Age and Antiaging Technique Influence Reactions to Age Concealment

Alison L. Chasteen, Nadia Y. Bashir, Christina Gallucci, and Anja Visekruna

Department of Psychology, University of Toronto, Ontario, Canada.

Objectives. Despite the rapid expansion of the antiaging cosmetic industry in recent years, little is known about the current social judgment consequences of concealing one’s age. In two studies, we examined perceivers’ evaluations and mental representations of individuals who engage in age concealment.

Methods. In Study 1, we assessed young and older adults’ reactions toward a middle-aged or older adult target who engaged in mild or major forms of age concealment. In Study 2, we examined the social consequences of age concealment in greater detail by including younger middle-aged targets and expanding the range of concealment procedures used.

Results. Targets received less favorable evaluations (a) to the extent that they engaged in invasive procedures, (b) when they were viewed by young adults rather than by older adults, and to some degree, (c) if they were middle-aged adults rather than older adults. Participants held different expectations concerning aging and age concealment depending on the age of the target and the antiaging technique used.

Discussion. These findings suggest that reactions to age concealment vary according to the concealment technique used, the age of the perceiver, and to some extent, the age of the target.

Key Words: Age—Age concealment—Mental representations—Social judgments.

To avoid the stigma associated with old age (Hummert, Garstka, & Shiner, 1997), middle-aged and older adults may conceal their age using antiaging products and procedures. Although Americans invest in more than 6.8 million invasive antiaging procedures each year (American Society of Plastic Surgeons [ASPS], 2010), age concealment may not guarantee successful impression management. Given that perceivers typically evaluate individuals who perform undesirable behaviors negatively (Ybarra, 2002) and that age concealment may be socially undesirable (Ballard, Elston, & Gabe, 2005), perceivers may view individuals who conceal their age unfavorably. Indeed, research by Harris (1994) suggests that individuals who conceal their age receive less favorable evaluations than those who do not conceal their age. Given the recent expansion of the antiaging industry (McCullough & Kelly, 2006), however, Harris’ findings may be dated. Although Schoemann and Branscombe (2010) verified that perceivers still evaluate individuals who conceal their age less favorably than those who do not, their targets used both minor and invasive antiaging methods, which may have distinct evaluative implications. To clarify the consequences of age concealment, we systematically assessed perceivers’ evaluations of individuals who use minor versus invasive antiaging techniques.

Examining reactions to individuals who use antiaging techniques can also elucidate the extent to which perceivers incorporate age concealment behaviors into their mental representations of middle-aged and older adults, an increasingly likely tendency given the growing popularity of antiaging techniques (ASPS, 2010). Person perception researchers often assess individuals’ mental representations of social groups by examining the perceived typicality of group members with various attributes; assessing the extent to which targets conform to expectations for a typical member of their group indicates the degree to which behaviors exhibited by the target are perceived to be characteristic of the group (Bettencourt, Dill, Greathouse, Charlton, & Mulholland, 1997). Thus, to examine perceivers’ expectations about age concealment among middle-aged and older adults, we assessed the degree to which individuals who use various antiaging techniques seem typical of their age group.

Minor, over-the-counter antiaging products have become particularly popular in recent years (McCullough & Kelly, 2006) and may, accordingly, seem more acceptable than invasive methods. Thus, perceivers may view individuals who use minor techniques more favorably and as more typical of their age group than those who undergo invasive procedures. Given that age is central to the theme of age concealment, perceivers’ impressions may also vary by target age and perceivers’ age, factors largely unexplored in past research. Age concealment is most common among middle-aged adults (ASPS, 2010). Thus, perceivers may view middle-aged adults who conceal their age to be more typical of their age group than older adults who do the same. Furthermore, because individuals particularly dislike noticeably artificial appearances (Clarke & Griffin, 2007) and youthful appearances acquired by age concealment may appear...
less natural for older rather than middle-aged adults, perceivers may evaluate older adults who conceal their age less favorably. With respect to perceiver age, because aging is an immediate reality for older adults, older adult perceivers may view age concealment to be more socially desirable and common than do young adults. Thus, older adults may evaluate individuals who use antiaging techniques more favorably and perceive them to be more typical of their age group.

