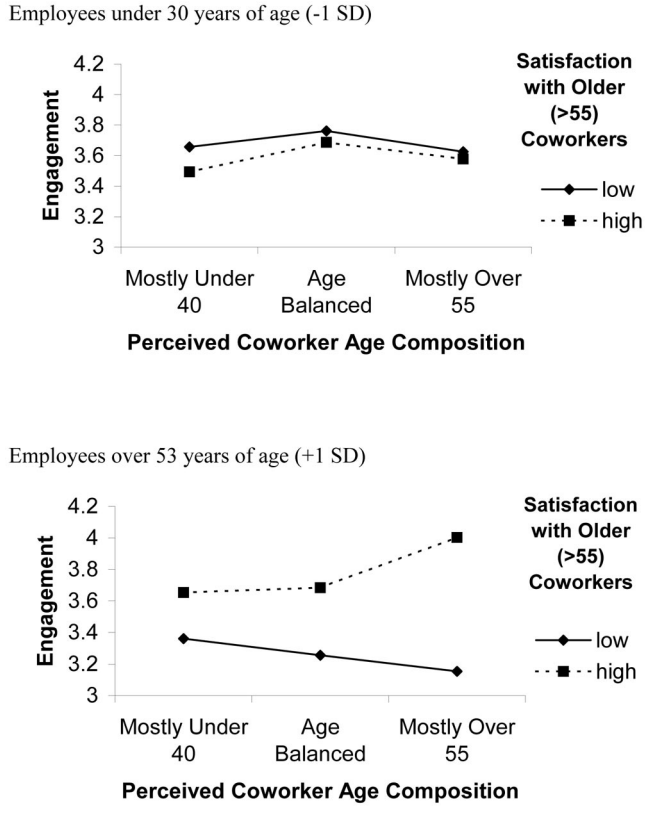

Figure 4. The interactive effects of employee age, perceived coworker age composition, and satisfaction with older (older than 55) coworkers on engagement.

variables, we had two effect sizes for this one interaction: Mostly Younger × Satisfaction With Older Coworkers and Age Balanced × Satisfaction With Older Coworkers. Summing the effect sizes for these two interactions yielded the combined interactive effect of perceived coworker age composition and satisfaction with older coworkers on employee engagement. At .012, the modified f^2 value (computed online at http://carbon.cudenver.edu/~haguinis/mmr/fsquared) was 33% larger than the classic eta-squared (.009). Consequently, our interactions accounted for more variance than most research involving categorical moderators using moderated multiple regression in these premier applied psychology and management outlets, which suggests that they "should probably not be taken lightly" (Aguinis & Pierce, 2006, p. 441).

Discussion

In this study, we sought to clarify the relationship between perceived employee–coworker age similarity and engagement. Toward this end, the results provide a number of important findings. First, levels of satisfaction with older and younger coworkers related significantly to engagement. Those who were more satisfied with their colleagues younger than 40 and older than 55 years of age also tended to report greater engagement. Second, age similarity and engagement were linked more closely among older than among younger employees. Moreover, the nature of this effect for older employees was contingent on satisfaction with their fellow older colleagues. On the one hand, greater perceived employee–coworker age similarity corresponded to greater engagement when satisfaction was higher. On the other hand, perceived similarity related inversely to engagement when satisfaction was lower. We discuss the implications of these findings and the limitations of this study in detail below.

Practical and Research Implications

For practitioners, our results suggest that perceived age similarity relates significantly to engagement of older employees. As Morison et al. (2006) discussed, engaging middle-aged and older employees appears to be a relative shortcoming in many workplaces. Our results show that dissatisfying coworkers (particularly those over 55) have a deleterious effect on the engagement of older employees. One way managers can combat this tendency is to promote a culture of competence around strengths and opportunities to learn and grow (Buckingham & Coffman, 1999). Moreover, it is of utmost importance to ensure that older employees who are retained by the company are perceived as proficient in their job performance. Otherwise, their impact on the company is apt to be twofold. First, when the perception is accurate, their lack of proficiency detracts directly from overall performance. Second, whether accurate or not, their perceived ineptitude may cause other older employees to become disengaged, thereby indirectly resulting in further performance shortcomings. In creating such a culture of competence, however, firms should exercise caution not to discriminate on the basis of age.

