Age-Based Stereotype Threat and Negative Outcomes in the Workplace:

Exploring the Role of Identity Integration

Abstract

Previous studies have shown that the presence of age-based stereotypes in the workplace is often associated with lower levels of work engagement and adjustment among older employees. This study examines possible mediators and moderators of this relationship using data from a sample of 2348 older (age > 50) employees at the Italian national rail company. We test a model in which the effects of age-based stereotype threat on organizational involvement, future time perspective and psychological well-being are mediated by work-age identity integration (how much individuals see their age and organizational identities as compatible and blended). Secondly, we explored whether these effects are moderated by gender and job status. Results indicate that age-based stereotypes are associated with negative outcomes for employees' work and personal adjustment, and that these relationships are partially mediated by variations in work-age identity integration.

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Stereotype threat is the concern that others are evaluating you through the lens of negative group-based stereotypes (Steele, 1997). It has been shown, for instance, that even simply being reminded of one's membership in a group that traditionally underperforms in a particular area of competence leads to a series of negative outcomes. Over the past two decades, hundreds of studies have demonstrated that stereotype threat has a pervasive and negative effect on individual performance, attitudes, motivations and well-being (Casad & Briant, 2016). Studies on this topic have focused on threats related to different group membership – such as gender, race, and age – in diverse social contexts (Spencer, Logel & Davies, 2014). While in certain studies - typically those using an experimental approach - the size and impact of the effects of stereotype threat on performance have been contested (e.g. Flore and Wicherts, 2016; Finnigan & Corker, 2016, Stricker and Ward, 2012), the literature continues to suggest that feelings of threat associated with the activation of negative beliefs linked to one's social category are likely to lead to adverse consequences. Given the predominance of age-related stereotypes in the workplace (Posthuma & Campion, 2009), stereotype threat is a useful framework for understanding psychosocial processes related to ageing in this area.

Older adults are often stereotyped as inflexible, frail, incompetent, out of touch, and slow (Posthuma & Campion, 2009). Consequently, it comes as no surprise that older employees are susceptible to stereotype threat in their workplace. These negative psychological effects of age-based stereotypes in the workplace may ultimately result in costly organizational and economic losses. Favoring a positive ageing process in the workplace, and understanding processes related to age stereotype threat are important for several reasons (Posthuma & Campion, 2009). First, the workforce is rapidly ageing in most

of the industrial nations (Feyrer, 2007; Lieber, 2007), thus, it is likely that age-based stereotype threats will become more widespread and affect more workers in the future (Walker, 1999). Second, age-based stereotype threats could discourage older workers from remaining in the workforce or hinder their motivation to commit to their job (Edward & Peccei, 2010; Brooke & Taylor, 2005). In the current economic climate, most of the industrial economies need older employees to remain in the workforce longer to both reduce the strain on the retirement systems and to carry on making financial contributions (Walker, 2007).

The accumulated research evidence suggests that older adults are susceptible to the performance impairing effects of age-based stereotype threat (von Hippel, Kalokerinos, & Henry, 2015). Meisner's (2012) meta-analysis revealed that these performance decrements emerged across a range of cognitive domains (e.g., memory) as well as physical tasks (e.g., physical competencies). A more recent meta-analysis of 32 articles by Lamont, Swift and Abrams (2015) found that older adults are particularly susceptible to underperformance when their cognitive performance is evaluated.

Moreover, following Steele's (1997) suggestion that chronic experiences of stereotype threat should lead people to disengage from the stereotyped domain over time, a smaller body of research has demonstrated that older employees who experienced stereotype threat at work are less satisfied with their jobs, less committed to their employer, and report more work-related mental health issues (von Hippel, Kalokerinos & Henry, 2013). However, despite the importance of this topic, research examining the negative outcomes of ageing stereotype threat with regard to work engagement and adjustment continues to be scarce. Furthermore, little attention has been given to the specific psychological processes underlying this phenomenon.

The literature on stereotype threat has identified a variety of mediators which could explain the detrimental effect of stereotype threat on individuals (Spencer et al., 2014), but

these mediation hypotheses have rarely been applied to the specificity of age-based stereotype threat (Lamont, Swift, & Abrams, 2015). Another neglected issue is the degree to which the relationship between age-based stereotype threat and individual outcomes is moderated by social and contextual factors, such as membership of other groups. As stated by Posthuma and Campion (2007), research on age stereotype threat often fails to examine the interactive effects of multiple group membership on ageing stereotypes.

