Relationship Between Age and Promotion Orientation Depends on Perceived Older Worker Stereotypes

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Objectives. Research has consistently revealed a negative relationship between chronological age and promotion orientation, that is, the motivational orientation toward approaching possible gains. In addition, experimental research has demonstrated that activating positive self-relevant stereotypes (e.g., for men, the stereotype that men are good at math) can stimulate increases in promotion orientation. Integrating and applying this research to the work context, we hypothesized that the relationship between age and promotion orientation would depend on employees’ perceptions of the stereotype of older workers in their work context, such that there would be no negative relationship between age and promotion orientation when individuals perceive a more positive older worker stereotype.

Method. We analyzed the relationships between age, perceived older worker stereotype (POWS), and promotion orientation using a sample of working adults (N = 337) aged 19–64 years.

Results. Results revealed a significant age by POWS interaction such that there was a negative relationship between age and promotion orientation when POWS was less positive. However, there was no relationship between age and promotion orientation when POWS was more positive.

Discussion. Results suggest that the negative relationship between age and promotion orientation depends on contextual factors such as POWS.

Key Words: Images of aging—Motivation—Older worker stereotypes—Plasticity—Promotion orientation—Work context.

Background
Relative to younger adults, older adults tend to be chronically less oriented toward approaching possible gains (promotion orientation; Higgins, 1997) as demonstrated by studies using a wide variety of operationalizations (Ebner, 2005; Ebner, Freund, & Baltes, 2006; Freund & Ebner, 2005; Heckhausen, 1997; Heckhausen, Dixon, & Baltes, 1989; Heckhausen & Krueger, 1993; Ogilvie, Rose, & Heppen, 2001). We argue that the negative age difference in promotion orientation does not constitute a natural law of aging but is rather influenced at least in part by contextual factors. In this vein, we investigated whether an individual’s perception of the stereotype of older workers in his or her work context (i.e., organization) might moderate age differences in promotion orientation. Previous experimental research has demonstrated that activating positive self-relevant stereotypes stimulates increases in promotion orientation (Seibt & Förster, 2004). On the basis of this experimental research, we hypothesized that with increasing age, a more positive perceived older worker stereotype (POWS) might likewise be associated with higher promotion orientation as the POWS becomes more self-relevant. We therefore hypothesized that the age–promotion orientation relationship might be moderated by POWS, such that higher age would not be related to lower promotion orientation when POWS was more positive.

Method
Sample
Data were collected between 2008 and 2009 from two production companies in Germany (Company A: automobile components; Company B: scientific and industrial weighing equipment). Three hundred thirty-seven employees representing 36 work teams completed a paper-and-pencil questionnaire. Age ranged from 19 to 64 years (mandatory retirement was at 65 years). Forty-two percent of the employees were employed in manual jobs. Approximately one third (30.9%) had a tertiary degree and approximately one quarter (27.6%) were women (Supplementary Appendix).

Measures
Age.—Employees reported their year of birth.

POWS.—We used the Psychological Age Climate Scale (PACS) to measure POWS specific to an individual’s work context (Nouck, Bowen, & Staudinger, 2009). The scale consists of the lead-in “older workers (>45) in my work team are seen as...” followed by a list of 10 positive adjectives: cooperative, reliable, loyal, prepared to learn, productive, creative, risk-taking, competent, flexible, and goal-oriented (Cronbach’s α = 0.90). Employees used a...
Participants indicated the extent to which an item reflected (Steverink, Westerhof, Bode, & Dittmann-Kohli, 2001) generalized expectations with regard to one’s aging in the future including experiences of age-related changes and also genetic differences, that is, how individuals perceive their own aging process, using the Positive and Negative Affect Schedule (PANAS) (Cunningham et al., 2005). The items were as follows: I focus on opportunities that will enhance my life; I am primarily motivated by seeking potential successes (Cronbach’s α = 0.42). Answers could range from 1 (strongly disagree) to 4 (strongly agree).