Our results also have implications for workforce planning. As mentioned at the outset of this article, a considerable segment of employees around the world are approaching the conventional age of retirement. Unfortunately, the labor supply in other age categories to replace these workers appears insufficient (Dychtwald, Erickson, & Morison, 2006). Consequently, Dychtwald et al. (2006) suggested three ways to engage mature employees (those over 55) to prevent them from leaving: eliminating bias against older employees, instituting flexible retirement options, and advocating reforms in pension and benefits laws. Our findings identify an additional tactic—surrounding mature employees with satisfying coworkers—to help facilitate engagement, which has a significant negative impact on turnover (Harter et al., 2006). Although this might seem somewhat intuitive, at least some evidence indicates that organizations may have room for improvement in this regard. For instance, Dychtwald et al. (2006) recently found that "well under 50 percent (of surveyed employees) say that their work includes collaboration with bright and experienced people" (p. 209).

The relationship between satisfying younger and older coworkers and employee engagement is also practically meaningful. As Hodson (1997) noted, "our understanding of the role of coworker relations in the workplace is still quite limited" (p. 448). Our results indicate that the presence of younger and older coworkers who were perceived as proficient workers related to employees feeling engaged in their work roles. This finding somewhat corroborates Demerouti et al.'s (2001) job demands–resources model of burnout, which states that job resources (i.e., tools or people that support the accomplishment of work tasks) are related positively to engagement. It is also consistent with the sense-making model offered by Wrzesniewski, Dutton, and Debebe (2003), wherein they proposed that employees use interactions with their coworkers as cues to surmise the meaning of their work. Consequently, we urge managers to follow the suggestions of Axelrod, Handfield-Jones, and Michaels (2002) and devote particular attention to identifying underperformers and taking corrective action (i.e., training, reassignment, or dismissal) before they adversely influence mid- and high-level performers.

For researchers, our results suggest that the effects of perceived age similarity (and perhaps other types of perceived similarity as well) on workplace attitudes and behaviors are quite complex. Although there was no Age × Perceived Age Composition interaction, there was a significant higher order interaction involving these variables. Merely working with others of a seemingly similar age does not necessarily correspond to higher employee engagement. Rather, one's similar peers must be satisfactory workers. This effect, however, appears to be significant only for older employees.

The complexity of these perceived age similarity effects suggests that the simpler effects proposed by relational demography may need to be amended to include the impact of perceptions of others, such as satisfaction with similar coworkers. Perhaps the previously described inconsistency in the effects of age similarity stems from researchers' failure to consider individuals' perceptions of similar others. Our results, in conjunction with those of Lewis and Sherman (2003), suggest that perceived similarity may correspond with in-group favoritism only when similar others are regarded favorably. This seems to imply that older workers, often a stigmatized group, possess an identity affirmation motive that influences their engagement. When dissatisfying in-group colleagues compromise this motive, older personnel tend to be disengaged, perhaps to avoid potentially damaging in-group affiliations. Ultimately, this process may represent older workers' strategy of refuting negative stereotypes about their competence in the workplace. This somewhat resembles the logic underlying Chattopdhyay et al.'s (2004) proposition that members of low-status (negatively perceived) groups sometimes seek identity affirmation through affiliation with high-status (favorably perceived) groups. It is of interest to determine whether members of other

stigmatized identity groups (e.g., minorities, women, gays and lesbians, and the disabled) utilize a similar process.

Limitations and Future Research Directions

As is the case with any study, there are limitations to the conclusions that can be drawn from these results. Perhaps most notable is that all data were self-reported, which suggests that same-source bias could have impacted our results (Podsakoff et al., 2003). However, a four-factor method effects model failed to improve fit appreciably beyond our hypothesized three-factor model involving the two scales that produced the largest effects on engagement. Moreover, most of our findings involved interactions, which are less likely to result from same-source bias than are main effects. Also, the telephone data collection format utilized helped to reduce respondents' ability to reevaluate their previous responses and engage in consistency bias. Although some recent evidence suggests that concerns about common method variance may be overstated (Spector, 2006), we encourage subsequent research nevertheless to utilize multiple sources when possible to avoid this potential confound.

Another prospective limitation involves the measures used in this study. Our perceived age composition measure asked respondents to categorize their coworkers as mostly younger than 40, mostly older than 55, or a balanced mix of younger and older coworkers. A more precise way to operationalize this construct could entail using company records to calculate the exact proportion of coworkers who fall into the younger, middle age, and older categories. Our theoretical basis, however, was social identity theory, which pertains to people's perceptual classifications of themselves and others, suggesting that our measures should tap participants' perceived similarity, as opposed to actual similarity (Harrison & Klein, in press). Consequently, we contend that our measure of perceived age composition (as well as the measures for sex and race/ethnicity used as controls) was well suited to test our hypotheses. Nonetheless, future studies might investigate the effects of actual similarity on engagement. Additionally, our perceived coworker age composition measure had participants focus on those in their workgroups, whereas our satisfaction with younger and older coworkers measures did not. We cannot be sure what impact, if any, this difference might have had on our results. We also did not have information on the size and nature of the workgroups our participants used as their mental referents when responding to this item. Though relational demography studies (e.g., Chattopadhyay, 1999; O'Reilly et al., 1989; Pelled et al., 2001; Riordan & Shore, 1997; Tsui et al., 1992) have varied extensively in the size of units analyzed (means ranging from 4 to over 800) and function and have found neither to have any consistent effects on outcomes, we cannot surmise whether these factors had any influence in our study.