The present study aimed to address these neglected issues. Our first aim was to test a model in which the effect of age-based stereotype threat on individual outcomes is mediated by identity processes. In particular we focus on work-age identity integration, or the degree to which an employee sees her/his age and organizational identities as congruent vs. discordant (see Figure 1). Secondly, taking into account workers' multiple group memberships, we explored possible differences in the effects of age-based stereotype threat according to gender and job status.

Identity Integration as Mediator Between Stereotype Threat and its Negative Outcomes.

Some studies in the stereotype threat literature have examined identity processes as mediators of the relationship between stereotype threat and underperformance. When facing stereotype threat, individuals experience a sense of threat to their relevant identity, which may lead them to resort to identity separation as a coping mechanism–e.g., separating one's identity as a woman from one's identity as an employee (Spencer et al., 2016; von Hippel, Walsh and Zouroudis, 2011). Indeed, Settles (2004) has shown that when faced with a discriminatory environment at work, women scientists may feel the impulse to separate their threatened female identity from their professional identity. On the one hand this may reduce the perceived threat by isolating the social identity to which negative stereotypes are attached from their workplace identity, but on the other hand, it leads to problematic outcomes (lower levels of performance and well-being). von Hippel and colleagues also showed that identity

separation mediated the relationship between gender stereotype threat and negative job attitudes and intention to quit among employed women (von Hippel, Issa, Ma & Strokes, 2011) and well-being at work (von Hippel, Sekaquaptewa, & McFarlane, 2015).

In this study, we aim to replicate this finding in the context of age-based stereotype threat. There is consensus among scholars from different perspectives that identity processes play a key role in the successful adaptation to the ageing process (Withbourne, Sneed & Skultety, 2002). It is argued that the best coping strategy to ageing successfully is to flexibly integrate age-related changes (such as changes in physical appearance and functioning – e.g. presbyopia; changes in health condition, etc.) into one's identity while simultaneously not losing one's sense of self as consistent over time (Withbourne et al., 2002). Despite this, when facing age stereotype threat in their workplace, older workers are likely to cope with this experience by separating their work and age identities, thus failing in this important task of integration.

In analyzing these identity-related mediational processes, the present study relies on the theoretical framework of Bicultural Identity Integration developed by Benet-Martinez (BII; Benet-Martinez & Haritatos, 2005), and adapts it to the context of age and work social identities. BII has been found particularly useful in understanding challenges and opportunities involved in the management of different ethno-cultural identities among multicultural individuals. The concept of BII captures whether an individual is able (or willing) to successfully synthesize her/his diverse ethnic-cultural identities into the self-concept, and involves two independent and yet theoretically related constructs: harmony vs. conflict and blendedness vs. distance. Harmony captures the feeling that one´s different identity components are compatible (vs. feeling torn between one's two identities), while blendedness vs. distance captures the perception that one's two identity components can be combined into a new whole (vs. keeping them separate and dissociated). Generally, high

scores on BII indicate that the individual experiences different parts of his/her identity as compatible and blendable, whereas low scores are indicative of experiencing them as conflictual and disparate.

The validity of BII as a psychologically consequential construct has been well-established over the past decade (for a review see Benet-Martinez, Lee, & Cheng, in press; Benet-Martínez, 2012). The BII framework has been also applied to the study other forms of identity integration beyond culture and ethnicity, such as sexual orientation-gender (Koc & Vignoles, 2016) and work-gender (Cheng, Burks, & Lee, 2008). This work provides consistent evidence for the association between identity integration and positive outcomes. For example, Cheng, Burks and Lee (2008) showed that high work-gender identity integration in female engineering students is associated with more creative performance. Identity integration between gender and professional identities in male-dominant organization also affects attention and behavioral tendencies of female workers (Sacharin, Lee, & Gonzalez, 2009). Furthermore, in Wallen, Mor and Devine's (2014) study with male nurses, gender and professional identity integration was positively associated with job satisfaction and organizational commitment, as well as with perceived respect in the organizational context.