In two studies, we assessed the impact of concealment technique, target age, and perceiver age on perceivers’ reactions to individuals who conceal their age. Given that age concealment is most common among women (Harris, 1994), we focused on reactions to women. In Study 1, we assessed whether young and older adults evaluate targets differently depending on the target’s age (middle-aged or older adult) and the concealment technique used (mild or major). We measured participants’ overall feelings toward the target, a global evaluative index commonly used in person perception research (e.g., Bettencourt et al., 1997), and their perceptions of the target’s vanity, a domain-specific evaluative index. We also examined mental representations of middle-aged and older adults with respect to aging and age concealment by assessing the perceived typicality of middle-aged and older adults who use various concealment techniques. In Study 2, we further examined these evaluations and mental representations by including younger middle-aged targets and a broader range of procedures (natural, mild, major, and extreme). Across studies, we predicted that targets would receive less favorable evaluations and seem less typical of their age group (a) to the extent that they used invasive procedures, (b) if they were older adults rather than middle-aged adults, and (c) when viewed by young adults versus older adults.

**STUDY 1**

**Method**

**Participants.**—Participants were 131 young and 132 older adult females. Nine young and 10 older adults were excluded because they incorrectly recalled the target’s age, yielding final samples of 122 young adults ($M_{age} = 18.75$ years, $SD = 1.43$) and 123 older adults ($M_{age} = 69.50$ years, $SD = 6.00$). The two age groups had similar educational backgrounds, $t(226) = −1.38, p = .17$ ($M_{young} = 4.07$, approximately 13 years, $M_{old} = 4.36$, approximately 13.5 years). Young adult participants were recruited from the introductory psychology course at the University of Toronto and received course credit for their participation. Older adults were recruited from the university’s Adult Volunteer Pool and were paid $12.

**Procedure.**—Participants were tested individually or in groups of up to four participants. Upon arrival, participants were greeted by a female experimenter, who introduced the computer-administered task as an experiment examining impression formation. They were told that they would read about a randomly selected target. In reality, participants read about a female target who was a middle-aged (age 50 years) or older (60 or 70 years) adult who used either mild (facial creams) or major (Botox injections) antiaging techniques (see Supplementary Material). Participants then completed measures assessing their feelings toward the target and their perceptions of the target’s vanity and typicality, followed by some demographic questions, and were then fully debriefed and compensated.

**Measures.**—**Overall feelings toward the target.** Overall evaluations of the target were assessed by creating a composite of nine items assessing reactions and emotions felt toward the target (e.g., warm, contempt [reverse-coded]; Cronbach’s alpha = .81). Participants indicated their feelings on a 9-point scale, ranging from (1) not at all/very unfavorable to (9) extremely/very favorable.

**Vain.** Six items assessed the target’s vanity (e.g., vain, fake, foolish) along a 9-point scale that ranged from (1) not at all to (9) extremely (Cronbach’s alpha = .87).

**Typicality.** Three items (e.g., typical, good fit) assessed the degree to which participants felt the target was typical of her age group (Cronbach alpha = .80). A 9-point scale ranged from (1) atypical (poor fit) to (9) typical (good fit).

**Results**

We conducted separate 2 (Participant Age) × 3 (Target Age) × 2 (Concealment Type) analyses of variance (ANOVAs) on the mean ratings of overall feelings toward the target, vanity, and typicality. We used post hoc Tukey’s tests or $t$ tests, where appropriate, to identify significant differences.

Consistent with our hypotheses regarding evaluations, older adults held more positive views of the targets than younger adults for both overall feelings, $F(1, 233) = 42.95$, $p < .001$, $η^2_p = .16$, and perceived vanity, $F(1, 233) = 33.06$, $p < .001$, $η^2_p = .12$ (see Table 1). Also in line with our predictions, participants had more favorable views of targets who used mild rather than major concealment techniques for both overall feelings, $F(1, 233) = 22.20$, $p < .001$, $η^2_p = .09$, and vanity, $F(1, 233) = 22.90$, $p < .001$, $η^2_p = .09$. No other effects were significant, all $F$s < 2.05.