Perceived younger worker stereotype.—We controlled for perceived younger worker stereotypes (PYWS) to increase confidence that any potential relationships between POWS and promotion orientation were specific to perceptions of the image of older workers as opposed to perceptions of the social environment more generally. The PYWS scale was the same as the POWS scale except that the lead-in was, “Younger workers (<30) in my work team are seen as...” (Cronbach’s α = 0.88). The PYWS and POWS scales were separated in the questionnaire to avoid contrast effects.

Positive affect.—We statistically controlled for positive affect to control for common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Employees used an adapted Positive and Negative Affect Scale (PANAS) to report the frequency with which they had experienced 10 positive emotions (e.g., enthusiastic, relaxed; Kessler & Staudinger, 2009) at the workplace over the last few weeks (Cronbach’s α = 0.83). Answers could range from 1 (never) to 5 (very often).

Table 1 displays all variable means, standard deviations (SD), and intercorrelations.

Control Variables
Tenure.—We statistically controlled for tenure as a potential confound for age. Respondents reported the number of years they had worked in the company.

Prevention orientation.—In line with other research on regulatory orientation (e.g., Higgins et al., 2001), we statistically controlled for prevention orientation, that is, the motivational orientation toward avoiding losses (Higgins, 1997). Prevention orientation was measured with a two-item scale (Cunningham et al., 2005). The items were as follows: I focus on ensuring that I will avoid potential mishaps or negative events; I am primarily motivated by avoiding failure (Cronbach’s α = 0.74). Answers could range from 1 (strongly disagree) to 4 (strongly agree).

Promotion orientation.—Promotion orientation was measured with a translation of the two-item scale from Cunningham, Raye, and Johnson (2005). This measure proved as valid as longer measures in a comparative assessment (Farb & Cunningham, 2005; as cited in Cunningham et al., 2005). The items were as follows: I focus on opportunities that will enhance my life; I am primarily motivated by seeking potential successes (Cronbach’s α = 0.42). Answers could range from 1 (strongly disagree) to 4 (strongly agree).

Aging self-perceptions.—We used seven items from Wurm and colleagues (2007) with two additional items from the German Aging Study (Tesch-Römer, Wurm, Hoff, & Englster, 2002) to control for aging self-perceptions, that is, how individuals perceive their own aging process, including experiences of age-related changes and also generalized expectations with regard to one’s aging in the future (Steverink, Westerhof, Bode, & Dittmann-Kohli, 2001). Participants indicated the extent to which an item reflected their expectations for their own cognitive, physical, and social development (Cronbach’s α = 0.66). An example item was as follows: To me, aging means that I am still able to learn new things. Answers could range from 1 (disagree) to 4 (agree).

Data Analysis Strategy
Missing data.—None of the variables had more than 10% missing values. Missing values were imputed with the expectation–maximization (EM) algorithm (SPSS 19), which uses with maximum likelihood estimation and produces less biased results than either listwise deletion or pairwise deletion (Allison, 2009).

Statistical analysis.—The data were analyzed with HLM 6.06 software in order to account for the non-independence of the participants within teams (Raudenbush, Bryk, & Congdon, 2004). Company affiliation was statistically controlled with a dummy variable on the team level. In the empty model, the random intercept term was not significant (p > .50); thus, all analyses were conducted using fixed intercepts and slopes.

First, we entered prevention orientation on the individual level as well as age and tenure on both the individual and work-team level (e.g., team average age, team average tenure) to separate individual from contextual effects (Chan, 1998). There were no problems with model convergence (i.e., collinearity problems) when both age and tenure were included in the model. Next, we entered the images of aging variables (i.e., POWS; aging self-perceptions and PYWS as controls) and positive affect. We calculated an age by POWS interaction with terms centered around their grand means (Aiken & West, 1991). The Age × POWS variable...
Results

The results of the HLM analysis are available in Table 2. In the final model, there was no direct relationship between age and promotion ($B = −0.01$, $p = .18$) or between POWS and promotion ($B = 0.06$, $p = .33$). However, there was a significant relationship between the promotion and the age by POWS interaction ($B = 0.01$, $p = .03$). As displayed in Figure 1, promotion orientation was lower at higher ages for employees with a less positive POWS (1 SD below the mean; $B = −0.01(0.004)$, $t = −2.003$, $p = .05$). In contrast, there was no relationship between age and promotion orientation among employees with a very positive POWS (1 SD above the mean; $B = −0.0001(0.004)$, $t = −0.014$, $p = .99$). All else held equal, for a 50-year-old respondent, perceiving a very positive POWS was associated with promotion orientation approximately 1/3 SD higher relative to an age-peer who perceived a less positive POWS. The results of further analyses can be found in the Supplementary Appendix.

