

# When prejudice against you hurts others and me: The case of ageism at work

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## Abstract

Ageism in the workplace has documented detrimental consequences for its victims, but its effects on those who hold ageist views are rarely investigated. A cross-sectional study and a longitudinal study examined ageism toward both younger and older workers and its relation to intergroup contact, work behaviors, organizational identification, and the well-being of prejudiced individuals. It was hypothesized that ageism would predict prejudiced individuals' behaviors toward co-workers, identification with their organization, and vitality at work, indirectly through intergroup anxiety and quality of intergroup contact. Overall, 647 employees aged 24–62 years provided data on the variables of interest. Both studies suggested that ageist views worsened the quality of intergroup contact, which in turn increased counterproductive behaviors toward co-workers and decreased identification with the organization. Moreover, ageism marginally predicted vitality at work longitudinally through the mediation of quality of intergroup contact. No support emerged for the mediational role of intergroup anxiety. Theoretical explanations for these findings and their practical implications are discussed.

## 1 | INTRODUCTION

Rapid aging of the population and recent recessions in many Western countries have accentuated intergenerational conflict in the workplace. In addition, an increasing number of older workers now postpone retirement making it harder for young people to find work congruent with their skills and qualifications (OECD, 2011; Prause & Dooley, 2011). This context creates potential conflict between older and younger workers, which can be exacerbated by negative stereotypes and prejudice based on age or "ageism." Ageism is defined as "negative attitudes or behaviors toward an individual solely based on that person's age" (Greenberg, Martens, & Schimel, 2002, p. 27).

Ageism is currently one of the most common forms of prejudice experienced in the work domain and it is considered more pervasive and pernicious than racism and sexism because it is more institutionalized and difficult to recognize (e.g., Abrams, Eilola, & Swift, 2009; Nelson, 2002, 2005; Sweiry & Willitts, 2012). Workers who are the target of negative age-related attitudes experience less

job satisfaction, commitment and engagement, less support and respect by colleagues, less psychological well-being, more long-term sickness, and job insecurity (Levy & Macdonald, 2016; Taylor, McLoughlin, Meyer, & Brooke, 2013; Viitasalo & Nätti, 2015). But do those who hold ageist views similarly experience negative outcomes? In the absence of relevant data, it is difficult to answer this question.

The present study therefore examines whether having ageist views in the workplace negatively affects the well-being of those holding such views, their interactions with colleagues and their sense of belonging to the organization. We also explore mechanisms that might account for these potential associations. Ageism in the workplace is likely to amplify anxiety and negative interactions toward the age outgroup, which can result in prejudiced individuals being less cooperative and displaying more counterproductive behaviors toward colleagues of any age, showing weaker identification with the organization and exhibiting poorer well-being at work.

## 1.1 | Ageism at work

Ageist attitudes were originally investigated in relation to the perception of older workers, probably because this form of prejudice is thought to be more severe and to affect a larger number of workers than prejudice toward younger workers. The workforce is becoming older in most Western countries (EU-OSHA, 2016) and, in contrast to prejudicial views of younger persons, prejudice toward the older people cannot be escaped with the passage of time.

Older workers are victims of a variety of negative stereotypes. For instance, they are frequently perceived as having lower mental and physical ability and being poorer performers than younger workers; they are also judged as less motivated, less productive, less adaptable, and less willing to change and learn (Ng & Feldman, 2012; Posthuma & Campion, 2009). These prejudices generally contradict empirical evidence (Ng & Feldman, 2012, 2008; Posthuma & Campion, 2009), but they nonetheless have significant effects upon older workers: they operate as barriers to older workers' employment, training and promotion opportunities, especially under conditions of resource scarcity (Gordon & Arvey, 2004; North & Fiske, 2016). They also make older workers susceptible to stereotype threat, which worsens their performance, attitudes, and well-being at work (Abrams, Eller, & Bryant, 2006; von Hippel, Kalokerinos, & Henry, 2013). Indeed, older workers who internalize or are confronted with negative age stereotypes report poorer job satisfaction and organizational commitment, stronger intentions to resign or retire, poorer health, and quality of life (Gaillard & Desmette, 2010; Iweins, Desmette, Yzerbyt, & Stinglhamber, 2013; Liebermann, Wegge, Jungmann, & Schmidt, 2013; Palacios, Torres, & Mena, 2009; von Hippel, Kalokerinos, & Henry, 2013).

However, ageism can be directed toward younger workers as well, when they are perceived as more unstable, dishonest, likely to miss work and less experienced and trustworthy than their older counterparts (Britton & Thomas, 1973; Gibson, Zerbe, & Franken, 1993). Notwithstanding these prejudices, their effects are rarely recognized and little effort has been made to analyze them, probably because they are judged as less virulent and persistent than those pertaining to older workers.

In this article, we address the above-mentioned shortcoming in the literature by examining ageism toward both older and younger workers and its effects. Such a focus is in line with a recent work by King and Bryant (2016) who investigated ageism at work as a multigenerational construct and found it related concurrently to cooperative contact and job satisfaction across different generations of workers.

## 1.2 | Ageism, intergroup anxiety, and intergroup contact

One of the most widely documented associations in social psychology is that between prejudice and intergroup contact. An impressively large body of research supports Allport's (1954) contact hypothesis according to which contact between groups reduces prejudice, especially if contact is between equals, has institutional

support and involves cooperation and the development of close relationships (e.g., Brown & Hewstone, 2005; Pettigrew & Tropp, 2006). Although much less numerous, some longitudinal data support the reverse causal effect from prejudice to intergroup contact. For example, data collected from over 2,000 White, Asian, Latino, and African Americans indicated that students who exhibited more negative attitudes toward ethnic outgroups at the end of their first year of college had fewer outgroup friends and more ingroup friends during their second and third years of college, controlling for pre-college friendships and other background variables (Levin, Laar, & Sidanius, 2003). Also, a large longitudinal survey conducted in Germany, Belgium, and England with secondary school students belonging to ethnic minorities or majorities found that prejudice reduced positive contact experienced with outgroup members (Binder et al., 2009).

The mechanisms through which prejudice leads to negative intergroup interactions are largely unknown, but the existing intergroup literature suggests that intergroup anxiety might exert a mediating role by predisposing prejudiced people to behave negatively to outgroup members and to interpret negatively interactions with them (Stephan, 2014).

Intergroup anxiety refers to feelings of apprehension and awkwardness experienced when expecting negative outcomes (like rejection, embarrassment, or misunderstanding) from anticipated, present or past intergroup contact (Greenland & Brown, 1999; Stephan, 2014; Stephan & Stephan, 1985). There are three components of intergroup anxiety. The affective component, the central one, involves feelings of apprehension, distress, discomfort, and uneasiness elicited by intergroup interactions; the cognitive component refers to the belief and expectation that intergroup interactions have negative consequences; and the physiological component pertains to higher physiological arousal experienced during intergroup interactions (Stephan, 2014).

Several studies have demonstrated the negative effects of intergroup anxiety on intergroup attitudes (e.g., Barlow, Louis, & Terry, 2010; Pettigrew & Tropp, 2008; Stephan, Renfro, Esses, White Stephan, & Martin, 2005; Swart, Hewstone, Christ, & Voci, 2011; Turoy-Smith, Kane, & Pedersen, 2013). Specifically, in relation to ageism there is evidence that young people's anxiety about contact with older people increases their negative attitudes and their intentions to engage in negative behaviors toward them (Bousfield & Hutchison, 2010; Hutchison, Fox, Laas, Matharu, & Urzi, 2010). Also, in the work domain intergroup anxiety experienced by young human resource specialists and managers has been shown to be negatively related to their willingness to hire older people (Fasbender & Wang, 2017).