Analyses of typicality ratings also revealed patterns consistent with our predictions regarding mental representations of aging and age concealment. Older adults rated the targets as more typical than younger adults (see Table 1), $F(1, 233) = 35.47$, $p < .001$, $η^2_p = .13$, and participants rated targets who used mild concealment techniques as more typical than those who used major techniques, $F(1, 233) = 49.45$, $p < .001$, $η^2_p = .18$. As well, participants rated the
REACTIONS TO AGE CONCEALMENT

middle-aged (50 years old) target as more typical than both the 60-year-old and 70-year-old targets, \( p < .05, F(2, 233) = 6.89, p < .01, \eta^2_p = .06.\)

These effects were moderated by a significant Participant Age \times Target Age \times Concealment Type interaction, \( F(2, 233) = 3.52, p < .05, \eta^2_p = .03.\) Separate two-way ANOVAs for each age group revealed a significant Target Age \times Concealment Type interaction for young adults, \( F(2, 116) = 3.73, p < .05, \eta^2_p = .06,\) but not for older adults, \( p > .35.\) In addition to rating mild targets as more typical than major targets, \( F(1, 116) = 27.34, p < .001, \eta^2_p = .19,\) and the 50-year-old target as more typical than the other targets, \( F(2, 116) = 3.24, p < .05, \eta^2_p = .10,\) young adults rated the 50-year-old mild and major targets as equally typical, \( p > .40,\) but viewed the mild concealment users as more typical than the major users for 60- and 70-year-old targets \( ps < .001;\) see Figure 1a). Older adults only differentiated targets by concealment type, \( F(1, 117) = 22.24, p < .001, \eta^2_p = .16,\) rating mild targets as more typical than major targets (see Figure 1b).

Discussion

The results of Study 1 indicate that perceivers’ impressions of individuals who conceal their age vary by concealment technique, perceiver age, and to some extent, target age. Perceivers evaluated targets more favorably and viewed them to be more typical of their age group if targets used mild rather than major techniques and if perceivers were older adults rather than young adults. Although perceivers viewed middle-aged targets to be more typical than older targets, they did not evaluate these targets differently, possibly due to the small age differences between targets (i.e., 50, 60, and 70 years old). In a second study, therefore, we compared impressions of younger middle-aged (40s) and older (60s) targets. Furthermore, because the consequences of using natural (e.g., avoiding sun exposure) and extreme (e.g., surgery) antiaging methods may differ from those of mild and major concealment, we also examined perceivers’ impressions of targets who used a broader range of procedures.

Study 2

Method

Participants.—Participants were 53 young and 52 older adult females. Two young and three older adults were excluded because they incorrectly recalled the targets’ age groups, yielding final samples of 51 young adults \( (M_{age} = 18.59 \text{ years}, SD = 1.25)\) and 49 older adults \( (M_{age} = 69.57 \text{ years}, SD = 5.59).\) The two age groups differed on our
measure of past education, \( t(98) = -5.01, p < .001 \) (\( M_{\text{young}} = 4.92, \) approximately 13.5 years, \( M_{\text{old}} = 7.31, \) approximately 16 years). Participant recruitment methods and compensation were similar to those of Study 1.

Procedure.—The procedure resembled that used in Study 1, except participants were randomly assigned to read about either four middle-aged (40s) or four older (60s) targets who used natural (e.g., avoid sun exposure), mild (e.g., facial creams), major (e.g., Botox), or extreme (e.g., brow lift) antiaging techniques (see Supplementary Material). The order of the vignettes was randomized so that participants read about the four techniques in different orders. Participants then completed the same measures as in Study 1 and were debriefed and compensated.

Materials.—As in Study 1, there were acceptable reliabilities for the measures of feelings toward the target (range of Cronbach’s alpha across four targets = .70–.84) and perceived vanity (Cronbach’s alpha range = .85–.89). We assessed typicality in two ways, with participants first rating on two items (from [1] atypical to [9] typical) the degree to which the targets were typical of others in their respective age group (Cronbach’s alpha = .81). Participants then used the same 9-point scale to rate the degree to which each of the four antiaging procedures was considered typical for that age group to use.