Much has been said recently about the importance of understanding how individuals manage their multiple social identities, and the benefits (and challenges) of this experience with regard to important individual, social, organizational outcomes (Kang & Bodenhausen, 2015). Nevertheless, few studies have examined identity integration for work-relevant identity domains other than gender. This is unfortunate given the evidence showing that basic social identity categories such as age, ethnicity, or sexual orientation (in addition to gender) play a key role in the many of the everyday transactions occurring at the workplace, from verbal and non-verbal communicative and behavioral scripts, to organizational power

dynamics and performance-related attributions (Madera, King, Hebl, 2012). To our knowledge, the integration between age and work identity has never been studied before, although one could reasonably argue that it may work like gender-work identity integration when trying to understand individual outcomes in the workplace.

Generally speaking, high work-age identity integration would be described as the feeling that one's age fits well (or at least doesn't clash) with one's job, including its organizational culture and environment, and that getting older may even enrich one's work identity. On the contrary, lack of age-work integration could involve the perception that one's age and work identity are to be dissociated from each other and a feeling of dissonance between one's age and holding a meaningful place in the world of work. Thus, senior workers who experience age-based stereotype threat are likely to perceive a higher conflict between their age and worker identities, and this lack of identity integration may in turn explain a series of negative work and personal outcomes. Thus, we hypothesize that taking into account age-work identity integration will illuminate the relationship between age-based stereotype threat and individual outcomes in the workplace (see Figure 1).

Gender and Employment Status as Moderators in the Relationship between Stereotype Threat and its Negative Outcomes

Posthuma and Campion (2007), in a review of 117 articles addressing the topic of age stereotype in the workplace, identify potential unanswered questions for future research. Among these, they mention the interactive effects of age stereotypes due to multiple group membership. The same claim has been recently made by scholars within the framework of intersectionality theory (e.g. Cleverand, Huebner, & Hanscom, 2017). Intersectionality theory suggests that diversity categories – such as gender, social status, race, sexual orientation, and age – interact on multiple and often simultaneous levels. Thus, research that treats demographic groups (e.g., older individuals) as homogenous may miss important variability

in the meaning and implications of that particular variable across other aspects of a person's social identity.

Scholars from different fields of research highlight the value of adopting a gendered approach when studying ageing (e.g. Bennet & Zaidi, 2016). This is also of crucial importance when studying ageing in the workplace. Murphy and Cross (2017) claim that factors related to age combined with one's gender play a critical role in shaping work and labour market experiences. This is particularly true after the age of 50, when the cumulative effect of inequality experienced by women at earlier stages of their career and the experience of age-based stereotype threat results in a more disadvantaged situation for them to face (Murphy & Cross, 2017). Indeed, research by Duncan and Loretto (2004) revealed that women experience more age discrimination than men and a recent study by Neumark, Burn and Button, (2015) found that age discrimination starts at a younger age for women. They also found robust evidence of age discrimination in hiring women, with considerably less evidence of age discrimination against men, suggesting that this is more profound for women.

In a study where age stereotypes of older people were examined in relation to gender in different domains, Kornadt, Voss and Rothermund (2013) show that older men were rated more positively than older women in the domains of finance management and work, although this difference was driven by the perceptions of middle age and older raters.

Despite the gendered nature of age-related stereotypes in the work domain, there is also some evidence that older women experience the overall aging process and its challenges more positively than men. Gulbrandsen and Walsh (2015) found that, compared to older men, older women reported that overcoming adversity provided an opportunity for positive personal growth or improved quality of life for them (e.g., recovering from depression, greater self-awareness). Results suggested that older women find a way to accept, adjust to, recover from, and move beyond adversity by mobilizing internal and external resources.

Thus, in line with this literature on older women's resilience and the aforementioned studies on gender rates for age stereotyping, in our study we propose that men and women will not only differ in the degree of age-based stereotype threat they experience in the work domain, but also in the implications that these experiences have for them. In particular, we hypothesize that women in our study will report higher levels of stereotype threat, but that the impact of stereotype threat on identity and on individual outcomes will not necessarily be greater for them.