As with intergroup contact, intergroup anxiety is not only a predictor, but also an outcome of negative intergroup attitudes. In fact, intergroup anxiety is especially likely to occur where negative intergroup attitudes and related cognitions exist (for a review see Stephan, 2014). Prejudiced people are concerned that their negative attitudes will become evident to and will be reciprocated by outgroup members, causing them to feel uneasy during mutual interactions (e.g., Finchilescu, 2010; Goff, Steel, & Davies, 2008; Perry,

Dovidio, Murphy, & van Ryan, 2015; Richeson & Shelton, 2003; Stephan & Stephan, 1989; West & Dovidio, 2012). Also, people holding stereotypes about the hostility, immorality, and incompetence of outgroup members experience more intergroup anxiety when interacting or expecting to interact with them (e.g., Aberson & Haag, 2007; Gordijn, Finchilescu, Brix, Wijnants, & Koomen, 2008; Shelton, Richeson, & Vorauer, 2006).

Intergroup anxiety might, in turn, adversely impact intergroup interactions, by amplifying offensive responses toward outgroup members which tend to be reciprocated, thereby creating self-fulfilling prophecies (e.g., Goff et al., 2008; Plant, 2004; Plant & Butz, 2006; Richeson & Shelton, 2003). Accordingly, intergroup anxiety was found to intensify threat appraisal of out-group-initiated contact, feelings of anger, and offensive action tendencies toward an outgroup (Van Zomeren, Fischer, & Spears, 2007). Also, some evidence suggests that prejudiced people might communicate ineffectively with outgroup members, be reluctant to behave in positive ways and act offensively toward them (Martinez, 2000; Ulrey & Amason, 2001; Van Zomeren et al., 2007). However, the correlational nature of this evidence does not rule out the possibility that these negative “outcomes” cause intergroup anxiety, rather than vice versa (Stephan, 2014), or are accounted for by third variables.

Despite King and Bryant's (2016) initial evidence on the predictive role of ageism on concurrent intergroup contact in the work domain, to our knowledge no other study has investigated the effect of ageism on intergroup contact at work. The literature reviewed earlier, however, supports the assumption that the more workers are prejudiced against different aged colleagues, the more they are likely to experience negative interactions with them both directly and indirectly through feelings of apprehension and awkwardness experienced toward them.

### 1.3 | Outcomes of age-related prejudice and negative intergroup contact

As the working lifespan increases, older and younger employees are more often required to collaborate and work together within organizations. In multiage work contexts, prejudice and poor quality of intergroup contact may have several negative interrelated consequences, at organizational, interpersonal, and individual levels.

At the organizational level, prejudice and poor quality of intergroup contact may reduce identification with the organization (i.e., lower cognitive and perceptual awareness that the self constitutes a part of the organization accompanied by less emotional significance attached to this identity, Ellemers, De Gilder, & Haslam, 2004). As suggested by social identity theory (Tajfel & Turner, 1986), the negative evaluation of an age outgroup lowers the attractiveness of multiage teams and fosters disidentification with them (Liebermann et al., 2013). Specifically, relational tensions and frictions between different age colleagues fueled by ageist attitudes undermine identification with multiage teams and organizations. In fact, relationship conflicts in the organization have been shown to adversely affect intentions to remain in the organization (Jehn, 1995; Shaukat, Yousaf,

& Sanders, 2017). Thus, it can be assumed that ageism decreases identification with a multiage organization by worsening the interactions between different age colleagues.

At the interpersonal level, prejudice may negatively affect not only interactions with different age colleagues, but through negative spillover all co-workers, regardless of whether they belong to the age outgroup or ingroup. Specifically, in multiage work teams, ageism and problematic age-related interactions may increase counterproductive work behaviors (CWBs; behaviors that harm organizations or organizational members) and decrease helpful work behaviors like organizational citizenship behaviors (OCBs; discretionary behaviors that promote the effective functioning of the organization and its members; Fox, Spector, & Miles, 2001; Organ, 1988). It is well documented that employees engage in more CWBs and less OCBs when they experience job stressors like negative affect (e.g., anxiety and distress) and interpersonal conflict (Berry, Carpenter, & Barratt, 2012; Dalal, Lam, Weiss, Welch, & Hulinet, 2009; Eatough, Chang, Miloslavic, & Johnson, 2011; Eschleman, Bowling, & LaHuis, 2015; Matta et al., 2014). Specifically, employees who experience negative emotions at work seek to reduce or to cope with them through engagement in CWBs (Cropanzano Goldman & Folger, 2003; Herscovis et al., 2007; Yang & Diefendorff, 2009). For example, employees who believe the organization is a source of their negative emotions seek to repair them by “retaliating” against the organization and co-workers or by avoiding them as much as possible (Blau, 1964; Dalal et al., 2009). Consistent with the above findings, we propose that in multiage work contexts individuals who hold prejudices toward different age co-workers experience more anxiety and negativity when interacting with them, which turns into more counterproductive and less cooperative behaviors, regardless of the target of these behaviors.

Finally, at the individual level, ageism and poor quality of intergroup contact may undermine prejudiced individuals' well-being at work. Ageism has been shown to significantly impair the mental and physical well-being of prejudice victims. Older people who are exposed to negative stereotypes about aging and/or endorse them have been found to have poorer health, fewer resources to cope with stress, and a higher mortality rate (see for a review Nelson, 2016). In particular, older employees who feel threatened by age stereotypes tend to report decreased mental health at work (von Hippel, Kalokerinos, & Henry, 2013). In contrast, there is little evidence to document the impact of ageism on those who hold such prejudice. However, Mendes and colleagues (Mendes, Gray, Mendoza-Denton, Major, & Epel, 2007) were able to show that prejudiced people, when faced with an intergroup situation, experience greater threat, higher anxiety, and increased levels of anabolic hormones, primarily because they perceive themselves as having fewer resources to cope with the distressing situation. Liebermann et al. (2013) argued that employees' ageism leads to a higher occurrence of negative affective responses and relationship conflicts, which in turn undermine individual health; research has indeed shown that having good relationships with colleagues is one of the most important predictors of work well-being (Sousa-Poza & Sousa-Poza,

2000). Consistent with their assumption, Liebermann and colleagues (2013) found that younger employees who hold negative stereotypes toward older colleagues suffer worse health as long as they work in age-diverse teams. In a similar vein, ageist attitudes may impair well-being at work by worsening interactions among different age colleagues, which in turn may be negatively affected by the intensified anxiety experienced in intergroup situations.

## 1.4 | Hypotheses and overview

Two studies examined the key hypotheses that ageism toward older and younger workers affects work well-being, work behaviors and organizational identification, both directly and indirectly, through the mediation of intergroup anxiety and quality of intergroup contact.

Specifically, we predicted that the more individuals hold prejudiced attitudes toward younger or older workers the more they experience intergroup anxiety, have poor quality intergroup contacts, do not identify with the organization, enact CWBs rather than those of good organizational citizenship, and suffer impaired well-being in terms of vitality at work. We decided to focus on quality rather than on frequency of intergroup contact in light of research that emphasized its stronger association with explicit ageist attitudes (e.g., Bousfield & Hutchinson, 2010; Drury, Hutchison, & Abrams, 2016; Schwartz & Simmons, 2001; Tam et al., 2006). Finally, we decided to focus on vitality, that is, the perceived physical and mental energy that leads people to experience a sense of enthusiasm, aliveness, and vigor (Peterson & Seligman, 2004; Ryan & Frederick, 1997; Shirom, 2003). We did so because it is robustly associated with both health and work-related outcomes (e.g., Carmeli, Ben-Hador, Waldman, & Rupp, 2009; Carmeli & Spreitzer, 2009; Penninx et al., 2000; Porath, Spreitzer, & Gibson, 2008; Ryan & Frederick, 1997; Shirom, Toker, Berliner, Shapira, & Melamed, 2008). Based on prior research, we assumed that vitality, behaviors at work, and organizational identification would be negatively affected by ageism indirectly through intergroup anxiety and quality of intergroup contact.

Study 1 surveyed workers in two different organizations to document the expected links between ageism, intergroup anxiety, quality of intergroup contact, organizational identification and behaviors toward colleagues. Study 2 surveyed workers in a third organization twice over a 3-month period to replicate longitudinally the previous links as well as to test the effects of ageist attitudes upon vitality at work. Across the two studies, we measured ageism against both younger and older workers and explored whether the predicted effects of ageism vary in relation to these different targets.