Additionally, our sampling strategy made it impossible for us to measure and control for age norms, which Lawrence (1988) defined as "widely shared judgments of the typical ages of individuals holding a role or status" (pp. 309–310). Such age norms could influence the effects of perceived age similarity. Lawrence (1987), however, showed that age norms vary considerably from company to company. Thus, our random sampling approach should have minimized their impact in this study. Nonetheless, it is possible that unmeasured age norms could have influenced our results.

We also found it intriguing that there was less of a relationship between perceived age similarity and engagement among younger employees. In some ways, this result is consistent with prior research that has found asymmetric effects of age dissimilarity for younger and older employees (Chattopadhyay, 1999). Although we further explicated relational age effects amongst the latter, we are uncertain why there was no effect of perceived age composition amongst the former. Perhaps age is less salient to young employees because it is a relatively uncommon basis for them to perceive employment discrimination. Alternatively, low age salience amongst the young could be due to their membership in a nonstigmatized age group (Deaux, Reid, Mizrahi, & Ethier, 1995) or the realization that they are in, or are soon to be in, the prime age category (Garstka, Schmitt, Branscombe, & Hummert, 2004). Future inquiry might focus on clarifying why the effects of age similarity on outcomes such as organizational citizenship behavior and engagement seem to differ for younger and older employees.

Conclusion

There are key strengths of this research that should be highlighted. First, the data were drawn nationally, which means that the effects cannot be attributed to nuances of a single organization. Second, the sample was large and diverse in terms of age and sex, with the demographics appearing to be generally representative of the United Kingdom as a whole. Third, the findings make an important contribution to the literature. Among older employees, the relationship between perceived age similarity with their peers and their workplace engagement appeared to be stronger than among younger employees. Our results suggest that organizations can capitalize on the prospective value added by older workers (see Peterson & Spiker, 2005) by surrounding aging employees with efficient, reliable, knowledgeable, and enthusiastic peers. Doing so should create psychological conditions in the workplace to increase their engagement, which should aid in decreasing turnover, absenteeism, and employee theft and enhancing customer service, safety, and performance (Harter et al., 2006).

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Appendix

Items From the Measures Used in the Study

Employee Engagement (Gallup Q^{12})

1. I know what is expected of me.
2. I have the materials and equipment I need to do my work right.
3. At work, I have the opportunity to do what I do best every day.
4. In the last seven days, I have received recognition or praise for doing good work.
5. My supervisor, or someone at work, seems to care about me as a person.
6. There is someone at work who encourages my development.
7. At work, my opinions seem to count.
8. The mission or purpose of my company makes me feel my job is important.
9. My associates or fellow employees are committed to doing quality work.
10. I have a best friend at work.
11. In the last six months, someone at work has talked to me about my progress.
12. This last year, I have had opportunities at work to learn and grow.

Satisfaction With Coworkers

This measure was administered separately for those under 40 and over 55 years old.

1. Efficient
2. Reliable
3. Focused on excellence
4. Enthusiastic
5. Knowledgeable

Pilot Study Questionnaire

1. If you were told a group was made up of mostly workers under the age of 40, what percentage would you estimate to be under the age of 40?
2. If you were told a group was made up of mostly workers under the age of 40, what percentage would you estimate to be between the ages of 40 and 55?
3. If you were told a group was made up of mostly workers under the age of 40, what percentage would you estimate to be over the age of 55?
4. If you were told a group was made up of mostly workers over the age of 55, what percentage would you estimate to be under the age of 40?
5. If you were told a group was made up of mostly workers over the age of 55, what percentage would you estimate to be between the ages of 40 and 55?
6. If you were told a group was made up of mostly workers over the age of 55, what percentage would you estimate to be over the age of 55?
7. If you were told a group was made up mostly of a mix of workers under 40 and over 55, what percentage would you estimate to be under the age of 40?
8. If you were told a group was made up mostly of a mix of workers under 40 and over 55, what percentage would you estimate to be between the ages of 40 and 55?
9. If you were told a group was made up mostly of a mix of workers under 40 and over 55, what percentage would you estimate to be over the age of 55?

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