Together with gender, we also took into consideration job status. Previous studies have tested the hypothesis that also job status could have an impact on experiences of age-based stereotype threat (von Hippel et al., 2013). This work revealed lower levels of stereotype threat among older employees who occupied higher status positions within their organizational hierarchy, suggesting that not all older employees are equally susceptible to stereotype threat. We thus expect to replicate these findings in our study. Moreover the relationship between stereotype threat and identity integration might differ as a function of job status. For example, stereotypes about older adults being frail and slow suggests that manual workers should be particularly susceptible to age-based stereotype threat. Alternatively, if we follow Lamont, Swift, and Abrams (2015)'s meta-analysis showing that stereotype threat effects on performance are larger among older adults and for cognitive domains, we should expect that managers will be more susceptible to the negative effects of age-based stereotypes. However, we should be cautious in making predictions based on the aforementioned meta-analysis, given that it is based on a review of studies that examined the effects of stereotype threat manipulations on work performance (vs. work attitudes such as work disengagement). Additionally, the mean age of participants in the studies reviewed in Lamont, Swift, and Abrams (2015)'s meta-analysis was 70 years old, which is quite older than the mean age of the ageing workforce population. In fact, agening intervention in Italian

companies are usually aimed at employers between 51 and 67 years old. Thus, even tough the literature points to job status as a possible moderator of the association between age-based stereotype threat and its negative outcomes, we do not have any particular prediction about the direction of this moderation effect.

The Social and Organizational Context of this Study

In order to test our model we surveyed older employees at the main national rail company in Italy (Ferrovie dello Stato Italiane), a public-sector organization of more than 60.000 employers representing a great variety of job tasks and distributed across the entire Italian territory. Current demographic data shows that Italy has one of the oldest populations in the world, with the highest proportion of older adult people and the lowest proportion of young people and that this trend is set to continue in the future (OECD, 2017). The ageing index (i.e. the ratio of population older than 60 to those who are 0-14 years old) has dramatically increased in the decade from 2004 to 2013, reaching 161.4% in 2016, i.e. there are 161 older individuals for every 100 children. Consequently, workforce aging is a relevant and urgent challenge for work organizations in Italy, which are supposed to support the well-being of their aging workers while at the same time improve their commitment at work. At the same time, in this scenario where the workforce ageing is relatively a recent phenomenon, older worker's image could be far from stereotypical view of a performing worker, and thus the integration of age and work identity could be a difficult task for the Italian employers.

In our study, we examine the negative impact of age-based stereotype threat by focusing on two different but related outcomes: individual and work adjustment. Previous studies have indeed shown detrimental effects of stereotypes and discrimination in the workplace on these two domains (Brooke & Taylor, 2005; Edward & Peccei, 2010; Pavalko, Mossakowski, and Hamilton, 2003). To assess individual adjustment we focused on the concept of flourishing in that it proposes a broader idea of well-being that is not reduced to

mere positive effect or positive mood. Measures of flourishing have been particularly useful in order to assess well-being in several research projects that have investigated adult development and psychological aging (for a review see Ryff, 2014). Studies have shown that flourishing is positively associated with a longer life expectancy and a more active ageing process in that it promotes higher levels of civic engagement, productivity and self-efficacy (Seligman, 2011). As for work related outcomes, we analyzed organizational involvement and future time perspective. Organizational involvement consists of the feelings of attachment to the organization for its own sake rather than for its strictly instrumental value and behaviours related to job commitment (Cook & Wall, 1980). It has been defined as a high level of effort in the job on behalf of the organization (Porter, Steers, Mowday, & Boulian, 1974). Future time perspective is defined as the perceived opportunities at work and the time at work for the remainder of individuals' employment (Zacher & Frese, 2009). This dimension has been theoretically linked to job motivation (Seijts, 2010) and analysed in several studies on ageing in the workplace as a crucial dimension in order to understand the presence of older workers regardless of the organizational context in which they are placed. In particular future time perspective has been found to be associated with enhanced motivation, deep conceptual learning, better performance, and greater persistence (Simons, Vansteenkiste, Lens, & Lacante, 2004).

Aims and Hypotheses

The aim of this study is to explore mediators and moderators of the relationship between age-based stereotype threat and work and individual adjustment. Based on the above rationale we tested the following hypotheses in an ecological setting of senior workers: 1. Age-based stereotype threat is negatively associated with flourishing, organizational involvement and future time perspective;

2. Age-work identity integration mediates the relationship between age-based stereotype threat and flourishing, organizational involvement and future time perspective.

