

## CHAPTER 4

# Experimental Research on Age Stereotypes

### *Insights for Subjective Aging*

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#### ABSTRACT

The chapter begins with a discussion of experimental and quasi-experimental research on the content and dimensionality of age stereotypes with implications for the study of subjective age. It focuses next on research documenting the behavioral and psychological effects of age stereotypes on older individuals, highlighting the ways in which awareness of age-related change, age identity, and subjective age enter into that process. The chapter concludes with a discussion of future directions for the experimental investigation of the relationship between age stereotypes and subjective aging. Three areas for future research are highlighted: (a) investigation of the contextual cues and awareness of age-related change experiences that call forth positive and negative age stereotype and stereotype domains; (b) the role of age identification or dissociation in influencing subjective age, as well as the mediating role of subjective age in buffering or increasing the effects of age stereotypes on self-perceptions and behaviors of older persons, deserve study; and (c) examination of the extent to which behavioral assimilation to age stereotypes creates a feedback cycle involving awareness of aging experiences and subjective age.

## INTRODUCTION

Age stereotypes lurk behind any discussion of subjective age, the focus of this volume of the *Annual Review of Gerontology and Geriatrics*. Age stereotypes, particularly negative age stereotypes, are referenced in research demonstrating that middle-aged and older persons report older subjective ages after being primed with age stereotypes (Kotter-Gröhn & Hess, 2012; O'Brien & Hummert, 2006). Other research has examined the link between age stereotypes, subjective age, and self-perceptions, indicating that younger subjective ages may serve to distance older adults from negative age stereotypes and therefore contribute to their psychological well-being (Weiss & Lang, 2012). This chapter explores the relationship between age stereotypes and subjective age to highlight how age stereotype research can inform this study of subjective aging.

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## RESEARCH ON THE CONTENT AND DIMENSIONALITY OF AGE STEREOTYPES

Age stereotypes have been variously conceptualized by psychologists historically. The research discussed here views age stereotypes from a *social cognitive framework* as psychological constructs, specifically as person perception schemas which facilitate interpretation of new information (Hummert, 1999, 2011; Operario & Fiske, 2004). As psychological constructs, age stereotypes exist within individuals. Although stereotypes encompass shared cultural perceptions about the characteristics of older people, they also include personal experiences—both of older people and of one's own progression through the lifespan. Thus, despite the commonality of perceptions that we associate with the label *stereotype*, the content of age stereotypes will vary to some extent across individuals (Hummert, Garstka, Shaner, & Strahm, 1994). Social cognitive research on the nature of age stereotypes has documented characteristics of their content and their effects which are relevant to subjective age.

### Positive and Negative Age Stereotypes

Although early research on age stereotypes assumed that stereotypes were exclusively negative (Crockett & Hummert, 1987), social cognitive research on the

content of age stereotypes revealed the coexistence of positive age stereotypes as well as multiple subtypes of the positive and negative stereotypes (Brewer, Dull, & Lui, 1981; Schmidt & Boland, 1986). Other research confirmed the positive and negative dimensions of age stereotypes while demonstrating that the stereotypes varied in complexity across age groups (Brewer & Lui, 1984; Chasteen, Schwarz, & Park, 2002; Hummert et al., 1994).

For example, Hummert et al. (1994) asked young, middle-aged, and older adult participants to sort 97 traits associated with the category *older adult* into groups by “putting the traits that would be found in the same elderly person into a single group or pile” (p. P242). The data were analyzed using cluster analysis. For all three age groups, the resulting tree diagrams revealed two high-level clusters of positive and negative traits, with several subcategories or multiple stereotypes within these two clusters. Table 4.1 presents the positive and negative subcategories for each age group with representative traits associated with those stereotypes, revealing that seven subcategories (three positive and four negative) were evident in some form in the stereotype subsets of all three age groups. Hummert et al. referred to these as “cultural archetypes of aging” (p. P249).

However, as Table 4.1 also reveals, the number of subcategories increased across the three age groups (from young to middle-aged to older adult), indicating greater complexity in the age stereotypes held by middle-aged than younger participants and by older than middle-aged participants. The additional stereotypes held by older and middle-aged participants were often subdivisions of broader stereotypes held by those in a younger age group. These results suggested that those in the two older groups made finer discriminations among types of older persons than did the young participants.

