

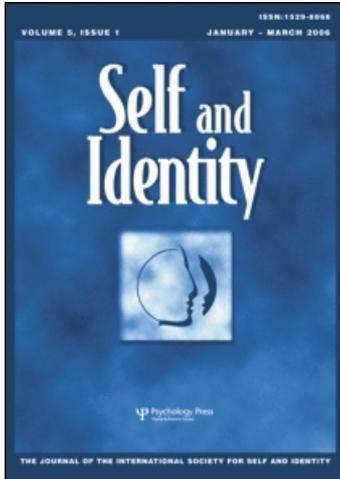
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Sunny Side Up: The Reliance on Positive Age Stereotypes in Descriptions of Future Older Selves

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This research investigates processes underlying selective self-stereotyping in the context of a future group membership. In two studies a narrative coding methodology allowed us to investigate the spontaneous use of positive and negative stereotypic content in young adults' descriptions of future aged selves. In Study 1, young adults relied more on positive than negative age stereotypes to construct older possible selves. In Study 2, participants asked to describe a feared aged self continued to evidence a positivity bias, such that their descriptions were more often characterized by concerns about missing out on or failing to attain positive age-related experiences than by concerns about negative events stereotypic of older adulthood. This pattern suggests that positivity biases underlying selective self-stereotyping operate at both stereotype activation and application stages of information processing.

Keywords: Aging; Positivity bias; Self-stereotyping; Stereotype activation.

Markus and Nurius (1986) coined the term *possible selves* to refer to representations of oneself in the future that take the form of vivid cognitions about the person one expects to become. Although possible selves are personalized in the sense that individuals envision events as happening to themselves, the content of these events is often shaped by consensually held views regarding what is indeed possible. Stereotypes may, for instance, constrain the types of possible selves generated by members of stigmatized and disadvantaged groups, causing them to rule out possibilities for themselves that are not prototypic of “people like us” (e.g., Kao, 2000; Lips, 2004; Osyerman & Fryberg, 2006). In other cases, possible selves involve a transition from one group to another (e.g., from young adulthood to old age), and it is likely that stereotypes regarding groups to which one expects to belong in the

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future may influence the generation of these possible selves. The current research was designed to investigate the nature of this influence and, in particular, to investigate biases in the activation and application of age-related stereotypes to younger adults' conceptions of their older adult selves.

Over two decades of research on possible selves, sparked by Markus and Nurius' (1986) landmark work, has established that people envision both hoped-for possible selves (selves we desire to become) and feared possible selves (selves we worry we will become; Cross & Markus, 1991; Frazier, Hooker, Johnson, & Kaus, 2000; Hooker, 1992; Hooker & Kaus, 1994; Ryff, 1991; Smith & Freund, 2002). Possible selves can serve as a source of motivation by providing incentives to either achieve hoped-for selves or avoid feared selves (e.g., Hooker & Kaus, 1992, 1994; Oyserman & Markus, 1990; Van Dellen & Hoyle, 2008), and individuals typically endorse more positive than negative events as possibilities for the future (Markus & Nurius, 1986; Newby-Clark & Ross, 2003). Although a great deal is known about the number and kinds of possible selves that individuals generate, very little work has explored the content of these thoughts as they relate to particular future group memberships (e.g., Packer, Chasteen, & Kang, 2009).

It is clear from past research that individuals do hold possible selves regarding specific group memberships they expect or plan to acquire in the future (e.g., the future employee self or the older adult self; Markus & Nurius, 1986). In an early study exploring the content of possible selves, Markus and Nurius (1986) asked college students to consider a list of prospects for the self (e.g., activities, traits and groups memberships). Participants then indicated which items they felt may describe them in the future. Sixty-five percent of respondents indicated that they thought about themselves in the future a great deal or all of the time, demonstrating the frequent nature of this activity for young adults. Importantly, respondents' inventories of possible selves were highly heterogeneous, reflecting future conceptions of the self at personal (traits, abilities, interests) and collective levels of identity (e.g., I could be a member of the media; I could be a business owner).

Self-stereotyping

Stereotypes can be conceptualized as cognitive tools that people employ to facilitate otherwise complex evaluation processes by applying global characteristics to all members of a social category (e.g., Macrae, Milne, & Bodenhausen, 1994). People often apply these efficient categorization schemes in reference to others, but a large literature on self-stereotyping finds that people also incorporate stereotypes about their social groups into their own self-concepts (e.g., Chasteen, 2005; Cheryan & Bodenhausen, 2000; Steele & Aronson, 1995; Wheeler & Petty, 2001). When currently held group memberships are salient, group members incorporate prototypic characteristics of the group into the self-concept in a process known as self-stereotyping or depersonalization (e.g., Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Interestingly, priming research has shown that, to the extent that they are linked to the self, activated stereotypes regarding groups to which individuals do not belong can also influence the self-concept (e.g., DeMarree, Wheeler, & Petty, 2005).

In the same way that individuals apply stereotypes to their current selves, they may also use stereotypes to describe their future selves. Much of what individuals know about groups to which they do not belong likely comes from widely held (if potentially inaccurate) beliefs about what people who belong to that group are like. Thus, to the extent that people lack information about what their lives will actually

be like in the future, they may draw upon stereotypes regarding a future group membership to inform their conceptions of future selves. This may be particularly true when future selves are temporally distant; as the distance of future events increases these events tend to be construed less in terms of concrete details and more in terms of global characteristics that capture the essential features of probable experiences (e.g., Packer & Cunningham, in press; Trope & Liberman, 2003).