Discussion

It is a common part of individuals’ images of aging that older people are less oriented toward growth and improvement goals than younger people (Ebner, Riediger, & Lindenberger, 2009). However, in our research, there was a negative relationship between age and promotion orientation only among working adults who had less positive POWS (see Figure 1). Our results suggest that having more positive POWS can help working adults maintain promotion orientation. Maintaining promotion orientation seems to be especially important in the context of longer working lives. For instance, promotion focus is longitudinally related to how many new goals, plans, and opportunities individuals believe they have in their future (Zacher & de Lange, 2011), which in turn has been associated with increased work motivation and performance (Zacher, Heusner, Schmitz, Zwierzanska, & Frese, 2010).

Our results are consistent with the previous research which has demonstrated that the salience of a self-relevant positive stereotype can stimulate higher promotion orientation (Seibt & Förster, 2004). Our results extend previous descriptive research on older worker stereotypes (e.g., Bal, Reiss, Rudolph, & Baltes, 2011) and complement the literature on the effects of situational (vs. chronic, as in this study) activation of positive age stereotypes (e.g., Meisner, 2012). Our results also support a contextual perspective on development (e.g., Baltes, Lindenberger, & Staudinger, 2006; Kessler & Staudinger, 2006) by demonstrating that promotion orientation is related to contextual factors such as POWS. Notably, we used a general as opposed to a work domain–specific measure of promotion orientation. We would expect to find even stronger relationships between POWS and work domain–specific promotion orientation, given that the effects

Table 1. Variable Mean, Standard Deviations, and Intercorrelations

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>39.89</td>
<td>10.60</td>
<td>.68*</td>
<td>.23</td>
<td>.38</td>
<td>.05</td>
<td>.00</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>Tenure</td>
<td>10.61</td>
<td>10.29</td>
<td>.68*</td>
<td>.13</td>
<td>.38</td>
<td>.05</td>
<td>.00</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>POWS</td>
<td>2.89</td>
<td>0.48</td>
<td>.23*</td>
<td>.13</td>
<td>.38</td>
<td>.05</td>
<td>.00</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>ASP</td>
<td>3.00</td>
<td>0.38</td>
<td>.23*</td>
<td>.13</td>
<td>.38</td>
<td>.05</td>
<td>.00</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>PYWS</td>
<td>2.91</td>
<td>0.48</td>
<td>.23*</td>
<td>.13</td>
<td>.38</td>
<td>.05</td>
<td>.00</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>Positive affect</td>
<td>3.00</td>
<td>0.56</td>
<td>.23*</td>
<td>.13</td>
<td>.38</td>
<td>.05</td>
<td>.00</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>Prevention</td>
<td>3.10</td>
<td>0.74</td>
<td>.23*</td>
<td>.13</td>
<td>.38</td>
<td>.05</td>
<td>.00</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>Promotion</td>
<td>3.18</td>
<td>0.54</td>
<td>.23*</td>
<td>.13</td>
<td>.38</td>
<td>.05</td>
<td>.00</td>
<td>.22</td>
<td></td>
</tr>
</tbody>
</table>

Notes. POWS = perceived older worker stereotype; ASP = aging self-perceptions; PYWS = perceived younger worker stereotype; $M =$ variable mean; $SD =$ standard deviation.

$*$p $\leq$ .05.