Another fact evident in Table 4.1 is that the age stereotypes held by the middle-aged and older participants may have been more complex than those of the young participants, but they were not more positive. For all age groups, the number of negative stereotypes exceeded the number of positive stereotypes. This result reflects a general pattern in age stereotype research: Negative age stereotypes predominate over positive stereotypes (Crockett & Hummert, 1987; Hess, 2006; Hummert, 2011; Kite & Johnson, 1988; Kite, Stockdale, Whitley, & Johnson, 2002; Kite & Wagner, 2002). Experimental research demonstrates that, in comparison to positive age stereotypes, negative age stereotypes are more accessible as indicated by response times on lexical decision tasks (Perdue & Gurtman, 1990; Wentura & Brandstädter, 2003) and hit/error rates on memory recognition tasks (Krings, 2004). These results hold for older participants as well as younger ones. In addition, Meisner’s (2012) meta-analysis of the priming effects of positive and negative age stereotypes on the behavior of older persons revealed that the effects of negative stereotypes “were almost three times larger than positive effects, compared with a neutral referent” (p. 16).

TABLE 4.1

*Positive and Negative Age Stereotypes and Representative Traits by Age Group:  
Summary of Data Reported in Hummert et al. (1994)*

Participant Age Group		
Young (Aged 18–24 Years)	Middle-Aged (Aged 36–50 Years)	Older (Aged 62–84 Years)
Positive stereotypes		
<i>Golden ager</i> : sociable, future-oriented, capable, +22 traits	<i>Golden ager</i> : sociable, future-oriented, capable, +20 traits	<i>Golden ager</i> : sociable, future-oriented, capable, +20 traits
<i>Perfect grandparent</i> : kind, family-oriented, generous, +10 more traits	<i>Perfect grandparent</i> : kind, family-oriented, generous, +10 traits	<i>Perfect grandparent</i> : kind, family-oriented, generous, +7 traits
<i>John Wayne conservative</i> : patriotic, retired, proud, +7 traits	<i>John Wayne conservative</i> : patriotic, retired, proud, +7 traits	<i>John Wayne conservative</i> : patriotic, retired, proud, +6 traits
	<i>Liberal matriarch/patriarch</i> : liberal, mellow, wealthy	<i>Activist</i> : political, sexual, health-conscious, liberal
		<i>Small town neighbor</i> : frugal, old-fashioned, tough, +2 traits
Negative stereotypes		
<i>Shrew/curmudgeon</i> : complaining, ill-tempered, bitter, +11 traits	<i>Shrew/curmudgeon</i> : complaining, ill-tempered, bitter, +7 traits	<i>Shrew/curmudgeon</i> : complaining, ill-tempered, bitter, +2 traits
<i>Despondent</i> : depressed, sad, lonely, +4 traits	<i>Despondent</i> : depressed, sad, lonely, +5 traits	<i>Despondent</i> : depressed, sad, neglected, +4 traits
<i>Severely impaired</i> : incoherent, slow-thinking, senile, +8 traits	<i>Severely impaired</i> : incoherent, slow-thinking, senile, +3 traits	<i>Severely impaired</i> : incoherent, slow-thinking, senile, +5 traits
<i>Recluse</i> : quiet, timid, naïve, +2 traits	<i>Recluse</i> : quiet, timid, naïve	<i>Recluse</i> : timid, poor, sedentary
<i>Vulnerable</i> : afraid, worried, victimized, +6 traits	<i>Mildly impaired</i> : slow-moving, tired, dependent, +8 traits	<i>Mildly impaired</i> : slow-moving, tired, dependent, +4 traits
	<i>Self-centered</i> : miserly, greedy, humorless, +2 traits	<i>Self-centered</i> : miserly, greedy, humorless, +5 traits
		<i>Elitist</i> : prejudiced, wary, snobbish, +2 traits