## 2 | STUDY 1

The aim of Study 1 was to test our prediction that ageism against older and younger workers was related to prejudiced individuals' behaviors toward colleagues and organizational identification, both directly and indirectly through intergroup anxiety and quality of intergroup contact.

## 2.1 | Method

### 2.1.1 | Participants and procedure

Data were collected in two large Italian companies situated in Northern, Central, and Southern Italy. Participants were 475 full time employees, aged from 26 to 62 years ( $M = 43.89$ ;  $SD = 9.11$ ), working in different departments,<sup>1</sup> who completed the entire questionnaire. A majority of the respondents were males<sup>2</sup> (78%), had a high school education (56%) had permanent contracts (93%), and worked in multiage teams (89%), having on average 7.35 members belonging to the age outgroup.

CEOs and HR managers, who had previously been informed about the project and had consented to participate, invited participants to complete an anonymous questionnaire available on the internet. The link to the questionnaire was included in an email sent by the researchers; the email indicated that the purpose of the study was to examine relationships at work.

### 2.1.2 | Measures

Participants less than 45 years old ( $n = 251$ ) were asked to answer ageism, intergroup anxiety, and quality of intergroup contact scales in relation to "old workers", whereas participants 45 years of age or above were invited to answer the same scales referring to "young workers". Participants were informed that "old workers" included workers of 55 years or above, whereas the group of "young workers" comprised workers aged 34 or below.<sup>3</sup>

#### Ageism

According to the tripartite model of attitudes (Finkelstein & Farrell, 2007), ageism, like any other form of prejudice, can be defined by three components: cognitive, affective, and behavioral. Accordingly, we devised three measures each assessing a component of ageism (for an alternative three-component measure see King & Bryant, 2016<sup>4</sup>).

<sup>1</sup>Most represented departments were commercial (25%), research and development (21%), logistic (11%), administrative (10%), and marketing (10%).

<sup>2</sup>The over representation of male participants reflects the employment situation in Italy, where a low percentage of women are employed in industry.

<sup>3</sup>These age thresholds were chosen on the basis of the Italian National Institute of Statistics (2015), according to which Italian workers can be divided into six age groups (i.e., 15–24, 25–34, 35–44, 45–54, 55–64, 65 and more years). We used the first two and the last two age groups to identify young and old workers, respectively. Young workers as well as the younger group of middle age workers were asked to respond by referring to old workers, whereas old workers as well as the older group of middle age workers were invited to respond by referring to young workers.

<sup>4</sup>Following the standard affective-behavioral-cognitive model of attitudes (Eagly & Chaiken, 1998), King and Bryant (2016) proposed a measure—the Workplace Intergenerational Climate Scale (WICS)—to assess ageist attitudes in the workplace across generations. We were unable to use their scale in the present research because it was published after our data collection began. Anyway, the WICS differs from our ageism measures in a number of respects, including the assessment of the affective and behavioral components of ageism. In fact, it measures the affect experienced *during the interaction* with co-workers, rather than *toward* co-workers (but feelings and emotions toward attitude targets can be experienced also outside the interaction with them, such as it happens when we avoid an outgroup person because we fear her). Also, the WICS assesses the frequency of reported in-depth contact, rather than the intention to avoid facilitating or helping behaviors, thereby presumably partially overlapping with the contact construct (indeed they call their behavioral subscale "intergenerational contact").

The affective measure assessed aversion to young/old workers by asking participants to express their feelings toward them on a 6-item scale based on a well-known measure by Zanna (1994). The measure comprised 6-point semantic differentials with bipolar adjectives at each end (e.g., warm-cold, negative-positive, admiration-disgust;  $\alpha = .82$ ).

The cognitive measure evaluated, on a 6-point scale (1 = completely disagree, 6 = completely agree), the extent to which participants agreed with 10 items reflecting negative beliefs about young or old workers. Instead of assessing stereotypes specific to each age target, we evaluated a set of negative beliefs that could be applied to both young and old workers; this allowed us to obtain results comparable across the age targets. The 10 items were selected from an original pool of 20 items, which were derived from 3 focus groups<sup>5</sup> and/or adapted from existing prejudice scales: the Neosexism Scale (Campbell, Schellenberg, & Senn, 1997; Tougas et al., 1995), the Ambivalent Sexism Inventory (Glick & Fiske, 1996), the Ambivalence toward Men Inventory (Glick & Fiske, 1999), and the Prescriptive intergenerational-tension ageism scale (North & Fiske, 2013). Descriptive analyses conducted on 78 workers in a pilot study as well as descriptive and factor analyses conducted on Studies 1 and 2 data revealed that the 10 retained items were normally distributed, unidimensional (factor loadings  $\geq .54$ ), explained at least 42% of the variance, and had a good internal consistency ( $\alpha \geq .88$ ; see Appendix).

Because intention is most proximal to behavior (Ajzen & Dasgupta, 2015), the behavioral measure evaluated the intention to avoid facilitating or helping behaviors toward young/old workers. Five 5-items were rated on 6-point scale (1 = completely disagree, 6 = completely agree) (e.g., "I would be favorable to a small change in my work schedule for helping the needs of a young/old worker," "I would love to help a young/old co-worker with tasks difficult for him/her," reversed coded) ( $\alpha = .75$ ). In line with existing ageism measures (see Bousfield & Hutchison, 2010), we preferred to assess the intention to avoid prosocial behaviors rather than to engage in hostile ones in order to reduce possible social desirability biases in measuring openly discriminatory behaviors using self-reports (Holmes, 2009).

The three-component model of ageism was tested by a confirmatory factor analysis in which items reflecting the cognitive, affective, and behavioral dimension of ageism were allowed to load on three distinct correlated dimensions. The model showed an adequate fit to the data ( $S-B\chi^2(183) = 376.758$ ,  $p = .000$ ,  $R-CFI = .936$ ;  $R-RMSEA = .051$ ); the three factors were correlated between  $r = .32$  and  $r = .41$ , and all factor loadings were greater than .47.

For each ageism measure, we computed a composite score using the mean.

#### *Intergroup anxiety*

Intergroup anxiety was measured with a 3-item variant of the scale developed by Stephan and Stephan (1985; see also Stephan, 2014), which emphasizes the affective component of the construct. The measure assessed the degree to which subjects experienced an uncomfortable affective state (i.e., anxiety, awkward, and easiness (reverse scored)) when anticipating interactions with young/old co-workers. Subjects responded to the items on a 6-point scale (1 = not at all, 6 = extremely) ( $\alpha = .80$ ).

#### *Quality of intergroup contact*

Quality of contact with younger/older co-workers was assessed by 4 items adapted from Voci and Hewstone (2003). Participants were asked to evaluate on a 6-point scale their interactions with outgroup members in the last month; the scale consisted of four pairs of bipolar adjectives involuntary/voluntary, natural/forced, unpleasant/pleasant, and competitive/cooperative ( $\alpha = .86$ ).

#### *Organizational identification*

Participants' level of identification with their organization was measured using 3 items adapted from the Shared Family Identity scale (Soliz & Harwood, 2006; e.g., "I am proud to be an employee of this company"; "I think of this company as a part of me";  $\alpha = .83$ ).

#### *Counterproductive and helpful behaviors toward co-workers*

All participants were then asked to evaluate on a 6-point scale (1 = never; 6 = very often) how frequently in the last month they enacted a set of harmful and helpful behaviors toward co-workers (independently of the fact they belonged to the age ingroup or outgroups). Three items were used from the Counterproductive Work Behaviors Checklist (Fox, Spector, Goh, Bruursema, & Keller, 2012; e.g., "I started an argument with someone at work," "I insulted someone about their job performance") which assessed employee behaviors that harm persons in the organization. Four items of the Organizational Citizenship Behaviors Checklist (Fox et al., 2012; e.g., "I lent a compassionate ear when someone had a work problem," "I helped a co-worker who had too much to do") evaluated helpful behaviors that strengthen the social fabric of the organization above and beyond role requirements ( $\alpha = .54$  and  $.74$ , respectively).