In testing these hypotheses we controlled for age as a possible intervening variable.

Moreover we also expected that reports of stereotype threat would differ according to gender and job status and in particular that:

3. Women report higher levels of stereotype threat.

4. Employees who occupied higher status positions report lower levels of stereotype threat.

Finally we explored a possible moderation effect of gender and job status in the mediated relationship (through age-work identity integration) between age-based stereotype threat and flourishing, organizational involvement and future time perspective. We did not formulate any particular prediction for the direction of these effects.

Method

Participants and procedure

Through the Human Resources Office of Ferrovie dello Stato Italiane we contacted via email 8606 of its employees, all of whom were 51 years old or older. The email introduced the study "Talenti senza età" (Ageless Talents), a national study lead by the Catholic University of Milan which examines the work conditions of older employees across several organizations. This email contained a link to an anonymous online survey. Of the 8606 employees contacted, 2348 completed the questionnaire, resulting in a sample that was representative of the total population of the Company in terms of geographic distribution. Our final sample comprised 931 men (mean age = 58, SD = 3.7) and 1417 women (mean age = 57.5, SD = 3.6). Note that this study conforms to recognized ethical standards (e.g. US Federal Policy for the Protection of Human Subjects) and all persons gave their informed consent prior to their inclusion in the study. A copy of anonymized raw data is stored in

authors' Qualtrics institutional accounts. In addition to the physical copies that the authors store in their computer, all the script and syntax files are stored in authors' Dropbox account. Data belongs to Ferrovie dello Stato Italiane and access can be requested via the corresponding author.

Measures

Stereotype threat: Perceptions of age-based stereotype in the workplace were assessed with von Hippel et al.'s (2013) measure. This 5-item scale was originally developed to measure stereotype threat among African Americans (Steele & Aronson, 2005), and was subsequently adapted to assess perceived age-related stereotyping in the workplace (e.g., "Some of my colleagues feel that I have less ability because of my age", "Some of my colleagues believe that I am not as committed to my career because of my age"). Participants responded using a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha coefficient for this scale was .75.

Identity integration: Work-age identity integration was measured with a new 8-item scale adapted from the Bicultural Identity Integration Scale–Version 1 (BIIS-1; Benet-Martínez & Haritatos, 2005), an instrument that assesses individuals' perceptions regarding the compatibility of their different ethno-cultural identities. Each item from the BISS-1 scale was rewritten to tap into similar perceptions regarding organizational and age-related identities. This measure included items relating to two different components of identity integration: the degree of overlap vs distance experienced between the two identities (e.g. "I keep being part of my organization and my age separate", reverse code), and the degree of harmony vs conflict (e.g "I feel that there's no conflict between being part of my organization and my age"). Participants rated each statement on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Following Manzi, Ferrari, Rosnati and Benet-Martinez's method (2014), an overall work-age identity integration score was obtained using

the product of these two components (A low level of work-age identity integration index indicated high conflict and high distance between these two identities; while a high level indicated high harmony and high overlap. The Pearson's correlation coefficient between the two components was .21, $p < .001$.

Organizational involvement: To measure organizational involvement we used the Organizational Involvement subscale of the Organizational Commitment Scale (Cook & Wall, 1980; 3 items with 5 response options ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Example items are: *"I'm not willing to put myself out just to help the organization,* "To know that my own work had made a contribution to the good of the organization would please me.". The Cronbach's alpha coefficient was for this subscale was .72.

Future Time Perspective Occupational (FTP)*:* Future time perspective in relation to work and retirement was measured using a 3 item adapted version (Bal et al., 2015) of the future time perspective scale (Lang & Carstensen, 2002). Bal et al. (2015) changed the words 'in the future' with 'until my retirement', and added 'in my work' to reflect the context of work. Example items are: "I expect to set a lot of new work goals before my retirement." and "I feel I have a lot of time left till retirement". Participants rated each statement on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The Cronbach's alpha coefficient for this scale was .74.

Flourishing: The 8-item Flourishing Scale developed by Diener et al. (2010) was used to measure psychological well-being and optimal human functioning. Example items are "I actively contribute to the happiness and well-being of others", and "I lead a purposeful and meaningful life". Items were scored on a 7-point scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Cronbach's alpha for this scale was = .88.