### Domain Specificity: A New View of Stereotype Multidimensionality

In recent years, psychologists have proposed an alternative to the view of multiple positive and negative age stereotypes, which represent different types or subcategories of older persons. They propose instead that there are multiple positive and negative age stereotypes defined by specific domains or contexts (Casper, Rothermund, & Wentura, 2011; Kornadt & Rothermund, 2011, 2012; see Chapter 6 by Kornadt & Rothermund, this volume). Support for this alternative perspective on age stereotypes can be found in prior experimental research on the role of age stereotypes in person perception. For instance, reviews and meta-analyses of the age stereotype literature revealed that individuating information played a stronger role than a general negative age stereotype in experiments comparing judgments of old and young targets (Crockett & Hummert, 1987; Hummert, 1999; Kite & Johnson, 1988; Kite et al., 2005). In some experiments, older targets were judged no differently or even more positively on some dimensions than younger targets with the same characteristics. In other experiments, context affected behaviors toward and judgments of the same older target. For instance, Hummert, Shaner, Garstka, and Henry (1998) found that participants, especially young adult participants, adopted an age-adapted communication style when addressing a *golden ager* target (see Table 4.1) presented in a hospital setting, whereas presentation of the same target in a community context elicited standard adult communication.

Experiments designed to test the effects of age stereotypes on older persons' behavior also produced results which suggest the importance of specific domains (e.g., memory performance, interpersonal relations, physical strength) in influencing behavior. First, the personal relevance of the domain to the individual can increase the effects of negative stereotypes. For example, Hess, Auman, Colcombe, and Rahhal (2003) found that older adults for whom memory ability was important exhibited poorer memory after being primed with a negative age stereotype about memory than did those for whom memory ability was less important. Second, the match between stereotype domain and task may be a key factor in boosting performance via positive age stereotypes as indicated by results reported by Levy and Leifheit-Limson (2009). These researchers matched stereotype primes and behavioral tasks in a  $2$  (positive/negative)  $\times$   $2$  (cognitive/physical)  $\times$   $2$  (task domain: photo recall/balance task) with repeated measures on the last factor. Results showed better performance by participants in the positive prime conditions in comparison to those in the negative prime conditions only when the prime matched the behavioral task. That is, participants in the positive prime condition performed better on the balance task than those in the negative prime condition only when the positive primes (e.g., fit, hardy) and the negative primes (e.g., feeble, shaky) tapped into the physical domain

but not when they primed the cognitive domain (e.g., sage, alert for positive primes; dementia, confused for negative primes). Similarly, participants in the positive prime condition performed better on the photo-recall task than those in the negative prime condition only when the positive and negative primes were cognitive in nature.

Casper et al. (2011) tested the context dependence of specific age stereotypes in two experiments using sentence and photo primes followed by a lexical decision task. Primes combined relevant or irrelevant category information (old or young photo) with a sentence relevant (e.g., *she is crossing the street*) to a specific age stereotype such as *slow* or irrelevant to the stereotype (e.g., *she is watering the flowers*). Participants responded more quickly on the lexical decision task when the lexical decision followed a photo of an older person and a sentence relevant to the age stereotype than when the photo and/or the sentence were irrelevant to the category. These results supported the importance of matching both the context and the age category to the target stereotype.

Kornadt and Rothermund (2011) examined the domain specificity of age stereotypes by asking participants to complete a 27-item questionnaire designed to assess eight life domains developed from interviews and the prior literature: (a) family and partnerships; (b) friends and acquaintances; (c) religion and spirituality; (d) leisure and social or civic activities; (e) personality and way of living; (f) financial situation and dealing with money-related issues; (g) work and employment; and (h) physical and mental fitness, health, and appearance. To gain insights into the similarities and differences in the domain stereotypes across age groups, they included participants from five birth cohorts: 1929–1938, 1939–1948, 1949–1958, 1959–1968, and 1969–1978. Participants rated each questionnaire item to indicate the positivity of their assessment of “old persons” on it. Results confirmed the validity of the eight domain stereotypes and identified both domain and cohort differences in the positivity of ratings. In general, older persons were rated most positively in the family, religion, and spirituality domains. They were rated most negatively in the friends and financial domains. Older cohorts provided more positive assessments across domains than younger cohorts with two exceptions: (a) Younger cohorts were more positive than older cohorts about the religious domain stereotype, and (b) younger cohorts evaluated the friends domain similarly to older cohorts.