### 2.1.3 | Data analytic strategy

To account for measurement error, we used structural equation modeling with latent constructs (EQS6.2; Bentler, 2008) in documenting the structural relationships among the variables of interest. For intergroup anxiety, quality of intergroup contact, behaviors toward co-workers (counterproductive and helpful), and organizational identification individual items served as the manifest indicators for that latent construct, whereas for ageism the three composite scores

<sup>5</sup>Each of the focus groups was conducted with six workers of similar age ("young," "old" or "middle," according to the definition used in the present work). Participants were asked to discuss the characteristics of younger/older workers and the main problems encountered in working with them. Because some reported negative aspects were common to both younger and older workers and were closely related to characteristics already assessed by existing prejudice scales (e.g., the tendency to get offended too easily, to complain too frequently, to have discriminatory attitudes, or disrespectful behaviors, to seek preferential treatments,...), we relied on them in constructing items for the cognitive component of prejudice.



**TABLE 1** Study 1—Descriptive statistics and Pearson correlations among studied variables

		<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1.	Prejudice (affective)	2.35	.76	–						
2.	Prejudice (cognitive)	3.05	.93	.33***	–					
3.	Prejudice (behavior intentions)	3.40	1.12	.32***	.26***	–				
4.	Intergroup anxiety <sup>a</sup>	1.95	1.00	.29***	.24***	.15**	–			
5.	Quality of intergroup contact <sup>a</sup>	4.65	.91	–.53***	–.41***	–.31***	–.27***	–		
6.	Counterproductive behaviors <sup>a</sup>	1.87	.71	.16***	.15**	.10*	.08	–.15**	–	
7.	Citizenship behaviors <sup>a</sup>	3.83	.90	–.08	.01	–.17***	–.12**	.09*	.37***	–
8.	Organizational identification <sup>a</sup>	4.85	1.02	–.26***	–.04	–.15**	–.16***	.19***	–.04	.16***

<sup>a</sup>For these variables correlations were computed using factor scores.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

were entered as the manifest indicators for the underlying latent construct.

Inspection of Mardia's (1970) coefficients suggested significant deviations from multivariate normality; to reduce the impact of non-normality we relied on Satorra and Bentler (2001) scaled estimates in rescaling the standard errors and the chi-square statistics into the Satorra–Bentler scaled chi-square ( $S-B \chi^2$ ) statistic. Fit indexes like the comparative fit index (CFI; Bentler, 1990) and the root-mean-square error of approximation (RMSEA; Bentler, 2008) were also adjusted for nonnormality by incorporating the  $S-B \chi^2$  into their calculations. We refer to them as robust estimates (i.e., R-CFI and R-RMSEA). The Akaike Information Criterion adjusted for scaling (R-AIC) was used to compare the fit of competing non-nested models (Akaike, 1987). The model with the smallest AIC value among the models tested is the preferred model.

To test whether the hypothesized model provided an equally good fit to the data from employee groups that differ in the target of ageism (young vs. old workers), we conducted multigroup analyses. In this approach, equivalence across the two groups was evaluated by constraining the estimates for both the measurement and structural parameters of the model to be equal (Byrne, 1994). In EQS, the plausibility of these equality constraints is examined by the Lagrange multiplier (LM) test (Bentler, 2008), which provides evidence that each constraint applies to the populations involved.

## 2.2 | Results and discussion

Descriptive statistics and correlations among studied variables are presented in Table 1.

On average, participants reported low levels of intergroup anxiety and counterproductive behaviors, from low to moderate levels of ageism (depending on its component), medium level of citizenship behaviors, and medium-high levels of quality of contact and organizational identification. When “younger” participants (less than 45 years) were compared to “older” participants (45 years or above),

we found that the former reported significantly higher levels of ageism (cognitive component:  $M_{\text{young}} = 3.13$ ,  $M_{\text{old}} = 2.95$ ,  $t$  test = 2.031,  $p = .043$ ; affective component:  $M_{\text{young}} = 2.48$ ;  $M_{\text{old}} = 2.19$ ,  $t$  test = 4.281,  $p = .000$ ; behavioral component:  $M_{\text{young}} = 3.83$ ;  $M_{\text{old}} = 2.92$ ,  $t$  test = 9.629,  $p = .000$ ), higher intergroup anxiety ( $M_{\text{young}} = 2.11$ ;  $M_{\text{old}} = 1.76$ ,  $t$  test = 3.840,  $p = .000$ ), poorer quality of contact ( $M_{\text{young}} = 4.47$ ;  $M_{\text{old}} = 4.84$ ,  $t$  test =  $-4.453$ ,  $p = .000$ ) and lower levels of organizational identification ( $M_{\text{young}} = 4.68$ ;  $M_{\text{old}} = 5.04$ ,  $t$  test =  $-3.939$ ,  $p = .000$ ). These findings are in line with the common belief that prejudice against older workers is more severe than that against younger workers (Wu, 2019).

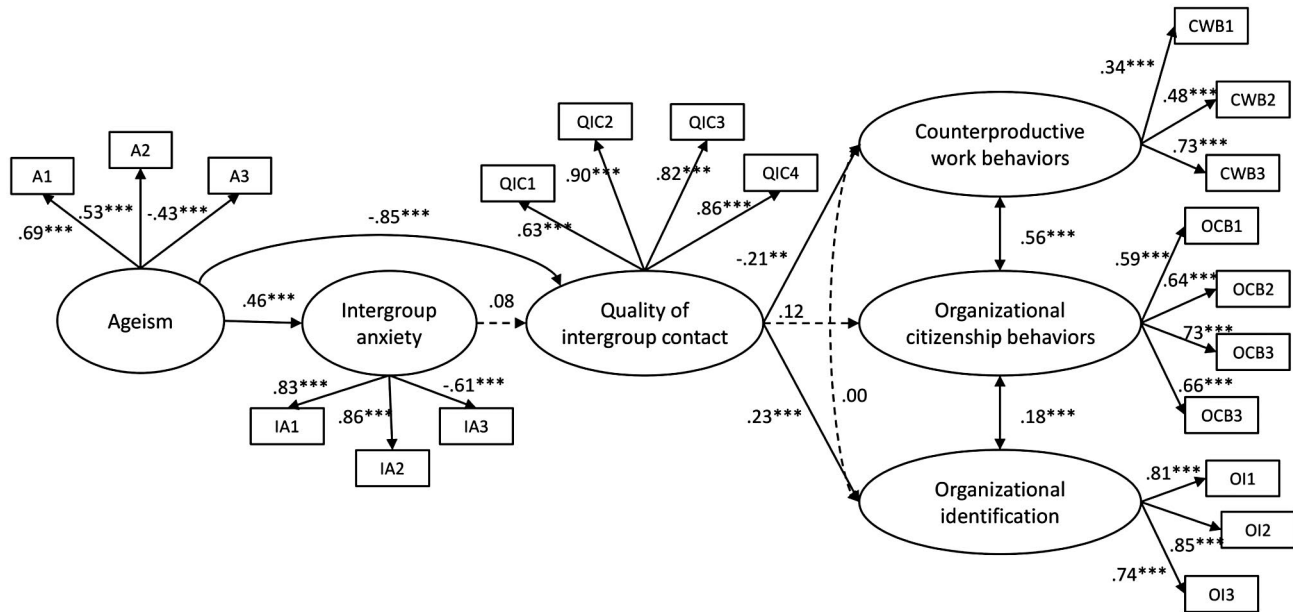
Except for the association between counterproductive behaviors and citizenship behaviors,<sup>6</sup> all correlations were in the expected direction and most of them were significant.

The hypothesized model with standardized path coefficients and significance levels is presented in Figure 1.