In the current studies we investigated the extent to which young adults incorporate stereotypic conceptions of older adults into descriptions of their older adult possible selves. One reason for addressing this issue in the context of aging is that a great deal is known about the nature of the stereotypes regarding older adults. Importantly, the valence of these stereotypes is varied (Hummert, 1990, 1993; Hummert, Garstka, Shaner, & Strahm, 1994). People hold multiple stereotypes about older adults, reflecting beliefs that older people are warm but incompetent (Brewer, Dull, & Lui, 1981; Fiske, Cuddy, Glick, & Xu, 2002). Hummert et al. (1994) posited that "older adult" operates as a superordinate category that includes various stereotype subcategories. Young, middle-aged and older adults endorse the positive grandparent (e.g., enjoys life, generous), golden ager (e.g., affluent, wise), and conservative (e.g., proud, patriotic) subcategories as stereotypical of older adults. Across age groups, people also tend to agree that the following negative subcategories are stereotypical of older adults: impaired (e.g., forgetful, rambling of speech), despondent (e.g., burden to society, useless), shrew (e.g., ill-tempered, miserly), recluse (e.g., quiet, sedentary) and vulnerable (e.g., afraid of crime, suspicious of strangers).¹

Selective Self-stereotyping

If individuals do incorporate stereotypic information regarding future group memberships into conceptions of their possible selves, this is not to say that all stereotypic information will necessarily be activated or applied to the self once activated. Research on self-stereotyping with respect to current group memberships has identified biases or selectivity in the stereotype content that is used to characterize the self. Biernat, Vescio, and Green (1996), for instance, asked sorority members to rate how well traits stereotypic of sorority women in general described them personally. The results revealed that individuals selectively endorsed positive in-group stereotypes as describing the self and denied that negative in-group stereotypes were self-descriptive. In another study, Oswald and Lindstedt (2006) discovered that male and female participants who were aware of the content of gender stereotypes and endorsed the truth value of these stereotypes nevertheless reported that positive stereotypes were more self-descriptive than group-descriptive. In contrast, these individuals reported that negative gender stereotypes were more group-descriptive than self-descriptive.

Although this work indicates that self-stereotyping in the context of current in-groups is characterized by a positivity bias, it remains unclear whether this bias persists for conceptions of future in-groups. Past work in the domain of personal-level possible selves suggests that this may well be the case, having consistently demonstrated that individuals are unrealistically optimistic in their personal predictions for the future. For example, Newby-Clark and Ross (2003) asked individuals to list 10 events from their pasts and 10 events from their futures and to rate how much positive and negative affect they experienced or expected to experience during these events. The authors found that, even though participants acknowledged the highs and lows that marked their pasts, they anticipated that their

futures would be uniformly rosy. Markus and Nurius (1986) also observed a similar tendency for individuals to generate more positive than negative possible selves and to think about positive future roles more often than negative ones.

Nevertheless, prior research on positivity biases has tended to focus on possible selves in the relatively near future (at most 10 to 15 years hence; Hooker, 1992; Hooker & Kaus, 1992; Markus & Nurius, 1986; Oyserman & Markus, 1990; Van Dellen & Hoyle, 2008), and it is not clear how young adults will respond when asked to imagine future selves in old age (40 to 50 years in the future). While it is likely common for young college students to imagine early stages in their careers and family life (as this is what they are typically working toward), it is likely less common for them to imagine themselves in old age. The age stereotype literature suggests that negative stereotypic information is readily available when young adults consider their future aged selves. Hummert (1990) presented both young and older adult participants with 10 lists of traits related to 10 stereotypes about older adults. Participants were then asked to think about individuals who may possess each collection of traits and to select an age range (young-old, 55–59; middle-old, 60–74 or old-old, 75 and over) within which these individuals would likely fall. The authors discovered that, although young adults often envisioned young-old people as possessing positive stereotypic traits (e.g., interesting, wise), people in the middle-old and old-old age ranges were considered more likely to possess negative stereotypic traits.

The current research was, in part, designed to determine whether the positivity biases that characterize personal-level possible selves would extend to possible selves regarding old age. Given the robust nature of past findings on optimism in the content of future selves (e.g., Markus & Nurius, 1986; Newby-Clark & Ross, 2003), we predicted that there would be a positivity bias in participants' conceptions of older possible selves. However, we were particularly interested in the stage of processing at which this bias would occur. As Kunda and Spencer (2003) note, when one confronts a member of a social category (in this case the self as a member of the older adult age group), stereotypes related to that group may or may not come to mind. Further, when they do come to mind, stereotypes may or may not influence one's impression of the target (in this case the older adult self). The former process refers to stereotype activation, whereas the latter refers to stereotype application (i.e., their use following activation; see also Kunda & Sinclair, 1999). Drawing upon this key distinction in stages of processing, we were interested in whether individuals asked to reflect on older possible selves would activate the full range of positive and negative stereotypes attributed to older adults and then choose to *apply* to the self only the ones deemed appropriate or desirable. Alternatively, it may be that a selection bias would operate at the stereotype *activation* stage, such that individuals preferentially activate positive over negative stereotypic content from the available pool of stereotypic information.

The self is an organizing schema (e.g., Markus & Wurf, 1987) and the positivity that is typically associated with the self (e.g., Greenwald & Banaji, 1995; Pelham, Carvallo, & Jones, 2005; Taylor & Brown, 1988) may result in biased information search and memory retrieval processes (e.g., see Greenwald, 1980), giving rise to the differential activation of positive over negative stereotypic information. Given that past research provided participants with lists of positive and negative stereotypic traits (presumably activating both) and asked them to identify which ones they attributed to themselves, it is not clear to what extent selective self-stereotyping effects occur at the activation stage. In order to address this question, we utilized

a measure designed to provide a clearer index of stereotype activation (in addition to stereotype application). In two studies young adults imagined themselves at the age of 70 and wrote short narratives describing what life would be like for them at that time. By not providing participants with specific characteristics to choose from, this task served as a measure of the spontaneous use of age stereotypes. In order to distinguish stereotype activation from stereotype application, we reasoned that participants' narratives could contain four types of stereotypic information: affirmed positive (e.g., "I will be a grandparent"), affirmed negative ("I will be an invalid"), negated positive (e.g., "I will never be a grandparent") and negated negative ("I will not be an invalid"). Generally speaking, an absence of a positivity bias at stereotype activation combined with the presence of a positivity bias at stereotype application would be evidenced by narratives containing both affirmed positive and negated negative stereotypes, indicating that although both positive and negative conceptions were accessible, they were selectively applied. In contrast, the presence of a positivity bias at stereotype activation would be evidenced by a clear predominance of positive over negative stereotypic content in participants' narratives, suggesting that negative conceptions were relatively inaccessible. (Note that this pattern does not rule out an additional bias at stereotype application, which would manifest in terms of a tendency to affirm rather than negate positive stereotypes).