Job status: Participants self-reported employment status through the classification of workers under the Italian labor law (art.2095, Codice Civile Italiano) which differentiates

levels of job status (usually corresponding to decreasing levels of income and time flexibility). Response options were: supervisors (quadri); clerks (impegati); manual workers (operai). In our sample, 37 % of participants were supervisors, 54.5 % were clerks and 8.5 % were manual workers. Compared with the actual distribution of the Ferrovie dello Sato company in the period when the survey was filled out (23.8 % were supervisors, 62.9 % were clerks, and 13.3 % were manual workers) we could see that supervisors were slightly over-represented whereas clerks and manual workers were marginally underrepresented.

Results

Means, standard deviations, and bivariate correlations for study variables for the total sample are shown in Table 1. All bivariate correlations were in the expected direction. Moreover, age was positively associated with the perceived age-based stereotype, and negatively associated with work-age identity integration, organizational involvement and future time perspective.

Mediation Analyses

In order to test our first and second hypotheses, we performed a path analysis utilizing a single observed score for each construct tested in the model, utilizing the R package Lavaan (Rosseel, 2012). Path coefficients were estimated using the maximum likelihood method, and the non-parametric bootstrapping method (based on 2000 replications) was used to calculate standard error and confidence intervals of indirect effects (Cheung & Lau, 2008; Shrout & Bolger, 2002). Multivariate analyses began with testing direct and indirect (through work-age identity integration) association between age-based stereotype threat and the three outcomes variable in a just identified model with 0 degree of freedom (Figure 1). All the estimated paths of this model were significant. Figure 1 shows path coefficients and R^2 of the proposed model. Following Lenzi and colleagues (2012; see also Joreskog & Sorbom, 1996), to evaluate the goodness of fit our just identified model we considered the R^2 of each

endogenous variable. The squared multiple correlations for the endogenous variables indicate that the model explains a significant portion of our variables' variance: 13% (95% CI [11%, 16%]) of the variance in work-age identity integration, 18% (95% CI [15%, 21%]) in organizational involvement, 13% (95% CI [11%, 16%]) in organizational future time perspective and 8% (95% CI [6%, 10%]) in flourishing.

Tests to examine whether work-age identity integration mediated the relationship between age-based stereotype threat and our outcome variables revealed an indirect effect of stereotype threat on organizational involvement (β = -.14, 95% CI [-.16, -.12]), organizational future time perspective (β = -.10, 95% CI [-.12, -.08]), and flourishing (β = -.08, 95% CI [-.09, -.06]), through identity integration. Results of this model confirm our first and second hypotheses: age-based stereotype threat was significantly associated with flourishing, organizational involvement and future time perspective (H1) and these associations were partially mediated by work-age identity integration (H2). Finally we tested the same model controlling for age. Only minor changes were noted in relationships between variables. After removing non-significant paths (i.e. those between age and all the variables in the model with the exception of future time perspective), the model showed an adequate fit: $\chi^2(3) = 1.727$, p = .631, CFI = 1.000, RMSEA = .00

Moderation analyses

To test our third and fourth hypotheses, a factorial analysis of variance (ANOVA) was performed to test for the main effects and interactions of gender (male, female) and job status (high, middle, low).

The ANOVA conducted on age-based stereotype threat revealed a statistically significant gender effect, $F(1, 2342) = 9.388$, p = .002, η_p^2 = .004. As hypothesized (H3) perceived age-based stereotype threat was higher for women (M = 2.46, SD = .89) than for men (M = 2.31, SD = .83). No significant differences were found for the three job status

groups, $F(2, 2342) = 1.204$, $p = .300$, $\eta_p^2 = .001$, or for the interaction between gender and

job status, $F(2, 2342) = .612$, $p = .543$, $\eta_p^2 = .001$. Our forth hypothesis (H4) was not

confirmed. A detailed description of gender and job status differences in the variables studied

can be found in the supplementary material.

In order to explore the possible moderation effects of gender and employment status

on the above findings, we adopted a multiple group model approach which simultaneously

estimated the same pattern of relations between the variables in different subsamples. In this

approach, equivalence among different samples is evaluated by constraints that impose

identical estimates for the model's parameters (Byrne, Shavelson & Muthén, 1989).