Examination of fit indices showed a good fit between the proposed model and the data ( $S-B \chi^2$  (161) = 299.043,  $p = .000$ , R-CFI = .955; R-RMSEA = .043; R-AIC =  $-22.957$ ).<sup>7</sup> The paths from ageism to intergroup anxiety and to quality of intergroup contact,

<sup>6</sup>The unexpected positive correlation between CWB and OCB might be due to the frequency rating format used in the present study which, compared to the agreement rating format, has previously been proved to result not only in weaker negative relationships between CWB and OCB (Dalal, 2005), but also in positive ones (e.g., Bauer et al., 2018; Spector, Bauer, & Fox, 2014). Alternatively, given that participants were employed in very large companies, having many different departments and work teams, it might also be that participants more frequently enact helpful behaviors toward certain co-workers and counterproductive behaviors toward other co-workers, depending on their perceived work team affiliation. For example, maybe that they are helpful and supportive toward colleagues belonging to their own working group, but aggressive and hostile toward colleagues belonging to work teams perceived as competitors or uncooperative. Accordingly, the intergroup relations literature suggests that intergroup conflict not only coexists with, but also intensifies intragroup cooperation (e.g., Sherif, 1966; Yokota & Nakanishi, 2012, 2011).

<sup>7</sup>Given the strong link found between quality of intergroup contact and ageism ( $\beta = -0.85$ ), we also estimated a model in which the manifest indicators of the two latent constructs were forced to load on the same factor. This model showed a significantly worse fit ( $S-B \chi^2$  (162) = 306.817,  $p = .000$ , R-CFI = 0.953; R-RMSEA = 0.043; AIC =  $-17.813$ ; scaled chi-square difference test:  $\Delta \chi^2(1) = 12.42$ ,  $p < .000$ ) than the hypothesized model.



\*\*  $p < .01$  \*\*\*  $p < .001$

**FIGURE 1** Study 1—Structural equation model illustrating cross-sectional relationships between ageism, intergroup anxiety, quality of intergroup contact, counterproductive work behaviors, organizational citizenship behaviors, and organizational identification. Standardized coefficients (betas) are reported

and from quality of intergroup contact to counterproductive behaviors and organizational identification were all significant and in the expected direction, whereas the paths from intergroup anxiety to quality of intergroup contact and from quality of intergroup contact to OCBs were not significant. Multigroup analysis with all parameters constrained across the two groups having different ageism targets (young vs. old workers) revealed no significant differences.

An alternative model was also tested. Following common practice in the contact literature (Drury et al., 2016; Tam et al., 2006), quantity of intergroup contact was added as a covariate of quality of intergroup contact to control its effects on outcome variables. Contact quantity was measured by assessing the frequency of contact with young/old co-workers in the last month on a 6-point scale (1 = never, 6 = very often). Unlike other measures that start from “rarely,” our scale starts from “never” in order to take into account the possibility that workers did not experience contact with age outgroup colleagues in the limited time frame considered due to occasional hindrances like work trips, temporary changes in the composition of their work team, holiday, sick or parental leaves (for similar rating scales see Teater & Chonody, 2017; Voci & Hewstone, 2003). The alternative model including contact quantity yielded a significantly worse fit than the hypothesized one ( $B-\chi^2(177) = 346.006, p = .000$ ,  $R-CFI = .927$ ;  $R-RMSEA = .047$ ;  $R-AIC = -7.994$ ) and showed that the strength of the links between contact quality and outcomes variables remains substantially unchanged after controlling for contact quantity ( $\beta$ s =  $-.21^{**}$  for CWB,  $.06$  for OCB, and  $.22^{***}$  for organizational identification). Similar findings were obtained when subjects experiencing no contact (3.8%) were removed from the analysis

( $B-\chi^2(177) = 343.038, p = .000$ ,  $R-CFI = .937$ ;  $R-RMSEA = .048$ ;  $R-AIC = -10.962$ ;  $\beta$ s =  $-.21^{**}$  for CWB,  $.07$  for OCB, and  $.22^{***}$  for organizational identification).

Overall, these results indicate that ageism toward both younger and older workers directly predicts intergroup anxiety and quality of intergroup contact, and indirectly predicts counterproductive behaviors ( $\beta = .17, p = .005$ ) and organizational identification ( $\beta = -.19, p = .000$ ), through the mediating variable, quality of intergroup contact. The more employees were prejudiced against different age workers the more they experienced anxiety and negative interactions with them; they also enacted more counterproductive and harmful behaviors toward all co-workers in general and identified less strongly with the organization. These results are consistent with the idea that ageist views in the work place are detrimental to those who hold them, their interactions with others, and the overall organization.

However, contrary to our expectations, intergroup anxiety did not mediate the relation between ageism and quality of intergroup contact; nor did ageism and quality of intergroup contact predict OCBs. This last finding is in line with research on CWB and OCB showing that the relationship of antecedent variables is usually stronger for CWB than for OCB (Dalal, 2005). The first unexpected finding seems to suggest that, when comparing the unique predictive power of ageism and anxiety over the quality of contact, prejudice is more predictive than anxiety to the point that the latter is not related to intergroup contact independently of the former. The lack of a significant relationship between anxiety and contact in our model may also be due to the fact that,

as suggested in Stephan and Stephan's (2014) literature review, intergroup anxiety can have both negative and positive effects on interactions in the same intergroup context, depending on the factors causing it. Specifically, if anxious people are primarily concerned about being perceived as prejudiced, they may act in an especially positive manner toward outgroup members, while at the same time their anxiety may cause them to display negative behaviors that are not consciously monitored and adversely affect the intergroup interactions. This could lead to an overall null or weak effect of anxiety on quality of contact. In line with this argument, Greenland, Xenias, and Maio (2012) showed that intergroup anxiety, typically measured as a single variable, is actually made up from two underlying constructs: other-anxiety (anxiety that the other might be difficult, awkward, or actively hostile) and self-anxiety (anxiety over thinking or doing something that is prejudiced). Other-anxiety is associated with more negative attitudes, negative affect, and less contact, which most likely are associated with negative behaviors such as avoidance or antagonism, as typically expected from the intergroup anxiety literature. Self-anxiety, instead, is associated with higher levels of motivation to control prejudice, which can lead not only to avoidant but also to approaching and compensatory positive behaviors. Thus, the lack of a significant relation between intergroup anxiety and the quality of the intergroup contact, besides being justified by the stronger predictive role of ageism, might also be explained by higher levels of self-anxiety than other-anxiety in our sample. The fact that the organizations studied had adopted gender equality policies aimed at reducing sexist attitudes and supporting female workers might for example have strengthened workers' motivation to avoid appearing prejudiced toward colleagues who differ not only by sex but also by age, thereby fostering the self-component of intergroup anxiety.

In summary, Study 1 provided evidence that ageism predicts more CWBs and less organizational identification indirectly, through the mechanism of age-related intergroup contact.

### 3 | STUDY 2

Because Study 1 used a cross-sectional design, conclusions about possible direction of effects cannot be drawn. To address this limitation, Study 2 used a longitudinal design to examine whether ageist attitudes toward co-workers predicted decreases in the prejudice holders' reported quality of intergroup contact and organizational identification and increases in their counterproductive behaviors over a 3-month period. A second goal of the study was to explore whether ageism adversely affects prejudice holders' vitality at work over time, both directly and indirectly through the quality of intergroup contact. Given that Study 1 did not provide support for a relation between ageism and OCB nor for the mediational role of intergroup anxiety, both OCB and intergroup anxiety were excluded from Study 2 analyses.

## 3.1 | Method

### 3.1.1 | Participants and procedure

Participants comprised 172 employees of a large Italian company<sup>8</sup> with sites throughout Italy who provided data at two times (T1 and T2) separated by a 3-month interval.

Participants' sociodemographic characteristics at T1 were similar to those reported by Study 1 subjects. Specifically, they ranged in age from 24 to 61 years ( $M = 44.56$ ;  $SD = 8.86$ ); a majority were males (61%), had a high school education (58%), worked full time (90%), had permanent contracts (92%), and worked in a multiage team (76%), having on average 6.48 members belonging to the age outgroup.

A multivariate analysis of variance revealed that participants who provided data at both waves ( $n = 172$ ) did not differ, with respect to any of the variables investigated (all  $p$  values  $>.05$ ), from those individuals who dropped out of the Study after Time 1 ( $n = 66$ ).