To index the presence of age stereotypes in participants' conceptions of their future aged selves, we used the Linguistic Inquiry Word Count software program developed by Pennebaker, Booth, and Francis (2007). The LIWC software allows researchers to create custom dictionaries in order to detect specific categories of words in participants' narratives. Analyses yield the percentages of total words related to each category of interest and thus provide a relatively objective measure of content. We created a custom dictionary that reflected eight broadly-defined stereotypes identified in past research as descriptive of older adults: *impaired* (e.g., forget, hospital); *despondent* (e.g., alienated, bored); *shrew* (e.g., annoying, bitter); *recluse* (e.g., alone, isolated); *vulnerable* (e.g., bullied, fearful); *golden* (e.g., affluent, cottage); *grandparent* (e.g., family, relationship); and *conservative* (e.g., nostalgic, patriotic; see appendix; Hummert et al., 1994). We then ran participants' narratives through the LIWC program to determine the percentage of total words that related to each age stereotype. We were able to examine the activation of positive versus negative stereotypic content by taking the average percentage of words participants used from the three positive stereotype categories (i.e., grandparent, golden and conservative), as well as the five negative categories (i.e., impaired, despondent, shrew, recluse and vulnerable) and creating two overall indices of valence.² Using this approach gave us the ability to look at both broad, valence-based categories as well as more specific ones.

Study 1

Participants in Study 1 generated passages describing themselves at the age of 70. In order to verify that participants in this condition were indeed utilizing information defined on the basis of prior research as stereotypic of old age, these narratives were compared to a control condition in which participants wrote about themselves one year in the future. In order to distinguish biases in stereotype activation from biases in stereotype application, we reasoned that selective self-stereotyping could manifest as the negation of negative stereotypes (e.g., "I will *not* be bitter") and/or the endorsement of positive stereotypes in participants' narratives. A substantial

presence of negative stereotypic content in participants' narratives would suggest that a positivity bias does not operate during the activation of stereotypic content; instead, the negation of negative stereotypes would support the operation of a positivity bias in the application of stereotypes to a future self. In contrast, a clear predominance of positive stereotypes in participants' narratives would be consistent with the selective activation of positive over negative stereotypic content. Further, to the extent that these positive stereotypes were generally affirmed (rather than negated), the data would indicate additional or continued bias at stereotype application.

Method

Participants. Two hundred twenty-five young adults (49.1% women) participated in this study to partially fulfill a requirement for an introductory psychology course at the University of Toronto. Participants' average age was 18.91 years ($SD = 1.33$).

Procedure. The data reported in this study were part of a larger project examining the role of the self in age bias. Specifically, we combined (previously unanalyzed) passages written by participants in Studies 1 and 2 from Packer and Chasteen (2006) with additional unpublished narrative data. All participants arrived at the lab in groups of up to four people and the experimenter explained to participants that they would be taking part in a study examining imaginative processing and verbal ability. Participants were randomly assigned to one of two future self conditions: self at 70 or self one year from now. Participants in the self-at-70 condition received the following instructions:

The future is full of possibilities, both good and bad. This task will ask you to spend a few minutes thinking deeply about your own future.

Imagine yourself at the age of 70. Your task is to write a short narrative about what your life will be like at that time. Really try to put yourself in the shoes of your future self and attempt to understand what life will be like for you then. What sorts of things will you be doing? How will you feel? What sorts of things will you think about?

Participants in the year-from-now condition received identical instructions; however, they were asked to write about their imagined lives one year in the future. All participants were given 6 to 10 minutes to write a narrative passage about their future self. After completing a series of tasks for another study, participants filled out a demographic questionnaire and were then debriefed and compensated.

Results

Valence of stereotypic content. As a matter of measure validation, we wanted to confirm that the content defined as age stereotypic occurred primarily in descriptions of older possible selves and was not simply used to discuss future states in general; as such, we expected to find greater use of stereotypic terms in the age-70 condition than in the year-from-now condition.

Our primary questions addressed whether young adults engaged in positively-biased self-stereotyping when conceptualizing themselves as members of a future in-group and, in particular, whether the pattern of selective self-stereotyping was consistent with biases at stereotype activation or *only* at stereotype application.

To examine this question, we submitted results from the LIWC analyses of participants' narratives to a 2 (Possible Self Condition: self at 70 or one year from now) \times 2 (Stereotype Valence: positive or negative) mixed-model analysis of variance (ANOVA) with repeated measures on the last factor. The analysis revealed a main effect of Stereotype Valence, $F(1, 223) = 378.00, p < .0005, \eta_p^2 = .63$, as well as a main effect of Condition, $F(1, 223) = 118.99, p < .0005, \eta_p^2 = .35$. The Stereotype Valence \times Condition interaction was also significant, $F(1, 223) = 106.00, p < .0005, \eta_p^2 = .32$.

As shown in Figure 1, participants in the age-70 condition included significantly more positive stereotypes ($M = 1.61\%$) in their passages than participants in the year-from-now condition ($M = 0.60\%$) $t(223) = -11.00, p < .0005$.³ In contrast, passages constructed by participants in the age-70 condition ($M = 0.17\%$) did not contain more negative stereotypic information than passages written by participants in the year-from-now condition ($M = 0.16\%$), $t(223) = -0.40, ns$. Validating the measure, these results suggest that positive content employed by participants in the