Results

We conducted a series of 2 (Participant Age) \( \times \) 2 (Target Age) \( \times \) 4 (Concealment Type) repeated measures ANOVAs to explore the effects of these variables on both evaluations and perceived typicality (see Table 1). We used post hoc paired or independent samples \( t \) tests, where appropriate, to identify significant effects.

In terms of overall feelings toward the target, both participant age and concealment type yielded findings consistent with our predictions. As in Study 1, older participants had more favorable feelings toward the targets than did younger participants, \( F(1, 96) = 15.30, p < .001, \eta^2_p = .14. \) As well, participants favored targets who used milder forms of concealment, \( F(3, 94) = 82.80, p < .001, \eta^2_p = .73, \) reacting most positively toward targets who used natural procedures, followed by mild, major, and extreme procedures (no difference between major and extreme, \( p > .11, \) but all other \( ps < .001 \)). In addition, participants responded more favorably toward the older than middle-aged targets, \( F(1, 96) = 3.95, p = .05, \eta^2_p = .04. \) No interactions were significant, all \( Fs < 1.45. \)

As for ratings of vanity, similar main effects of participant age, \( F(1, 96) = 14.38, p < .001, \eta^2_p = .13, \) and concealment type, \( F(3, 94) = 134.55, p < .001, \eta^2_p = .81, \) were obtained as in Study 1, with older adults viewing targets more favorably than young adults and all perceivers rating targets who used milder procedures as less vain than those who used more invasive procedures (see Table 1). In addition, there was a significant Participant Age \( \times \) Concealment Type interaction, \( F(3, 94) = 3.669, p < .05, \eta^2_p = .11 \) (see Figure 2a). Although young and older adults did not differ in their ratings of the major and extreme targets \( (ps > .21) \), young adults rated the mild and natural targets as vainer than did older adults \( (ps < .001) \). No other effects were significant, all \( Fs < 1. \)

In terms of perceivers’ mental representations of aging and antiaging techniques, there were no main effects of participant age or target age \( (ps > .40) \) on participants’ ratings of how typical the targets were of their respective age group. However, there was a marginally significant Participant Age \( \times \) Target Age interaction, \( F(1, 96) = 3.75, p = .056, \eta^2_p = .04, \) whereby young adults did not differentiate between middle-aged \( (M = 5.86) \) and older adult \( (M = 5.48) \) targets in their ratings \( (p = .46) \), but older participants did, rating the older targets \( (M = 6.22) \) as more typical than the middle-aged targets \( (M = 5.27), p < .05. \)

Participants’ ratings of how typical the four antiaging techniques were of the age group of targets they had read about showed that young adults viewed the techniques as more typical than did older adults, \( F(1, 96) = 4.68, p < .05, \)
individuals’ expectations about the use of different antiaging techniques by middle-aged and older adults, expectations that may differ by perceiver age. Indeed, although both young and older adults are more likely to include mild concealment, rather than invasive concealment, in their mental representations of middle-aged and older adults, young adults view natural techniques to be less typical than mild techniques, whereas older adults view them to be equally typical. Thus, young adults may be more likely to expect middle-aged and older adults to use some forms of nonnatural age concealment rather than to age naturally. Older adults, in comparison, may view these approaches to aging to be equally characteristic of middle-aged and older adults. In addition, although both young and older adults viewed 50-year-old targets to be more typical than 60-year-old targets, older adults viewed targets in their 40s to be particularly atypical. These differences in impressions of adults in their 40s and 50s suggest that at least some perceivers may have different expectations concerning age concealment for individuals in different decade age ranges within an age group. Whereas older adults may incorporate age concealment behaviors into their mental representations of 50-year-olds, who likely show signs of aging, they may be less likely to include these behaviors in their representations of individuals in their 40s, who may seem somewhat young to use antiaging techniques.

Although perceivers evaluate women who use mild techniques relatively leniently, all appearance-enhancing behaviors may be unacceptable for men. Indeed, men who use mild methods receive less favorable evaluations than women who use these techniques (Harris, 1994). Examining reactions to men and women who use mild versus invasive methods will clarify whether target gender moderates the evaluative consequences of concealment technique.