Participants were recruited using the same procedure described in Study 1.

### 3.1.2 | Measures

Participants completed measures of ageism at T1 and measures of quality of intergroup contact, counterproductive behaviors, organizational identification, and vitality at work at both waves.

Applying the same procedure used in Study 1, we asked participants younger than 45 years ( $n = 78$ ) to answer items in the ageism and quality of intergroup contact scales that referred to "old workers", whereas participants 45 years or older answered the same items referring to "young workers".

#### *Vitality at work*

Vitality experienced at work in the last month was assessed with the 5-item vitality subscale of the thriving at work measure developed by Porath, Spreitzer, Gibson, and Garnett (2012) (e.g., "At work I feel alive and vital," "At work I have energy and spirit"). Responses were provided on a 6-point scale (1 = completely disagree, 6 = completely agree) ( $\alpha = .86$  at T1 and  $.87$  at T2).

The measures of ageism ( $\alpha = .90$ ,  $.80$ , and  $.90$  for the cognitive, affective, and behavior components, respectively), quality of intergroup contact ( $\alpha = .84$  at T1 and  $.89$  at T2), organizational identification ( $\alpha = .73$  at T1 and  $.82$  at T2), and counterproductive behaviors ( $\alpha = .70$  at T1 and  $.67$  at T2) were identical to those used in Study 1.

### 3.1.3 | Data analytic strategy

A model in which ageism at T1 predicted quality of intergroup contact, counterproductive behaviors, organizational identification and

<sup>8</sup>The most represented departments were commercial (19%), administrative (15%), maintenance (13%), production (12%), and logistic (11%).



vitality at T2 (both directly and indirectly through quality of intergroup contact at T2), when controlling for their baseline levels, was estimated via EQS 6.2 (Bentler, 2008). Owing to our sample size the model hypothesized was tested using measured variables rather than latent variables, except for ageism whose three composite scores were entered as the manifest indicators for the underlying latent construct.

To reduce the impact of nonnormality and test differences across ageism targets we relied on the same techniques and procedures utilized in Study 1.

### 3.2 | Results and discussion

Descriptive statistics and correlations among studied variables are presented in Table 2.

Similar to Study 1, participants reported on average low levels of intergroup anxiety and counterproductive behaviors, from low to moderate levels of ageism (depending on its component), and medium-high levels of quality of contact and organizational identification; the levels of vitality were medium-high as well. When “younger” participants (less than 45 years) were compared to “older” participants (45 years or above), they reported significantly higher levels of affective and behavioral ageism (cognitive component:  $M_{\text{young}} = 3.13$ ,  $M_{\text{old}} = 3.07$ ,  $t$  test = 0.367,  $ns$ ; affective component:  $M_{\text{young}} = 2.52$ ;  $M_{\text{old}} = 2.26$ ,  $t$  test = 2.286,  $p = .024$ ; behavioral component:  $M_{\text{young}} = 3.69$ ;  $M_{\text{old}} = 2.95$ ,  $t$  test = 4.786,  $p = .000$ ), more counterproductive behaviors (T1:  $M_{\text{young}} = 2.11$ ;  $M_{\text{old}} = 1.76$ ,  $t$  test = 2.837,  $p = .005$ ; T2:  $M_{\text{young}} = 2.00$ ;  $M_{\text{old}} = 1.73$ ,  $t$  test = 2.494,  $p = .014$ ), and poorer quality of contact (T1:  $M_{\text{young}} = 4.48$ ;  $M_{\text{old}} = 4.77$ ,  $t$  test = -2.172,  $p = .031$ ; T2:  $M_{\text{young}} = 4.51$ ;  $M_{\text{old}} = 4.89$ ,  $t$  test = -2.867,  $p = .005$ ).

Most correlations were significant and in the expected direction.

The model hypothesized had an adequate fit ( $S-B\chi^2(31) = 60.071$ ,  $p = .001$ , R-CFI = .946; R-RMSEA = .074; R-AIC = -1.929) and is displayed in Figure 2.<sup>9</sup>

Three alternative models were tested as well. In the first, the order between quality of intergroup contact at T2 and vitality/identification/CWB at T2 was reversed. This model showed a poorer fit than the hypothesized model ( $B-\chi^2(29) = 66.472$ ,  $p = .000$ , R-CFI = .931; R-RMSEA = .087; B-AIC = 8.472). In the second model, quantity of intergroup contact was, as in Study 1, entered as a covariate of quality of intergroup contact to control its effects on outcome variables. This model yielded a fit comparable to that of the hypothesized model which is therefore preferred for the sake of parsimony ( $S-B\chi^2(37) = 70.747$ ,  $p = .001$ , R-CFI = .940; R-RMSEA = .074;

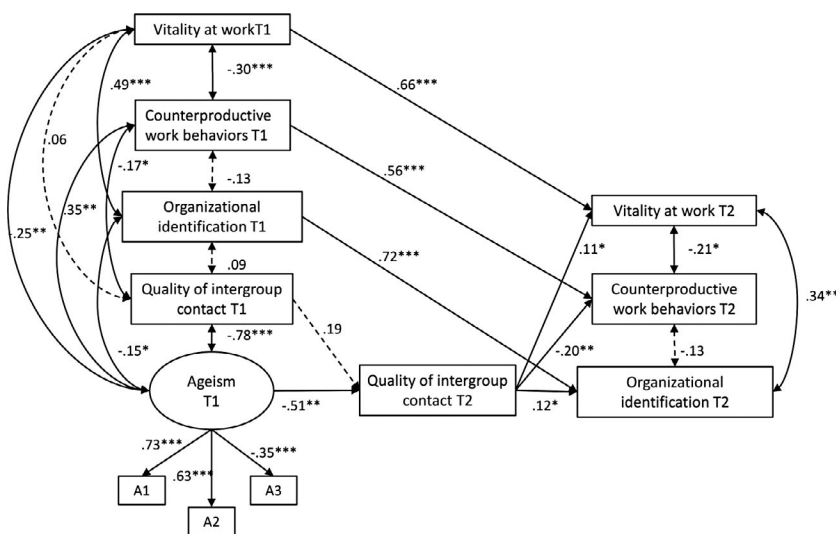
R-AIC = -3.253). The alternative model showed that the strength of the links between contact quality and outcomes variables was substantially unchanged after controlling for contact quantity ( $\beta$ s = .13\* for vitality at work, -.19\*\* for CWB, .09\* for organizational identification). Very similar findings were obtained when subjects experiencing no contact in both measurement occasions (1.2%) were removed from the analysis ( $B-\chi^2(37) = 70.882$ ,  $p = .001$ , R-CFI = .939; R-RMSEA = .074; R-AIC = -3.119;  $\beta$ s = .13\* for vitality at work, -.19\*\* for CWB, .09\* for organizational identification). In the third model, ageism at T2 (assessed through the same measures used at T1;  $\alpha = .93$ ) was entered as a further mediator between quality of intergroup contact at T1 and vitality/identification/CWB at T2, so as to compare the mediating role of quality of intergroup contact with that of ageism. In the model, prejudice at T2 was allowed to covary with quality of intergroup contact at T2 and corresponding factor loadings on prejudice were set to be equal across T1 and T2 to reflect measurement invariance over time. Even though the Lagrange multiplier (LM) test indicated that equality constraints were correctly imposed, this model also showed a poorer fit than the hypothesized model ( $B-\chi^2(59) = 144.080$ ,  $p = .000$ , R-CFI = .907; R-RMSEA = .093; R-AIC = 26.080). Specifically, inspection of parameters indicated that, while controlling for baseline levels, quality of intergroup contact at T1 was not significantly related to ageism at T2, but ageism at T1 significantly predicted quality of intergroup contact at T2. Even though these last results must be regarded as tentative because of the low ratio of participants to parameters estimated (3.7), these supplementary analyses are consistent with the hypothesized model reported in Figure 2. At the same time, they do not rule out the possibility that quality of contact significantly affects ageism over a shorter frame of time. In fact, when in the second alternative model the cross-lagged effects between ageism and contact were replaced by synchronous effects at T2 (thereby estimating a non-recursive model), the path from contact at T2 to ageism at T2 was significant ( $\beta = -.16^*$ ), suggesting that the effect of intergroup contact on ageism may occur over a relatively shorter time frame than 3 months ( $B-\chi^2(60) = 150.554$ ,  $p = .000$ , R-CFI = .901; R-RMSEA = .095; R-AIC = 30.554).