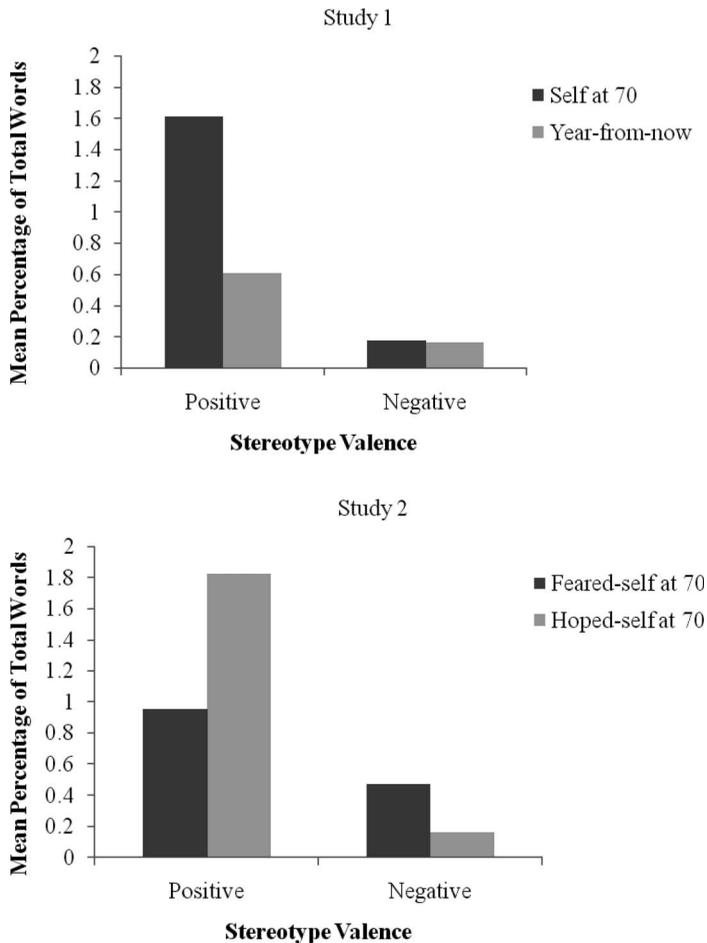


FIGURE 1 Mean percentage of total words as a function of stereotype valence and condition for Studies 1 and 2.

age-70 condition was related to age stereotypes and did not simply reflect terms used to describe future states to which the stereotypes do not apply.

Of primary interest was whether young adults incorporated more positive than negative age stereotypes into their descriptions of an age-70 self. Analyses revealed that participants in the age-70 condition did indeed make significantly more references to positive stereotypes ($M=1.61\%$) than to negative stereotypes ($M=0.17\%$), $t(107)=15.94$, $p < .0005$. This provides initial support for the operation of selective self-stereotyping in future selves, and suggests that the positivity bias may manifest at stereotype activation rather than at stereotype application.

Affirmation and negation of stereotypic content. The previous analyses provided evidence that young adults' older possible selves contain a predominance of positive (relative to negative) stereotypic information, but they do not address the manner in which these stereotypic references were made. For example, individuals may have affirmed a stereotype (i.e., "I will have grandchildren"), negated it (i.e., "I fear I will not have grandchildren"), or used it in a neutral way (i.e., "Having grandchildren is a part of growing older"). In order to verify that having selectively activated positive stereotypes, individuals in the age-70 condition also selectively applied them to their future selves, it was necessary to show that participants used positive stereotypes in an affirmative, as opposed to a negative way. As such, we further coded participants' passages to determine how young adults in the age-70 condition utilized age stereotypes when describing their future selves.

Two trained coders rated passages for the simple presence or absence of words related to positive and negative age stereotypes. After confirming the presence of stereotypic content, the coders examined the nature of these references and determined whether they were mentioned in the affirmative, negative or neutral direction. In all cases, measures of agreement demonstrated moderate to very good interrater reliability (presence of affirmed positive stereotypes, Cohen's kappa = .65; presence of negated positive stereotypes, Cohen's kappa = .65; presence of affirmed negative stereotypes, Cohen's kappa = .81; presence of negated negative stereotypes, Cohen's kappa = .84). In cases where the two raters disagreed on whether positive or negative stereotypic content was used in a particular context, the raters discussed the discrepancy in order to make a final decision regarding the outcome. Overall, in support of a positivity bias in the activation of age stereotypes with regard to thoughts about a future self, 95.3% of narratives written by participants in the age-70 condition mentioned positive stereotypes in an affirmative direction. In contrast, only 16% of narratives in this condition referenced positive stereotypes in a negative direction.

As mentioned previously, the use of negative stereotypes was negligible among participants in the self-at-70 condition. When participants did discuss negative stereotypic content, they did so in both a negated context (i.e., discussion of the negative stereotypic events that would not happen to them at the age of 70), which occurred in 13.2% of narratives, and in an affirmative context (i.e., described the negative stereotypic events that may happen to them at age 70), which occurred in 18.9% of narratives.⁴

Stereotypic content of narratives. To further examine the nature of specific age stereotypes recruited to describe future selves, we conducted a 2 (Possible Self Condition: self at 70 or self one year from now) \times 8 (Stereotype: impaired,

despondent, shrew, recluse, vulnerable, golden, grandparent or conservative) mixed-model ANOVA on the percentage of total words in participants' passages related to each stereotype category. The last factor was repeated. The analysis revealed a main effect of Condition, $F(1, 223) = 110.05$, $p < .0005$, $\eta_p^2 = .78$. A main effect of Stereotype also emerged, $F(7, 217) = 89.50$, $p < .0005$, $\eta_p^2 = .74$. However, these effects were qualified by a significant Condition \times Stereotype interaction, $F(7, 217) = 23.86$, $p < .0005$, $\eta_p^2 = .44$.

Post hoc *t*-tests demonstrated that, compared to narratives written by participants in the year-from-now condition, passages written by participants in the age-70 condition contained a higher percentage of words related to the positive golden, ($M_{70} = 1.70\%$, $M_{\text{one year}} = 0.95\%$) $t(223) = -4.93$, $p < .0005$, grandparent, ($M_{70} = 2.62\%$, $M_{\text{one year}} = 0.83\%$) $t(223) = -9.51$, $p < .0005$, and conservative stereotypes, ($M_{70} = 0.51\%$, $M_{\text{one year}} = 0.03\%$) $t(223) = -9.62$, $p < .0005$. In contrast, passages written by participants in the age-70 condition contained fewer references to the negative shrew stereotype, ($M_{70} = 0.03\%$, $M_{\text{one year}} = 0.06\%$) $t(223) = 1.20$, $p < .05$, than passages in the year-from-now condition. This result is somewhat inconsistent with our claim that the content from the shrew stereotype category is specific to descriptions of older adults and, therefore, that its use reflects recruitment of the older adult stereotype. However, this finding may simply be indicative that there is overlap in the experiences of younger and older adults in this particular domain; for example, individuals from both age groups may experience depression, but whereas this experience is interpreted as shrew-like in older adults, it is likely interpreted in a different way among college students. In support of a positivity-bias hypothesis, participants who were asked to imagine their older adult selves relied much more on positive age stereotypes than did those who were asked to imagine themselves one year in the future.