Figure 4.1 illustrates how the positive and negative dimensions of the eight stereotype domains from Kornadt and Rothermund (2011) could relate to the seven positive and negative shared stereotypes identified in Hummert et al. (1994). Because older individuals operate in each of the eight domains, their characteristics and behaviors in one domain could suggest a negative age stereotype, whereas other characteristics and behaviors could activate a positive age

Stereotype Domains			
Positive Stereotypes		Negative Stereotypes	
<i>Golden ager</i>	+	Leisure and social/civic activities	– <i>Shrew/curmudgeon</i>
Lively, sociable, future-Oriented, fun-loving, happy, active, interesting, alert, Capable	+	Friends and acquaintances	– Complaining, bitter, ill-Tempered, stubborn, Demanding, prejudiced
	+	Work and employment	– <i>Despondent</i>
<i>Perfect grandparent</i>	+	Family and partnerships	– Depressed, sad, hopeless, Afraid, neglected, lonely
Kind, loving, family-oriented, Generous, understanding, wise	+	Personality and way of living	–
	+	Physical/mental fitness, health, and appearance	– <i>Severely impaired</i>
<i>John Wayne conservative</i>	+	Religion and spirituality	– Incoherent, slow-thinking, senile, inarticulate, Incompetent, feeble, forgetful
Patriotic, proud, determined, Retired, religious, nostalgic, Reminiscent	+	Financial situation	–
			<i>Recluse</i>
			Quiet, timid, naive

**FIGURE 4.1** Relationship between the seven positive and negative age stereotypes shared by young, middle-aged, and older adult participants in Hummert et al. (1994) and the eight age stereotype domains identified by Kornadt and Rothermund (2012).

stereotype. Thus, a person with the social skills of a golden ager who has age-related physical disabilities could be stereotyped positively or negatively depending on which domain is emphasized in the situation, as found in Hummert et al. (1998). From the domain perspective, the golden ager and perfect grandparent age stereotypes at the person level could represent positive stereotypes for friends and acquaintances or personality and way of living domains, whereas the shrew/curmudgeon and despondent age stereotypes could represent negative stereotypes for those domains.

### AGE STEREOTYPE EFFECTS, AGE IDENTITY, AND SUBJECTIVE AGE

A substantial body of research has demonstrated that age stereotypes operate implicitly and explicitly to affect the psychological well-being and behaviors of older individuals (Hess, 2006; Hummert, 2011; Levy, 2003, 2009). The emphasis has been on behavioral assimilation to age stereotypes, whether positive or negative, and related effects on psychological measures such as self-esteem. Two psychological mechanisms have received the most attention in this research: self-stereotyping (Levy, 1996, 2003, 2009) and stereotype threat (Chasteen, Bhattacharyya, Horhota, Tam, & Hasher, 2005; Hess et al., 2003; Hess & Hinson, 2006).

According to Levy's (2009) *stereotype embodiment theory*, self-stereotyping results from older adults' internalizing cultural age stereotypes and incorporating them into their self-perceptions. Self-stereotyping predicts that only self-relevant stereotypes affect behavior as well as that the effects of stereotypes occur implicitly. Supporting this view, Levy (1996) found that older, but not younger participants, exposed to subliminal negative stereotype primes performed more poorly on memory measures than did the older participants exposed to positive primes. Stereotype threat also predicts behavioral assimilation to stereotypes of one's group but through awareness of the stereotype and the fear of confirming it as valid—and self-descriptive—through one's behavior (Steele, Spencer, & Aronson, 2002). Like self-stereotyping, stereotype threat is expected to occur only when the group stereotype is salient to the self. Consistent with this expectation, Hess et al. (2003) found that memory performance of older, but not younger, participants who read a news article confirming the age-memory stereotype declined from baseline, whereas the performance of those who read an article disconfirming the stereotype improved from baseline.