Inspection of the hypothesized model parameters indicates that ageism was concurrently associated with quality of intergroup contact and significantly predicted it over time. In addition, ageism was related to CWBs, both concurrently and longitudinally through quality of intergroup contact ( $\beta = .10$ ,  $p = .027$ ). Finally, ageism was concurrently related to vitality at work and organizational identification and marginally predicted them over time indirectly, through quality of intergroup contact ( $\beta = -.06$ ,  $p = .098$  and  $\beta = -.06$ ,  $p = .083$ , respectively). Constraining all parameters across the two groups with different ageism targets (younger vs. older workers) yielded only a significant difference between them: the stability of quality of intergroup contact over time was significantly stronger when the ageism targets were older workers ( $\beta = .43$ ,  $p = .002$ ) rather than younger workers ( $\beta = .00$ ,  $p = .994$ ) ( $S-B\chi^2(84) = 116.724$ ,  $p = .011$ , R-CFI = .941; R-RMSEA = .068; R-AIC = -51.276). It is possible that older workers' evaluations of their interactions with younger

<sup>9</sup>The weak relation between contact at T1 and contact at T2 ( $\beta = 0.19$ ) does not suggest a lack of stability over time (in fact, as reported in Table 2, the two are correlated 0.58\*\*\*), rather that this stability is probably due to the strong cross-sectional correlation between ageism and contact at T1 (-0.78\*\*\*). Similarly, when in the estimated model we replaced the correlation between ageism and contact at T1, with two directional paths (one from contact to ageism and one from ageism to contact), we found that that contact at T1 was related to contact at T2 through the mediation of ageism at T1 (indirect effect = 0.41\*\*\*, overall stability effect = 0.60\*\*\*) ( $B-\chi^2(30) = 52.541$ ,  $p = .007$ , B-CFI = 0.958; B-RMSEA = 0.066; R-AIC = -7.459).

**TABLE 2** Study 2—Descriptive statistics and Pearson correlations among studied variables

		<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1.	Prejudice (affective) T1	2.38	.75	–									
2.	Prejudice (cognitive) T1	3.10	.97	.46***	–								
3.	Prejudice (behavior intentions) T1	3.29	1.08	.29**	.12	–							
4.	Quality of intergroup contact T1	4.64	.88	–.56***	–.49***	–.28***	–						
5.	Organizational identification T1	5.00	.91	–.18*	.03	–.19*	.09	–					
6.	Counterproductive behaviors T1	1.92	.84	.19*	.31***	.18*	–.17*	–.13	–				
7.	Vitality T1	4.31	1.03	–.24**	–.06	–.13	.06	.49***	–.30***	–			
8.	Quality of intergroup contact T2	4.72	.90	–.46***	–.43***	–.23**	.58***	.07	–.20*	.14	–		
9.	Organizational identification T2	5.05	1.04	–.16*	.08	–.10	.13	.74***	–.14	.48***	.16*	–	
10.	Counterproductive behaviors T2	1.85	.73	.25**	.30***	.05	–.13	–.05	.61***	–.26**	–.31***	–.15*	–
11.	Vitality T2	4.46	.99	–.15*	–.06	–.05	.12	.46***	–.26**	.71***	.20**	.58***	–.34***

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ **FIGURE 2** Study 2—Structural equation model illustrating longitudinal relationships between ageism, quality of intergroup contact, counterproductive work behaviors, organizational identification, and vitality at work. Standardized coefficients (betas) are reported

colleagues are more variable because younger workers are generally perceived as more flexible, less predictable, and bound to routine than older workers. Also, due to work mobility and unstable employment which primarily involve younger generations, older workers are more likely than younger ones to interact over a 3-month period with new young colleagues.

Overall, the results show that the more employees held prejudices toward younger or older workers the more they experienced increasingly negative interactions with them over time, which negatively affected behaviors toward all co-workers and, marginally, their vitality at work and organizational identification. Specifically, independent of their age ingroup, employees holding ageist attitudes enacted more counterproductive behaviors toward all colleagues and, to a lesser extent, felt lower vitality and identified less with their organization over a 3-month period.

The current findings are consistent with those of Study1 in that ageism not only appeared to worsen interactions with co-workers belonging to the age outgroup but also increases harmful behaviors

toward persons in the organization, regardless of whether they belong to the age outgroup or ingroup. The very high temporal stability of vitality ( $\beta = .66$ ) and organizational identification ( $\beta = .72$ ) may have reduced the size of the longitudinal effects of ageism on them. Nonetheless, the present findings are also consistent with the idea that ageism may be detrimental for prejudiced workers and their organizations over time as it weakens their enthusiasm and experienced vigor and fosters disidentification with the organization.

## 4 | GENERAL DISCUSSION

In the present research we examined ageism at work, considering both ageist prejudice directed toward older workers, something commonly investigated in ageism studies, and toward younger workers, a less investigated form of prejudice. Unlike most studies, our research examined the effects of ageism on workers who hold ageist views, including their vitality at work, their organizational identification,

and their interactions with colleagues. In addition to investigating direct links, indirect links between ageist views and the outcomes enumerated via the mediating variables of intergroup anxiety and intergroup contact were examined. This was done in two studies: Study 1 explored the cross-sectional associations among variables, whereas Study 2 added a temporal component by testing the links between variables over a 3-month period.

The results of the two studies can be summarized as follows.

First, ageist prejudice was consistently related to the quality of intergroup contact, as evidenced by the cross-sectional data collected in Study 1 and the longitudinal data obtained in Study 2. This finding indicates that the quality of age-related intergroup contact can be a consequence of ageist prejudice, and not only an antecedent of it, in line with some longitudinal studies supporting a causal effect from prejudice to intergroup contact (Binder et al., 2009; Levin et al., 2003). As suggested by the prejudice literature, the finding can be explained by the fact that prejudiced people are less effective in communicating with outgroup members, less prone to behave positively and more disposed to act offensively toward them (Martínez, 2000; Ulrey & Amason, 2001; Van Zomeren et al., 2007). Of course, the fact that ageism has an effect on intergroup contact do not exclude the possibility of a reverse effect, which has been proved by countless research supporting the Allport's (1954) contact hypothesis.

Second, even though ageism was strongly related to intergroup anxiety, contrary to our hypotheses the negative effect of ageism on intergroup interactions was not explained by employees' anxiety about contact with different age colleagues. Perhaps employees' anxiety was primarily due to the fear that their negative attitudes would become manifest and would be openly condemned by their organization. The desire not to appear prejudiced could have led employees experiencing intergroup anxiety to enact compensatory strategies when interacting with the outgroup, such as self-censorship and concealment of negative feelings, which would stand in contrast to negative effects of less controllable anxiety induced behaviors, like those determined by personality traits or negative past personal experiences (Stephan, 2014). The findings strengthen the need for studies on the factors that give rise to intergroup anxiety when interacting with older and younger coworkers, possibly distinguishing their effects upon the self and other components of intergroup anxiety (Greenland et al., 2012).

Third, at the interpersonal level prejudice had an indirect negative impact on behaviors toward colleagues, which was mediated by the quality of intergroup contact. This pattern emerged in Study 1, where higher levels of ageism and of poor quality of intergroup contact corresponded to higher levels of counterproductive behaviors, a finding that also occurred over time as shown in Study 2. Thus, employees holding prejudice against younger or older co-workers had more negative interactions over time not only specifically with age outgroup colleagues, but with all co-workers regardless of age. In particular, employees holding ageist views enacted more CWBs, like arguing with co-workers, insulting them or complaining about trivial matters, all of which are harmful to the organization and its

members. This finding is consistent with the idea that the level of interpersonal conflict and negative emotions experienced at work as a consequence of being prejudiced induces employees to engage in more counterproductive behaviors (Dalal et al., 2009; Eatough et al., 2011; Eschleman et al., 2015; Matta et al., 2014; Yang & Diefendorff, 2009).