We then conducted a more nuanced test of the hypothesis that participants recruit more positive than negative age stereotypes when thinking about an age-70 self by submitting narratives written by participants in the age-70 condition to a single factor (Stereotype: impaired, despondent, shrew, recluse, vulnerable, golden, grandparent or conservative) repeated-measures ANOVA. The results demonstrated a main effect of Stereotype, $F(7, 101) = 52.08$, $p < .0005$, $\eta_p^2 = .78$. To further examine this effect, a series of paired *t*-tests were conducted on the stereotypes mentioned in these passages. All comparisons differed significantly from one another ($p < .05$) except for four (see Table 1). Participants' passages contained a greater percentage of total words related to the grandparent ($M = 2.62\%$) and golden age ($M = 1.70\%$) stereotypes than those related to the five negative stereotype categories. In addition, participants made more references to the positive conservative stereotype ($M = 0.51\%$) than to all of the negative stereotype categories except for impaired ($M = 0.33\%$) and recluse ($M = 0.37\%$). Within the five categories reflecting negative stereotype content, all comparisons differed significantly from one another, $p < .05$, except for impaired and recluse.

Discussion

The results of Study 1 suggest that, as predicted, when thinking about a future group membership, young adults engage in selective self-stereotyping. Compared to descriptions of selves in the near future, narratives describing future aged selves incorporated more content defined on the basis of past research (e.g., Hummert et al., 1994) as stereotypic of older adults (lending credence to our narrative coding

TABLE 1 Mean Percentage of Total Words as a Function of Stereotype and Condition

Stereotype	Study 1 condition		Study 2 condition	
	Self at 70	Year from now	Feared self at 70	Hoped for self at 70
Impaired	0.33 (0.52)	0.26 (0.47)	0.50 (0.60)	0.32 (0.48)
Despondent	0.07 (0.24)	0.06 (0.19)	0.42 (0.76)	0.03 (0.14)
Shrew	0.03 (0.19)	0.06 (0.18)	0.15 (0.33)	0.05 (0.19)
Recluse	0.37 (0.52)	0.36 (0.50)	0.70 (0.77)	0.24 (0.38)
Vulnerable	0.07 (0.22)	0.08 (0.27)	0.57 (1.02)	0.14 (0.32)
Golden	1.70 (1.37)	0.95 (0.86)	0.90 (0.95)	2.39 (1.67)
Grandparent	2.62 (1.83)	0.83 (0.85)	1.73 (1.26)	2.72 (1.44)
Conservative	0.51 (0.53)	0.03 (0.11)	0.23 (0.45)	0.35 (0.41)

Notes: Standard deviations are in parentheses. For detailed information about specific comparisons, please contact the authors.

methodology). There was, however, a notable positivity bias in young adults' older possible selves; young adults asked to describe a future-aged self relied more on positive age stereotypes than on negative age stereotypes to construct these representations. This is consistent with past research on optimism biases; in general, people anticipate futures that are uniformly rosy even though they acknowledge the highs and lows that marked their pasts (e.g., Markus & Nurius, 1986; Newby-Clark & Ross, 2003). Importantly, the fact that participants demonstrated selective self-stereotyping in terms of a preponderance of (affirmed) positive stereotypic content and a relative absence of (negated) negative content suggests that the positivity bias began at stereotype activation and was not simply initiated at the subsequent stage of stereotype application. That is, participants did not appear to activate both positive and negative age stereotypes and then engage in selective application of those stereotypes to the self by endorsing positive content and disaffirming negative content.

The selective inclusion of positive stereotypic content in reference to future selves occurred despite substantial evidence that younger adults hold both positive and negative conceptions of older adults in general (Fiske et al., 2002; Hummert, 1990). Our results suggest that it is the self-related nature of the task rather than a lack of potential negative content that drives the positivity bias. In addition, we have suggested that the clear preponderance of affirmed positive over negated negative content is consistent with the view that the self-related nature of the task introduces bias at the activation stage, even before application occurs. There is, however, at least one alternate explanation for the observed pattern of effects in Study 1. It is possible that participants activated both positive and negative stereotypic information, but found it easier to construct a (positive) possible self by applying only those characteristics that they could affirm. That is, it may be easier to endorse than negate a characteristic as self-relevant. Thus, selective self-stereotyping only at the application phase would be fully consistent with the observed pattern of data if one assumes that individuals hold dual biases: a preference for positive over negative self-conceptions (i.e., a positivity bias, as we would predict) and a preference for affirming characteristics as self-relevant rather than classifying characteristics as not

descriptive of the self (i.e., an affirmation bias, which we would not predict). We conducted Study 2 to rule out this alternative explanation.

Study 2

Study 2 was designed to disentangle a positivity bias from an affirmation bias in the recruitment of stereotypes to describe an older adult self by directly asking participants in one condition to think about the negative aspects of aging. If participants are reluctant to negate characteristics as self-descriptive, a relatively low percentage of narratives in this condition should include negated positive stereotypic content. In contrast, if participants do not have such an affirmation bias, we would expect to see a high percentage of narratives containing negated positive stereotypic content.

More generally, we predicted that this feared-self condition, which was contrasted with a hoped-for-self condition in which participants constructed positive possible selves, would reduce positivity biases at stereotype application: in order to complete the task successfully, participants were forced to generate negative conceptions of future selves. Nevertheless, we reasoned that a positivity bias might still operate at stereotype activation; that is, to the extent that positivity typically associated with the self biases information search, there might still be greater activation of positive stereotypic content even when the task directed participants to construct negative self-conceptions. This activation bias would manifest in terms of a significant presence of negated positive stereotypes in young adults' feared possible selves. Although it may seem counterintuitive to expect individuals to reference positive stereotype content when focusing on a feared future self, this finding would provide persuasive evidence for selectivity in the activation of information in reference to individuals' membership in a future group. Of course, it was highly unlikely that participants asked to construct negative possible selves would not activate *any* negative stereotypic content. We predicted, however, that although the feared-self condition would likely evidence greater presence of negative stereotypes than the hoped-for-self condition, there would nevertheless be a *relative* preponderance of positive stereotypes even in this negatively-focused condition.