To evaluate whether there were significant differences between men and women we

compared the model with a fully constrained model, where equality constraints were placed

on all corresponding parameters. Even if this comparison yielded a chi-square difference

($\Delta\chi2$) value of 25.969, df (7), $p = .001$, indicating that some equality constraints do not hold

across the two groups, when these constraints were relapsed none of the parameters estimated

in the fully constrained model appeared non-significant in the partially constrained model.

We observed only small differences in the estimation of some of the paths revealing a

substantial equivalence of the process analyzed between men and women (a detailed

description of these analyses is provided in the supplementary material).

The possible moderating effect of employment status was examined using the same

procedure. The comparison with the unconstrained model yields a chi-square difference ($\Delta\chi^2$)

value of 33.840, df (14), $p = .002$.Modification indices revealed differences between the three

groups regarding the associations of stereotype threat with both identity integration and

organizational involvement. In particular we found the direct path between stereotype threat

and organizational involvement was non-significant in the group of employees with high

status, revealing that for supervisors the negative effects of age-based stereotype threat is

fully mediated by identity integration. (a detailed description of these analyses is provided in the supplementary material).

Discussion

Stereotypes concerning age among older adults, characterized by negative myths (Whitbourne & Hulicka 1990), are not simply an abstract concept of academic interest: our results show that the psychological processes associated with age-based stereotype threat in the workplace are very real. Our findings clearly show that employees threatened by age-based stereotypes concerning work performance are less able to commit to their current job, less oriented towards long-term professional goals, and are also ultimately less adjusted psychologically (H1). The negative association of age-based stereotypes is particularly relevant for job commitment, explaining 18% of the variance of this construct. Work organizations should thus take full account of the role of age-based stereotype threat in the engagement and productivity of their older employees.

Our findings replicate, in a robust large-scale sample of Italian employees, the overall pattern of results found by von Hippel et al. (2013) with American and Australian samples. Our results provide a first insight into the fact that processes related to age-based stereotype threat in the workplace, including how their detrimental consequences might operate similarly across social and cultural contexts. However, because cultures differ in their attitudes and beliefs regarding age (North & Fiske, 2015), future cross-cultural comparisons are needed to understand the possible culture-specificity of these findings.

Our study goes beyond a replication of the negative associations between age-based stereotype threat and employees' work and personal adjustment by showing that social identity dynamics also play a key role in these processes (H2). Our results suggest that that the negative impact of age stereotypes on employees' engagement with work (organizational commitment, future plans) and wellbeing may happen also indirectly through the effect that

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these stereotypes have on individuals' ability to integrate their age and organizational identities. Specifically, age-based stereotype threat may initiate the perception that one's age and work identities are not compatible (i.e., work-age identity conflict and separation). This low work-age identity integration, in turn, is negatively associated with an individual's work and personal adjustment. Furthermore, this meditational role of work-age identity integration is consistent across gender and job status. All in all, identity integration emerges as a construct that can help clarify the negative processes associated with the perception of age-based stereotype in the workplace.

Withbourne and Sneed (2002) see the integration of one's age in relation to other identity domains as an important coping strategy in successfully facing the ageing process. Our data confirm this proposition in the work domain, and clarify how age-based stereotype threat may impair these identity processes and individuals' positive professional and personal adjustment. Beyond age, our results speak to the idea that individuals who are able to integrate different domains of their personal identity with their work identity are consistently better adjusted in terms of their professional engagement (e.g., Wallen, Mor and Devine, 2014) and psychological well-being. Our findings also provide further support for the importance of identity integration in predicting individuals' overall psychological adjustment (see also Chen, Benet-Martinez, & Bond, 2008; Ferrari, Rosnati, Manzi, & Benet-Martínez, 2015; Koc & Vignoles, 2016). At the same time, to the best of our knowledge, our study is the first one to examine this construct in relation to age. Future research should examine how age-work identity integration (and the experiences that hamper or bolster it) influences work-related outcomes beyond job engagement. There is mounting evidence showing that individuals with high identity integration are more creative and benefit more from social diversity, i.e. take more advantage of the available diversity of ideas, knowledge, values, perspectives, and relationships), while those low on identity integration are less creative and