Fourth, at the organizational level ageism was negatively related to organizational identification in Study 1 and marginally predicted it over time in Study 2 through the mediating variable of quality of intergroup contact. Ageist attitudes undermined interactions among different age colleagues which in turn slightly reduced their identification with the organization. These findings are consistent with longitudinal studies showing that the negative evaluation of an age outgroup lowers the attractiveness of multiage teams and fosters disidentification with them (Liebermann, Wegge, Jungmann, & Schmidt, 2013).

Fifth, at the personal level ageism was negatively correlated to thriving at work and had a marginal association with it over time, mediated by the quality of intergroup contact. The findings are in line with some experimental evidence that prejudice has a negative impact not only on its targets but also on the health of those holding such views and their interactions with the outgroup (e.g., Mendes et al., 2007). At the same time, they extend prior findings by suggesting that the deleterious effects of holding prejudicial views extend beyond social interactions with the victimized outgroup as they challenge workers' overall sense of being energized and having a zest for work. The results also indicate that the negative implications of ageism for worker's vitality are at least partly due to deterioration of the quality of interactions with the age outgroup. This is consistent with existing research showing that conflictual relationships among coworkers are potential stressors that impair well-being and have a negative impact on job satisfaction and mood at work (Danna & Griffin, 1999; Meier, Gross, Spector, Semmer, & Hurrell, 2013; Meier, Semmer, & Gross, 2014). Another possible mediator of the relationship between prejudice and vitality, which future studies might investigate, is self-control. In fact, the negative effects of prejudice on health may also be explained by the efforts of prejudiced individuals to control their prejudice from becoming apparent. The self-control of prejudice, like every activity to override pre-existing patterns of response, involves a cognitive cost (a phenomenon known as ego depletion; Baumeister, Bratslavsky, Muraven, & Tice, 1998) which results in more stress and less vitality (Legault & Green-Demers, 2009).

The small longitudinal effects found in Study 2 in relation to identification and vitality do not provide conclusive evidence regarding the hypothesized negative consequences of ageism on organizational identification and vitality, nevertheless they are consistent with them. It is also worth noting that these effect sizes might be due to the high stabilities of the variables over time, which likely reflected not only the short time frame (3 months) studied, but also the extremely stable and favorable work conditions of the workers studied (the large majority had permanent contracts and strongly identified with the organization). Therefore, we suggest that future

investigations avoid these limitations by adopting a longer time frame and sampling more heterogeneous work conditions or jobs, and more females. For example, it could be that jobs requiring greater physicality might provide a context to display greater ageism toward older workers, whereas those which require a more pleasant physical appearance might be a context to show greater ageism toward older female workers who are subject to the so-called double standard (they are exposed to a greater degree of ageism than men through sexism and social standards that create unrealistic expectations for women in terms of their physical appearance; Braithwaite, 2002; Hatch, 2005). In addition, it is advisable that future research more accurately assess participants' working conditions (e.g., duration of employment in the organization, salary, benefits, and promotions) which are likely to impact both interpersonal and organizational variables. For instance, there is reason to believe that workers employed in the same company for a longer time are more identified with it and experience greater satisfaction in relationships with colleagues (e.g., Koike, Gudykunst, Stewart, Ting-Toomey, & Nishida, 1988).

It also must be noted that the findings just summarized were obtained using an ageism measure that included some dimensions specifically designed for the present studies. The measure has the merit of assessing three different components of prejudice (cognitive, affective, and behavioral), allowing comparisons between younger and older targets, and having good reliability and concurrent and predictive validity. Nonetheless, its psychometric properties need to be further evaluated, especially in reference to the content validity of the behavioral component, which actually detects the absence of prosocial intentions more than the presence of discriminatory intent.

Despite these shortcomings, the present studies are among the first to show that ageism has equally detrimental outcomes for both older and younger prejudiced workers, and that they are likely to damage the organization as a whole in several ways. A first way involves the proliferation of CWBs which harm cooperation in work teams. A second is through disidentification from the organization which amplifies intentions to quit and increases worker turnover (Bentein, Guerrero, Jourdain, & Chênevert, 2017). A third way concerns an increased sense of apathy and fatigue among employees, which reduces commitment toward one's duties, worsens individual task performance, and increases absenteeism from work (Carmeli & Spreitzer, 2009; Porath et al., 2008).

These findings have some important implications from a practical perspective. They could be useful for workers, companies, and other stakeholders to raise awareness of the presence, the pervasiveness, and the many negative consequences of ageism in the workplace and to motivate them to reduce it. Given that awareness is the first condition necessary for controlling and changing undesirable attitudes and behaviors (Bargh, 1999), workers must be helped to become aware of when attitudes or behaviors are prejudiced and why such prejudiced responses are harmful and should be avoided. In fact, when people become aware of personally held biases and are motivated to be non-prejudiced (Monteith, 1993; Monteith, Arthur, & Flynn, 2010a; Monteith, Mark, & Ashburn-Nardo, 2010b; Moskowitz & Li, 2011), they tend to change their attitudes and behaviors to be

more egalitarian. Monteith and colleague's self-regulation of prejudice model argues that this happens because the recognition of a discrepancy between one's non-prejudiced goals and one's biased attitudes or behaviors leads people to experience general discomfort and negative self-directed affect (e.g., guilt). This then activates self-regulatory processes that facilitate the ability to bring automatic processes and responses related to a stereotyped outgroup under control (Monteith & Mark, 2009). By showing that the negative effects of ageism are self-relevant for both ageist workers and their organization, the present research can contribute to motivating both workers and management to adopt strategies to counter it.

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## APPENDIX

Items for the cognitive dimension of ageism, their origin, and psychometric properties.

	Study 1	Study 2 (T1)	Study 2 (T2)
<i>Factor loadings</i>			
1. Many young (old) workers are actually seeking special favors, such as hiring policies that favor them, under the guise of asking for "equality" <sup>a</sup>	.62	.61	.75
2. Most young (old) workers pay lip service to equality but can't treat others as equals <sup>b</sup>	.67	.76	.84
3. Young (old) workers get offended too easily <sup>a</sup>	.75	.72	.72
4. Young (old) workers exaggerate problems they have at work <sup>a</sup>	.72	.83	.79
5. When young (old) workers lose in a fair competition, they typically complain about being discriminated against <sup>a</sup>	.74	.76	.85
6. Young (old) workers act like babies when they are sick <sup>b</sup>	.54	.57	.59
7. When young (old) workers work hard to "help" their colleagues they are often trying to prove they are better than them <sup>b</sup>	.60	.66	.77
8. Young (old) workers usually try to dominate the conversation when they talk to their colleagues <sup>b</sup>	.66	.68	.72
9. It's not very easy to deal with young (old) colleagues at work <sup>c</sup>	.57	.70	.73
10. Working with young (old) colleagues takes a lot of patience <sup>c</sup>	.60	.64	.68
<i>% of variance explained</i>			
	42	49	56
<i>Cronbach's Alpha</i>			
	.88	.90	.93

Note: Exploratory Factor Analyses (method of extraction: principal axis factoring) were performed on Studies 1 and 2 data to identify underlying dimensions, amount of variance explained and factor loadings. Confirmatory factor analyses (CFAs) were also performed on Study 2 data to test for factorial invariance across measurement waves. CFAs revealed a strong factorial invariance (Meredith, 1993) of the measure over time ( $S-B\chi^2(178) = 321.921, p = .000, R-CFI = .923; R-RMSEA = .075$ ).

<sup>a</sup>Item adapted from the Ambivalent Sexism Inventory (Glick & Fiske, 1996).

<sup>b</sup>Item adapted from the Ambivalence toward Men Inventory (Glick & Fiske, 1996).

<sup>c</sup>Ad-hoc item.