All participants in this study were asked to write about themselves at the age of 70. However, we randomly assigned half of the participants to write about a hoped-for aged self and asked the other half to describe a feared aged self. We expected that participants in the hoped-for-self condition would react similarly to participants in Study 1 and would integrate more positive age-related stereotypes into their narratives than participants in the feared-self condition. Critically, however, we predicted that participants in the feared-self condition would also display evidence of a positivity bias in their future aged selves. Although asking participants to construct a feared future self should reduce the selective application of stereotypes to the future self, we anticipated that feared selves would still be constructed in reference to (i.e., by negating) positive conceptions of the future, indicating the operation of a positivity bias at stereotype activation.

Method

Participants. The participants were 101 young adults (64.4% women) enrolled in an introductory psychology course at the University of Toronto. The students participated in this study to partially fulfill a course requirement. Participants' average age was 19.03 years ($SD = 2.20$).

Procedure. Participants arrived at the lab in groups of up to four people and were randomly assigned to one of two future-self conditions: hoped for self at 70 years old or feared self at 70 years old. Participants then received the following instructions:

We all think about the future to some extent. When doing so, we usually think about the kinds of experiences that are in store for us, and the kinds of people we might become. Sometimes we think about what we fear [hope] we will be like—selves we fear [hope] to become in the future. This task will ask you to spend a few minutes thinking deeply about your own future.

Imagine yourself at the age of 70. Your task is to write a short narrative about what you fear [hope] your life will be like at that time. Really try to put yourself in the shoes of your future self. What sorts of things will you be doing? How will you feel? What sorts of things will you think about?

As in Study 1, all participants were given 6 to 10 minutes to write a narrative passage about their possible self. After completing a series of tasks for another study, participants filled out a demographic questionnaire and were debriefed and compensated.

Results

Valence of stereotypic content. To explore the valence of participants' narratives, we analyzed the passages using a 2 (Possible Self Condition: hoped for self at 70 or feared self at 70) \times 2 (Stereotype Valence: positive vs. negative) mixed-model ANOVA with repeated measures on the second factor. The results revealed a main effect of Stereotype Valence, $F(1, 99) = 188.38$, $p < .0005$, $\eta_p^2 = .66$, and a main effect of Condition, $F(1, 99) = 12.66$, $p = .001$, $\eta_p^2 = .11$. A significant Condition \times Stereotype Valence interaction also emerged, $F(1, 99) = 56.87$, $p < .0005$, $\eta_p^2 = .37$ (see Figure 1).

Follow-up *t*-tests demonstrated that passages written by participants in the feared 70-year-old self condition contained a higher mean percentage of references to negative stereotypes ($M = 0.47\%$) than those written by participants in the hoped self at 70 condition ($M = 0.16\%$), $t(99) = 5.53$, $p < .0005$, indicating that the feared-self instruction did, as expected, make negative age stereotypes more accessible. Furthermore, participants in the feared-self-at-70 condition relied less on positive stereotypes ($M = 0.95\%$) to describe their possible selves than those in the hoped for self at 70 condition ($M = 1.82\%$), $t(99) = 5.96$, $p < .0005$. Critically, however, closer examination of the passages written by participants within the feared aged self condition revealed that despite the inclusion of negative stereotypic information, individuals nevertheless continued to reference *significantly more positive than negative stereotypes* to describe their feared aged selves, $t(99) = 4.61$, $p < .0005$ (see Figure 1).

Affirmation and negation of positive stereotypic content. We have argued that individuals selectively integrate positive stereotypes into conceptions of their future aged selves and that this positivity bias emerges during stereotype activation. However, we recognized that in the first study the preponderance of positive stereotypic content may have been driven by a preference to endorse rather than negate information as self-descriptive (i.e., an affirmation bias). In the current study, we were particularly interested in whether participants in the feared-self condition would be willing to negate positive stereotypes, as doing so would suggest that

differences observed in this and the previous study were due to a positivity bias at stereotype activation as opposed to an affirmation bias at stereotype application. As in Study 1, we explored the context (affirmative, negative or neutral) in which participants used positive age stereotypes to construct their narratives. Once again, measures of agreement demonstrated good interrater reliability; raters agreed strongly in terms of whether or not participants discussed positive stereotypes in an affirmative direction (Cohen's kappa = .81) as well as in a negative direction (Cohen's kappa = .86).

The results of this additional coding revealed that, similar to participants in the age-70 condition in Study 1, participants in the hoped-for-self condition in the current study were more likely to affirm (occurred in 98.2% of narratives) than to negate positive stereotypic content (occurred in 1.8% of narratives). Critically, it further appeared that participants in the feared-self condition were *more than willing* to negate positive stereotypic content, an event that occurred in 75.5% of narratives in this condition. Thus, in support of our argument that individuals selectively activate positive stereotypes when conceptualizing their older adult selves, participants in the feared-self condition did not demonstrate a reluctance to negate stereotypic content as self-descriptive. Interestingly, 57.1% of narratives in this condition also affirmed at least one positive stereotype, indicating that even when asked to generate feared possible selves, some degree of optimism was maintained among our young adult participants.

Stereotypic content of narratives. As in the first study, we also examined the content of the narrative passages as it related to the 8 stereotype categories in the custom LIWC dictionary. The percentage of total words relating to each category were analyzed using a 2 (Possible Self Condition: hoped self at 70 or feared self at 70) \times 8 (Stereotype: impaired, despondent, shrew, recluse, vulnerable, golden, grandparent or conservative) mixed-model ANOVA with repeated measures on the second factor. The analysis revealed a main effect of Condition, $F(1, 99) = 4.00$, $p < .05$, $\eta_p^2 = .04$, and a main effect of Stereotype, $F(7, 93) = 44.43$, $p < .0005$, $\eta_p^2 = .77$. This effect was qualified by a significant Condition \times Stereotype interaction, $F(7, 93) = 9.55$, $p < .0005$, $\eta_p^2 = .42$.