benefit less from social diversity (Cheng, Sanchez-Burks, & Lee, 2008; Saad et al., 2013; Tendaki & Williams, 2014). Individuals low in identity integration may be 'switching off' their conflicting identities and identity-related resources (e.g., competencies and relationships), which undermines their ability to take advantage of the social and cognitive benefits afforded by socially diverse contexts. Recent work also supports an association between identity integration and interpersonal tolerance toward others holding dissimilar values and preferences (Huff, Lee, & Hong, 2017). Given the critical importance in the workplace of outcomes such as creativity, positive diversity experiences, and interpersonal tolerance, it is crucial that future research examines whether the debilitating associations of ageing stereotypes on age-work identity also come with costs for these important outcomes.

Moderating Factors: Gender and Job Status

Our study replicated the finding that women perceive higher levels of age-based stereotype threat compared to man in the work domain (H3). These results are consistent with previous findings (Skultety, 2000; Whitbourne et al., 2002).

The analysis of differences in employment status did not show any difference in the level of perceived stereotype threat (H4). A possible interpretation could lie in the fact that manual workers were slightly under represented in our sample. Probably this population is less familiar with online surveys and answering the questionnaire could have demanded high levels of motivation. It could be that manual workers who perceive more age-based stereotype threat were less motivated to participate in the study. Our results also show that for older employees with higher status positions, the association between stereotype threat and organizational involvement was fully mediated by age-work identity integration. A possible explanation for these results could rest in participants' willingness to integrate negative aspects of age with one's professional identity. Perhaps for managers, negative associations with ageing are incompatible with what they (and others) perceive to be as "immutable"

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definitional aspects of their professional identity (e.g., fast cognitive fluency, up to date knowledge in all relevant areas). Future studies will have to deepen the understanding of these processes.

The present study on associations between ageing stereotypes and employees' work engagement and adjustment yields results that are consistent with previous theory and empirical evidence. At the same time it furthers our understanding of this important topic by examining the role that identity dynamics, gender, and job status have in these processes.

Limitations of this study come from the correlational nature of our design. First of all, it is not possible to infer the direction of causality. Thus, it is possible that stereotype threat-related considerations are an outcome, rather than the cause, of the adjustment and well-being measures we considered in this study. Future research should test the direction of the relationship, possibly by adopting a longitudinal design. However, when considered in the context of the wider literature in the area, we feel there is enough evidence to at least suggest a cycle of influence. Moreover, in our correlational design it not possible isolate possible intervening variables in the association tested (such as specific personality traits). Future studies should replicate our findings controlling for such aspects. Finally our study includes only older workers. Future research should examine the presence and the effects of age-based stereotype threat, replicating our theoretical model in different stages of life. For instance Murphy and Cross (2017) have recently argued that for younger employers at labor market entry stage, age could be particularly salient as an inhibitor, since young workers must demonstrate a level of ability/experience in order to secure a job.

Notwithstanding the limits of adopting a correlational and cross-sectional design our study has high ecological validity, in that it analyzes age-based stereotype threat outside of formal test-based settings, providing important evidence of the role played by this kind of discrimination in individuals' lives.

Acknowledgments

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Table 1

Means (M), standard deviations (SD) and bivariate correlations between variables

Variables	1	2	3	4	5	6	7	8
1. Gender	-							
2. Employment status	-.02	-						
3. Age	-.04*	-.11**	-					
4. Age-related stereotype threat	.08**	-.02	.12**	-				
5. Work-age identity integration	-.11**	-.07**	-.06**	-.37**	-			
6. Organizational involvement	.01	-.14**	-.05**	-.22**	.41**	-		
7. Organizational future time perspective	.02	-.11**	-.38**	-.26**	.33**	.44**	-	
8. Flourishing	.04	-.03	-.04	-.21**	.26**	.29**	.32**	-
Mean			58	2.40	12.63	3.99	3.20	5.53
(SD)			(3.7)	(.88)	(5.88)	(.86)	(1.08)	(.84)

Note. N = 2348. Gender code is 0=men 1=women
*p <.05,
**p < .01

Figure 1

Proposed model testing the mediation of identity integration on the relationship between age-based stereotype threat and flourishing, organizational involvement and future time perspective. Standardized path coefficients with 95% CI and R^2 of endogenous variables