Although this description presents self-stereotyping and stereotype threat as distinct mechanisms, they produce similar effects in inducing assimilation to age stereotypes (Hess, Emery, & Queen, 2009; Hummert, 2011). In addition, situational factors such as context, time constraints, or the match between a task and a stereotype domain can increase the impact of age stereotypes on behavior (Auman, Bosworth, & Hess, 2005; Hess et al., 2009; Levy & Leifheit-Limson, 2009). Likewise, individual differences in age identity, subjective age, the experience of age stigma, or the personal importance of a domain can affect susceptibility to the effects of age stereotypes (Hess et al., 2003; Kang & Chasteen, 2009; O'Brien & Hummert, 2006; see Chapter 5 by Chasteen & Cary, this volume, for a discussion of age stigma). The role of age identity is of particular interest because of its connection to subjective age (Weiss & Lang, 2012). Two studies are illustrative in this regard.

O'Brien and Hummert (2006) collected implicit age identity measures from middle-aged participants before administering memory tests and collecting psychological measures, including subjective age (Montepare, 1996). To provide a test of stereotype threat and self-stereotyping theories, participants were told that their memory ability would be compared either to people younger than 25 years (stereotype threat) or to those older than 75 years (self-stereotyping), whereas a third group of middle-aged participants served as a control. Results were consistent with self-stereotyping theory in that participants in the old comparison group exhibited poorer recall and reported older subjective ages than those in the young comparison and control groups. However, age identity moderated the self-stereotyping effects: Only those in the old comparison group with a mixed



(youthful/older) implicit age identity had poorer recall than those in the other two groups.

O'Brien and Hummert (2006) demonstrated that an older age identity could increase susceptibility to negative age stereotypes and lead to an older subjective age, but Weiss and Lang (2012, Study 2) looked at age dissociation (or disidentification) as a potential coping strategy to reduce the effects of exposure to negative age stereotypes on subjective age. They predicted that age identity would mediate the relationship between stereotype activation and subjective age bias (i.e., difference between felt age and chronological age). Weiss and Lang (2012) randomly assigned older adult participants to complete one of three online quizzes to activate age stereotypes: positive stereotype, negative stereotype, or neutral. Subsequently, participants completed an age group identity measure (e.g., "I identify with people my age") and indicated how old they felt in years. Results showed that participants in the negative stereotype condition identified less with their age group and reported greater subjective age bias (i.e., younger subjective ages) than did participants in the other two conditions. Furthermore, regression analysis supported the hypothesis that age group identity would mediate the relationship between negative stereotypes and subjective age.

### **Aging Experiences and Stereotypes: Effects on Subjective Age**

The construct of subjective age in the research reviewed to this point has been conceptualized as how old a person feels in relation to his or her chronological age, either as measured in years or on a general rating scale (e.g., younger, about the same, older than current chronological age; Montepare, 1996; Westerhof & Barrett, 2005; see Chapter 3 by Barrett & Montepare, this volume). However, attention has turned to investigating and defining the individual experiences which make aging salient and which undergird the more general concept of subjective age. Together, these experiences constitute a new view of subjective aging termed by Diehl and Wahl (2010)—*awareness of age-related change* (AARC; see Chapter 1 by Diehl, Wahl, Brothers, & Miche, this volume). The validity of the AARC construct has been established in a daily diary study involving 225 participants aged 70–89 years old (Miche et al., 2014). Results verified five major domains (each of which contained several subdomains) in which participants reported subjective aging experiences: health and physical functioning, cognitive functioning, interpersonal relations, social–cognitive and social–emotional functioning, and life style and engagement. The experiences were also coded for positivity and negativity, revealing a greater proportion of positive than negative experiences in the social–cognitive/social–emotional domain, a comparable number of positive and negative experiences in the interpersonal relations domain, and a greater proportion of negative than positive experiences in the

other three domains: health and physical functioning, cognitive functioning, and life style and engagement. Note that AARC experiences like age stereotypes are multidimensional and that the AARC domains correspond to the stereotype domains reported by Kornadt and Rothermund (2011).