With respect to differences between conditions, *t*-tests demonstrated that compared to those written by participants in the hoped-for-self condition, passages written by participants in the feared-self condition contained a higher percentage of words related to the following negative stereotypes: despondent ($M_{\text{hoped}} = 0.03\%$, $M_{\text{feared}} = 0.42\%$), $t(99) = 3.87$, $p < .0005$, recluse ($M_{\text{hoped}} = 0.24\%$, $M_{\text{feared}} = 0.70\%$), $t(99) = 3.97$, $p < .0005$, and vulnerable ($M_{\text{hoped}} = 0.14\%$, $M_{\text{feared}} = 0.57\%$), $t(99) = 3.03$, $p = .003$. In contrast, in comparison to narratives describing participants' hoped-for selves, passages written by participants in the feared-self condition contained fewer references to the following positive stereotypes: golden ager ($M_{\text{hoped}} = 2.39\%$, $M_{\text{feared}} = 0.90\%$), $t(99) = 5.31$, $p < .001$, and grandparent ($M_{\text{hoped}} = 2.72\%$, $M_{\text{feared}} = 1.73\%$), $t(99) = 3.62$, $p < .001$. Thus, as we expected, the feared-self prime increased the accessibility of negative age stereotypes relative to the hoped-for-self prime.

In order to examine the relative accessibility of positive versus negative stereotypes in conceptions of feared aged selves, we conducted a single factor (Stereotype: impaired, despondent, shrew, recluse, vulnerable, golden, grandparent or conservative) repeated-measures ANOVA to examine participants' narrative content within the feared-self-at-70 condition. A main effect of stereotype emerged, $F(7, 37) = 13.43$, $p < .0005$, $\eta_p^2 = .72$. Importantly, a post hoc *t*-test demonstrated the

same use of positive stereotypes observed for the general valence analyses: participants' passages contained higher percentages of words related to the grandparent stereotype ($M = 1.73\%$) than words related to all other stereotypes (all $ps < .05$, see Table 1). Participants also used words from the golden stereotype ($M = 0.90\%$) with greater frequency than words from all other stereotypes with the exceptions of recluse and vulnerable. In terms of the negative stereotypes mentioned, participants invoked the shrew stereotype ($M = 0.15\%$) less often than the recluse ($M = 0.70\%$), vulnerable ($M = 0.57\%$), impaired ($M = 0.50\%$) and despondent ($M = 0.42\%$) stereotypes (see Table 1). The passages also differed in terms of the frequency with which participants used words from the recluse stereotype and the despondent stereotype.

Discussion

The findings from Study 2 indicate that, in comparison to those who envisioned hoped-for aged selves, participants asked to describe feared aged selves referred to more negative stereotypes in their passages. Unsurprisingly, the results show that constructing a feared future self leads to greater activation of negative age stereotypes as compared to a hoped-for future self. However, close examination of the feared aged self narratives revealed a positivity bias that occurred even when participants were asked to reflect on negative future states. Participants in this condition were readily able to negate self-relevant characteristics, as evidenced by the high percentage of narratives that contained negated positive stereotype content in which participants focused on losing or missing out on good things that may happen in later life. As a result, it does not seem likely that participants in the current study or in Study 1 were simply reluctant to reference stereotypic information in a negated context. Instead, the results from Study 2 provide additional support for our argument that selective self-stereotyping operates in the context of future selves and that this positivity bias emerges at the stereotype activation phase of information processing. By mentioning positive stereotypes about an aged self but suggesting that these events may not happen, young adults acknowledge their fears about this future group membership, but also express an underlying positivity bias in the activation of stereotypic information.

General Discussion

Two studies demonstrated that when young adults contemplate possible selves as they relate to the older adult age group, they systematically recruit positive age-related stereotypes to describe these possible selves. Consistent with past research on optimism about the future (Markus & Nurius, 1986; Newby-Clark & Ross, 2003; Weinstein & Klein, 1995), young adults in Study 1 incorporated more references to positive stereotypes (e.g., grandchildren, affluence, wisdom) than negative stereotypes (e.g., lonely, weak, incapable) into narratives about their future aged selves. In other words, participants engaged in selective self-stereotyping when contemplating this future in-group membership. Participants mostly avoided mention of negative stereotypes, consistent with the notion that they were selectively activating positive rather than negative outcomes considered to be stereotypic of older adulthood. Importantly, this selectivity in the use of stereotypic information in reference to one's own future self occurred despite the fact that young adults tend to associate negative, rather than positive, age stereotypes with individuals in the 70-year-old age range (Hummer, 1990).

Study 2 provided additional, stronger evidence for our contention that the positivity bias observed in Study 1 occurred at stereotype activation rather than (or in addition to) stereotype application. As would be expected, participants described feared future selves by invoking more negative stereotypes than participants in the hoped-for-self condition. Nevertheless, participants in the feared-self condition continued to incorporate relatively more positive than negative stereotypic content into their narratives, and they completed the task of generating a feared possible self by contemplating losing the good things associated with this future state or missing out on positive events. Thus, we can infer that the pattern of results observed in Study 1 was likely not due to an affirmation bias (i.e., a preference for endorsing rather than negating information); rather it appears that there was a positivity bias in terms of the stereotypic content that was activated, even when it was subsequently applied to the self in a negative manner as in the second study's feared-self condition.

We have described the selective activation of positive stereotypic information in reference to future selves as a relatively passive process resulting from the general association of positive valence with the self concept. A sense of optimism regarding self-related outcomes may bias information search and memory retrieval in a positive direction (e.g., Greenwald, 1980), even when there is negative information available. It is unclear to what extent this process is indeed passive or whether there is a reactive or motivated component to it as well. Selective self-stereotyping may, for instance, represent a protective response to the recognition that negative characteristics are associated with one's membership in a social group (e.g., Biernat et al., 1996). Asking participants to directly reflect upon the negative possibilities associated with growing old may be especially likely to trigger such a response. Importantly, protective or compensatory responses of this sort are by no means limited to the selective application of previously activated information to the self, but can also occur at activation stages of information processing (e.g., Markus & Kunda, 1986). It will be important in future research to examine the extent to which biases at activation influence self-stereotyping in the context of current as well as future group memberships.