Table 2. Results of the HLM Analyses

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>t ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>3.09**</td>
<td>0.06</td>
<td>52.63</td>
</tr>
<tr>
<td>Main variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>−0.01</td>
<td>0.00</td>
<td>−1.35</td>
</tr>
<tr>
<td>POWS</td>
<td>0.06</td>
<td>0.06</td>
<td>0.97</td>
</tr>
<tr>
<td>Age × POWS</td>
<td>0.01*</td>
<td>0.00</td>
<td>2.17</td>
</tr>
<tr>
<td>Control variables</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Prevention</td>
<td>0.16*</td>
<td>0.04</td>
<td>3.86</td>
</tr>
<tr>
<td>Tenure</td>
<td>−0.01*</td>
<td>0.00</td>
<td>0.99</td>
</tr>
<tr>
<td>Positive affect</td>
<td>0.06</td>
<td>0.06</td>
<td>0.99</td>
</tr>
<tr>
<td>ASP</td>
<td>0.32*</td>
<td>0.07</td>
<td>4.51</td>
</tr>
<tr>
<td>PYWS</td>
<td>0.04</td>
<td>0.06</td>
<td>0.72</td>
</tr>
<tr>
<td>Team-level control variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team age</td>
<td>−0.01</td>
<td>0.01</td>
<td>−1.63</td>
</tr>
<tr>
<td>Team tenure</td>
<td>0.00</td>
<td>0.01</td>
<td>−0.32</td>
</tr>
<tr>
<td>Companyb</td>
<td>0.14</td>
<td>0.09</td>
<td>1.52</td>
</tr>
</tbody>
</table>

Notes. POWS = perceived older worker stereotype; ASP = aging self-perceptions; PYWS = perceived younger worker stereotype. There were 325 degrees of freedom for all variables.

aVariable was group-mean centered.
bVariable was uncentered. All other variables were grand-mean centered.

*p $\leq$ .05. **p $\leq$ .001.
of activated age stereotypes tend to be strongest when the stereotype content corresponds to the outcome domain (stereotype matching effect; Levy & Leifheit-Limson, 2009).

**Limitations**

Although we used a previously validated scale to measure promotion orientation, the alpha value was rather low in the current sample. Replication of the current results with a different measure of promotion orientation would help to confirm our results.

Our cross-sectional data limit our ability to infer causality or directionality in the relationship between POWS and promotion orientation, and we cannot separate possible cohort effects from developmental processes. Cross-sequential longitudinal designs would be needed in order to establish the causality of POWS on changes in promotion orientation over time (Baltes & Nesselroade, 1970).

Our sample of working adults, particularly older working adults, is most likely a selective sample of relatively robust individuals who have survived a rather old age–unfriendly labor market, given that the employment rate for older adults in Germany is rather low and retirement is mandatory at age 65 (see Supplementary Appendix). Furthermore, it is plausible that working adults have higher promotion orientation than the general population. The selectivity of our sample may imply that the effects of POWS on promotion orientation are actually more dramatic when less resilient and less promotion-oriented individuals as well as employees aged 65 and older are taken into account. Because we only had two companies in the sample, we cannot be sure that our results extend to other organizational environments. Our results may be specific to Germany. For instance, the relationship between POWS and promotion orientation might be different in countries where a greater or smaller proportion of the older population participates in the labor market (i.e., working older adults are less/more of a selective sample) and/or in countries in which psychological factors (such as POWS) versus physical health factors might be more important determinants of the relationship between employees’ age and promotion orientation.

**Suggestions for Future Research**

Future research should investigate the mediating mechanisms underlying the current results. We expect that the extent to which one perceives a positive image of older workers in the work context should be correlated with various factors associated with motivational orientation, including time perspective in the work context (e.g., Ebner et al., 2006; Zacher & de Lange, 2011), the expected likelihood of success in the work context (cf. Brandstädter, 1998; Idson, Liberman, & Higgins, 2000), and the salience of potential negative or positive outcomes in the work context (Seibt & Förster, 2004). Research on the mediating mechanisms might reveal specific ways in which organizations can help support aging employees maintain promotion orientation. For instance, it might be easier for organizations to influence employees’ time perspective (e.g., by changing retirement policies) than to influence employees’ overall POWS.

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**Supplementary Material**

Supplementary material can be found at: http://psychsocgerontology.oxfordjournals.org/

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**References**