Two experimental studies have successfully introduced manipulations which generated the aging experiences described by AARC investigators—experiences that are also consistent with positive or negative age stereotypes. In the first of these studies, Eibach, Mock, and Courtney (2010) conducted three experiments with participants aged 40 years and older in which they induced aging experiences and examined effects on subjective age, self-evaluations, and stereotype consistent judgments. The first experiment assigned participants to read a text in one of three visual fluency conditions: fluency (16 pt. regular black font), disfluency (8 pt. italicized grayscale font) explained as caused by a photocopying problem, and disfluency with no explanation. The second experiment used a 2 stereotype prime (positive/negative)  $\times$  2 visual disfluency (explained/unexplained) design. The first two experiments thus were aimed at inducing an experience in the physical functioning domain of the AARC and the stereotype of age-related decline in visual acuity. The third experiment focused on the stereotype that learning becomes more difficult with age by creating a generation gap experience, consistent with the cognitive functioning domain of the AARC. Participants were asked to determine the meaning of symbols that were described as emoticons used by young people in the generation gap condition but as transcription techniques used by stenographers in the control condition. Participants were assigned to these conditions in a 2 stereotype (confirmation/disconfirmation)  $\times$  2 (generation gap/control) design.

Results were similar in all three experiments. Participants in the conditions designed to induce an experience of aging (i.e., unexplained visual disfluency, generation gap) reported subjective ages which were significantly closer to their chronological age (i.e., older) than did participants in the other conditions. Participants in the aging experience/negative stereotype conditions had lower self-evaluations and were more likely to endorse stereotype consistent views than those in the other three conditions. However, the potential role of subjective age as a mediator between the negative aging experiences and the other outcome measures was not explored.

In the second study examining aging experiences, age stereotypes, and subjective age, Stephan, Chalabaev, Kotter-Grühn, and Jaconelli (2013) focused on creating a positive aging experience through a social comparison manipulation in the physical functioning domain of the AARC to counter the negative age stereotype associated with that domain. Older adult participants (52–91 years of age) first completed a subjective age measure, then read a passage emphasizing

the importance of grip strength as a measure of health and functioning for older individuals, followed by a test of their grip strength. Participants in the experimental group then received feedback that their grip strength exceeded that of others in their age group by 80%, whereas those in the control group received no feedback. All participants subsequently completed a questionnaire, which included a second subjective age measure and manipulation check items as well as filler questions. Last, participants completed a second grip strength test. Results indicated that the social comparison manipulation resulted not only in a younger subjective age in comparison to baseline for those in the experimental group but also an improvement in their grip strength from baseline. In contrast, control group members showed no change from baseline in either subjective age or grip strength.

### Summary

Together, the experimental studies of the effects of age stereotypes illuminate three aspects of their relationship to subjective aging. First, experimental induction of negative age experiences and stereotypes can lead to older subjective ages for older individuals as well as decrements in performance. In contrast, manipulations that call forth positive experiences and stereotypes can lead to younger subjective ages and improved performance, but for these beneficial effects to occur, the positive stereotype must match the performance domain. Second, age group identity may serve to moderate the impact of negative age stereotypes on subjective age and performance so that an older age identity may increase susceptibility to negative age stereotypes, whereas a younger age identity may protect against the effect of negative age stereotypes. Third, social comparison processes that induce dissociation from the older age group can serve to buffer subjective age and performance from the effects of the negative age stereotypes that are commonly associated with this age group.

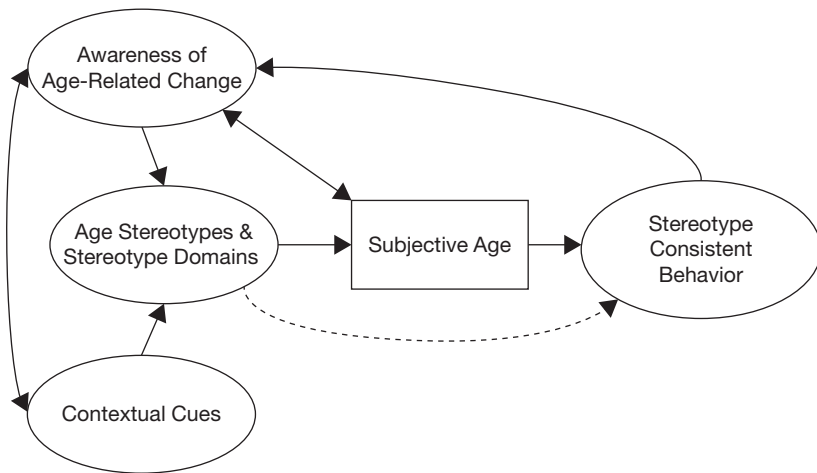
### DIRECTIONS FOR FUTURE EXPERIMENTAL RESEARCH ON AGE STEREOTYPES AND SUBJECTIVE AGING