Given that most beauty procedures marketed for older women are framed as antiaging techniques (Clarke & Griffin, 2007), perceivers likely assume that older women who use cosmetic techniques do so to fight aging. The effects of concealment technique observed in our research may, however, reflect a tendency for perceivers to evaluate individuals who use invasive procedures less favorably than those who use mild procedures, regardless of whether these procedures are antiaging or general beautification techniques. Future research that examines this possibility will provide greater insight into evaluations of individuals who use cosmetic procedures.

Despite the rapid expansion of the antiaging cosmetic industry, the present findings suggest that age concealment has not yet become universally accepted. Indeed, individuals who are tempted to conceal their age to fight off the effects of aging should consider the possibility that they may encounter other, unanticipated, social consequences.

Discussion
The results of Study 2 generally replicated the effects of concealment technique and participant age observed in Study 1. With respect to typicality, however, young adult perceivers viewed major and extreme antiaging procedures to be more typical for middle-aged and older adults than did older adult perceivers. This finding may differ from those obtained using the other typicality measures in Studies 1 and 2 because this index assessed procedure typicality, whereas the others assessed target typicality. The discrepancy may also stem from the inclusion of younger middle-aged targets in Study 2 and differences between young and older adult perceivers in terms of expectations for age concealment among individuals in their 40s. Indeed, older adults viewed targets in their 40s to be particularly atypical, whereas young adults viewed them to be as typical as targets in their 60s. Despite these differences, however, both young and older adults evaluated targets in their 60s more favorably than those in their 40s. Overall, therefore, age concealment may be particularly disadvantageous for young middle-aged adults.

General Discussion
The results of Studies 1 and 2 indicate that reactions to individuals who conceal their age vary by concealment technique, perceiver age, and to some extent, target age. These findings extend past research by demonstrating that perceivers react more leniently toward individuals who use minor (i.e., natural and mild) rather than invasive (i.e., major and extreme) techniques and that older adults, who are currently coping with aging, evaluate individuals who conceal their age more favorably than do young adults for whom aging may be a distant concern. The present research also provides the first systematic comparison of middle-aged and older adult targets. Although age concealment is most common among middle-aged adults (ASPS, 2010), perceivers may evaluate middle-aged adults who conceal their age similarly (Study 1) or even less favorably (Study 2) than older adults who do the same.

Our findings also extend past research by elucidating individuals’ expectations about the use of different antiaging techniques by middle-aged and older adults, expectations that may differ by perceiver age. Indeed, although both young and older adults are more likely to include mild concealment, rather than invasive concealment, in their mental representations of middle-aged and older adults, young adults view natural techniques to be less typical than mild techniques, whereas older adults view them to be equally typical. Thus, young adults may be more likely to expect middle-aged and older adults to use some forms of nonnatural age concealment rather than to age naturally. Older adults, in comparison, may view these approaches to aging to be equally characteristic of middle-aged and older adults. In addition, although both young and older adults viewed 50-year-old targets to be more typical than 60-year-old targets, older adults viewed targets in their 40s to be particularly atypical. These differences in impressions of adults in their 40s and 50s suggest that at least some perceivers may have different expectations concerning age concealment for individuals in different decade age ranges within an age group. Whereas older adults may incorporate age concealment behaviors into their mental representations of 50-year-olds, who likely show signs of aging, they may be less likely to include these behaviors in their representations of individuals in their 40s, who may seem somewhat young to use antiaging techniques.

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Despite the rapid expansion of the antiaging cosmetic industry, the present findings suggest that age concealment has not yet become universally accepted. Indeed, individuals who are tempted to conceal their age to fight off the effects of aging should consider the possibility that they may encounter other, unanticipated, social consequences.

Supplementary Material
Supplementary material can be found at: http://psychsocgerontology.oxfordjournals.org/
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Correspondence
Correspondence should be addressed to Alison L. Chasteen, PhD, Department of Psychology, University of Toronto, 100 St. George Street, Toronto, ON M5S 3G3, Canada. E-mail: chasteen@psych.utoronto.ca.

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