Although we did not have a priori predictions regarding participants' use of specific negative stereotypes, the results of Study 1 showed that when participants did discuss negative stereotype content they referenced words from the recluse and impaired categories more often than words from the vulnerable, despondent and shrew categories. Why were participants (spontaneously) more willing to use these negative stereotypes in reference to the self? Whereas the vulnerable, despondent and shrew stereotypes refer to relatively stable aspects of the stereotypic older adult personality (e.g., bitter, sad), the impaired and recluse stereotypes reflect negative circumstances that older adults are expected to encounter (e.g., hospital, sick). One way to interpret this finding is that when individuals do mention negative stereotypes, they may prefer to acknowledge that their circumstances—and not their dispositions—will change as they age. This prediction is consistent with a distinction made in the attributions literature, in which individuals make situational attributions for negative events (see Mezulis, Abramson, Hyde, & Hankin, 2004, for a recent review). On the basis of the present work, such an interpretation is limited because we did not explicitly code for the presence of situational versus dispositional content in participants' narratives. It may be fruitful, however, for future research to test the hypothesis that when individuals do mention negative stereotypes, they

prefer to acknowledge that their circumstances rather than their internal characteristics will change as they age.

It is important to note that the current studies are limited by our exclusive focus on the older adult age group. We expect that people draw upon group-related stereotypes to construct many types of future selves structured according to specific group memberships. This may be particularly true of unfamiliar and distant selves. The vague and unknown facets of distant future selves may invite the use of abstract, stereotypical cognitions to fill in the gaps of our knowledge about these groups (e.g., Trope & Liberman, 2003). Future work should examine how individuals invoke stereotypes to conceptualize themselves according to alternative future group memberships.

It is also worth considering that there may be psychological and functional benefits to focusing on the loss of or failure to attain positive events in descriptions of feared future aged selves. Consistent with this claim, King and Smith (2004) asked gay and lesbian participants to generate two narratives: one describing their best possible self and one describing their lost possible self, or straight self. The authors found that participants who constructed an elaborate straight or lost possible self scored higher on concurrently administered measures of ego development and complexity. In general, voicing regrets via descriptions of lost possible selves—in the case of Study 2 in the current work, for example, the lost married self (or the widowed self)—is positively associated with personal growth (King & Hicks, 2007). Individuals who highlight regret in descriptions of feared future aged selves may derive psychological benefits that cannot be obtained from the simple discussion of negative events stereotypic of aging.

Finally, as noted in the opening to this paper, the fact that people use stereotypes to think about their future selves means that stereotypes can represent an impediment to members of stigmatized groups who try to access groups or positions with which they are not typically associated. When a young girl contemplates who she will be when she grows up, does she dismiss stereotypically male group memberships (e.g., CEOs)? Or does she believe that she will have to adopt male characteristics in order to become a member of this group? Stereotypes, both about one's current group memberships, but also about the groups one considers joining, may restrict the types of possible selves individuals generate. As a result, individuals with devalued identities may rule out possibilities for themselves that are not prototypic of "people like us" (e.g., Kao, 2000; Lips, 2004; Osyerman & Fryberg, 2006). Another important avenue for possible selves research is the continued investigation of the association between stereotyping one's future self and intentions to seek non-stereotypical future group memberships.

In sum, we have suggested that when young adults contemplate themselves as members of the future older adult age group, they selectively recruit positive age stereotypes to construct representations of these future selves. In two studies, participants incorporated more positive than negative stereotypic content into conceptualizations of their older adult selves. Forcing young adults to consider their fears about older adulthood did increase the accessibility of negative age stereotypes; however, even when representing their feared selves, young adults demonstrated a persistent focus on the positive events stereotypically associated with aging. We have argued that this pattern of results is consistent with selective self-stereotyping at stereotype activation even before stereotype application occurs, such that young adults preferentially activate positive over negative stereotypic content from the available pool of stereotypic information.

Notes

1. Hummert et al. (1994) asked young, middle-aged and older adults to sort traits into groups by putting the traits which would be observed in the same elderly person into one pile. Participants from all three age-groups created *impaired*, *despondent*, *shrew* and *recluse* negative subcategories. Only young adults produced a *vulnerable* subcategory. Because we were interested in how young adults applied stereotypes about aging to descriptions of their future aged self, we included the vulnerable subcategory in our content analyses.
2. Overall, there were 111 words in the 5 negative stereotype dictionaries (*impaired* = 37, *despondent* = 13, *shrew* = 30, *recluse* = 18 and *vulnerable* = 13). There were 110 words in the 3 positive stereotype dictionaries (*golden* = 60, *grandparent* = 36, *conservative* = 14). As such, any differences we might observe between the use of positive versus negative stereotypes was not due to differences in the size of their respective word pools.
3. Because written passages are largely comprised of words unrelated to content (e.g., pronouns, prepositions), it is not unusual to observe relatively low percentages of words related to target content categories (e.g., Pennebaker, Mayne, & Francis, 1997). Importantly, despite the relatively low overall rates of stereotype word use in the current study, statistical comparisons identified meaningful variation in terms of how frequently individuals used words from one category versus another when describing their possible selves. (Also please note that LIWC analyses effectively control for word count because this software reports specific content in terms of percentage of total content, i.e., words of interest/total words in each passage).
4. For passages in which stereotype content was present, we further coded narratives for the presence or absence of content in an affirmative, negative and neutral direction. As a result, passages that did not contain positive stereotypic content in the negative direction did not, by necessity, contain positive stereotypic content in the positive direction.

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Appendix

Sample Words from LIWC Custom Dictionary with Eight Stereotype Categories

Impaired	Despondent	Shrew	Recluse
fool	alienated	annoying	alone
forget	bored	bitter	isolated
hospital	dejected	boring	left out
ignorant	despondent	cruel	lonely
ill	dismal	distrustful	rejected
Vulnerable	Golden	Grandparent	Conservative
bullied	adventurous	family	determined
emotionless	affluent	friend	religious
fearful	beach	generous	proud
helpless	skilled	gentle	nostalgic
hypochondriac	vacation	grandchild	patriotic