Figure 4.2 presents a model of the relationships among key constructs discussed in this chapter—multiple age stereotypes and stereotype domains, context, awareness of age-related change, and subjective age—as they influence the behaviors of older individuals.

The model shows contextual cues and AARC leading to activation of domain-specific age stereotypes which have an indirect effect on stereotype-consistent behavior mediated by subjective age. The effects of the AARC and the domain-specific stereotype on subjective age and behavior will vary with

the valence of the experiences, the stereotype, and age identity processes. Prior research suggests two possible patterns in the case of negative valence. If the negative stereotype reinforces the individual's identification with the older age group, an older subjective age will result and lead to stereotype-consistent behavior (Eibach et al., 2010; O'Brien & Hummert, 2006). However, if the negative stereotype leads to dissociation from the older age group, a younger subjective age will ensue and should reduce the likelihood of behavioral assimilation to the negative stereotype or even improved performance (Stephan et al., 2013; Weiss & Lang, 2012). The possible patterns in response to positive valence are also twofold. Priming with positive stereotypes has led to performance benefits for older individuals (Levy, 1996, 2003, 2009) and so may be associated with a younger subjective age. On the other hand, activation of positive age stereotypes can lead to older subjective ages, perhaps by increasing age salience (Kotter-Grühn & Hess, 2012). Finally, the model predicts that stereotype-consistent behavior will itself constitute an AARC experience, increasing awareness of age-related change.

Additional studies are needed to clarify the relationships outlined in the model in Figure 4.2. These include studies of the contextual cues and AARC experiences that call forth the domain-specific age stereotypes, the role of age identity and dissociation processes in the emergence of alternative subjective age mediation patterns, and the effects of stereotype-consistent behavior on increasing AARC and internalization of age stereotypes.



**FIGURE 4.2** A mediation model with a feedback loop illustrating predicted relationships of contextual cues, AARC experiences, multiple age stereotypes, and domains to stereotype-consistent behaviors of older individuals.

### AARC Experiences and Contextual Cues to Domain Stereotypes

One of the strengths of the domain-specific stereotypes proposed by Kornadt and Rothermund (2011) and the five domains that comprise the AARC construct (Diehl & Wahl, 2010; Miche et al., 2014) is their acknowledgment that stereotypes and experiences of aging can vary across contexts as well as across individuals. Earlier stereotype research has identified those cues which activate positive or negative age stereotypes in person perception studies. These include facial features indicating advanced age, contexts such as nursing homes associated with negative age stereotypes, vocal cues to age, and interpersonal communication styles associated with positive and negative age stereotypes (Hummert, Garstka, Ryan, & Bonnesen, 2004). Some prior experimental research on stereotype threat has suggested that certain contexts such as hospitals or tasks such as memory tests activate domain-specific stereotypes in older participants (Auman et al., 2005; Hess et al., 2003). However, the nature of the contextual cues and AARC experiences that activate positive or negative domain stereotypes and that affect subjective age are only beginning to be explored in experiments (Eibach et al., 2010; Stephan et al., 2013).

One area to investigate is the *role of communication* in creating AARC experiences and inducing age stereotypes. The ways in which age stereotypes are implicated in communication directed at older persons has been well-documented, with negative stereotypes associated with use of a patronizing communication style (Giles & Gasiorek, 2011; Hummert et al., 2004). This communication style may trigger negative age stereotypes in the relational and cognitive stereotype domains. Although several studies indicate that observers judge this communication style as unsatisfactory, its impact on the self-perceptions and subjective age of recipients has received limited attention.

Cues related to multiple stereotype domains varying in valence are present in natural settings, but experiments focus most often on one domain to maintain internal validity. However, just as age stereotype and contextual cues have been manipulated as separate factors in person perception studies of age stereotypes (e.g., Hummert et al., 1998), contextual cues of varying valence could be manipulated in studies of subjective aging. Such experiments would reveal the relative weight individuals put on contextual cues consistent with a positively evaluated stereotype domain such as family and partnerships in comparison to a negatively evaluated stereotype domain such as physical and cognitive functioning as well as their relationship to AARC experiences as presented in Figure 4.2. Prior experimental research suggests that perceivers place greater value on negative information as diagnostic of stable individual characteristics of targets than on positive information (Skowronski & Carlston, 1989). That is, they exhibit the *fundamental attribution error*, making internal attributions about other individuals in the

face of negative information but external attributions about their own failings (Ross, 1977). Whether or not older individuals also make external attributions for negative AARC experiences or view those experiences as diagnostic of stable characteristics of the aging self is a question for investigation. The answer will carry implications for the nature of the age stereotypes activated in situations that involve both positive and negative stereotype cues.

### **Age Group Identification or Dissociation and Subjective Age as a Mediator**

Several studies (Stephan et al., 2013; Weiss & Freund, 2012; Weiss & Lang, 2009, 2012; Weiss, Sassenberg, & Freund, 2013) have manipulated age group identification to examine its relationship to subjective age and behavioral assimilation to negative age stereotypes. Results confirm the hypothesis that dissociation from one's chronological age group is a response to negative age stereotypes, which leads to younger subjective ages and serves a protective psychological function for older persons. Stephan et al. (2013) found that dissociation contributed to improved performance on a physical task. When age identity has been assessed prior to experimental manipulations or in correlational studies, however, results suggest that dissociation is not an automatic response to negative age stereotypes so that older subjective ages and behavioral assimilation to stereotypes follow (Kotter-Grühn & Hess, 2012; O'Brien & Hummert, 2006).

As indicated in Figure 4.2, subjective age has been viewed as having a mediational role in the relationship between age stereotypes and assimilation to age stereotypes (Eibach et al., 2010; Stephan et al., 2013). However, none of the studies to date has tested this hypothesis. Future research should address this oversight to provide insight into the conditions under which subjective age mediates the relationship between age stereotypes and stereotype-consistent behaviors, as well as the conditions under which it does not.

### **Effects of Stereotype-Consistent Behavior on AARC and Subjective Age**

The model in Figure 4.2 shows that engagement in stereotype-consistent behavior may itself contribute to AARC with a related impact on subjective age. This predicted relationship is consistent with other feedback models in the aging literature such as the communicative predicament of aging (CPA) model (Ryan, Giles, Bartolucci, & Henwood, 1986). According to the CPA model, experiencing age-adapted communication from others can reinforce age stereotypes, contribute to loss of self-esteem, and result in further age-related decline in older individuals. These predictions have received empirical support (Giles & Gasiorek, 2011; Hummert et al., 2004).

The theoretical framework for AARC and age stereotype domains presented by Diehl et al. (see Chapter 1, this volume) and correlational data on the relationships between individuals' evaluations of AARC domains, age stereotype domains, and their self-evaluations are consistent with the feedback loop proposed in Figure 4.2. Kornadt and Rothermund (2012) found a positive relationship between individuals' evaluations of age stereotype domains and their current selves, which was mediated by their future self-views, and Miche et al. (2014) found a similar positive relationship between participants' assessment of the valence of AARC domains and their subjective well-being. Experimental research is necessary to provide a full test of these relationships.

## CONCLUSIONS

Experimental and quasi-experimental research has been emphasized in this chapter because the experimental method offers the best opportunity to test causal relationships in theoretical models, such as those presented in Figure 4.2 (Campbell & Stanley, 1963; Crano & Brewer, 2002). At the same time, the experimental method has limitations which create challenges for all investigators but perhaps especially for developmental psychologists. One example is the tension that exists between the control necessary to establish internal validity on the one hand and the need to create ecologically valid manipulations and dependent measures that are equivalent across age groups to establish generalizability on the other. Another example is the difficulty (if not the inability) of documenting long-term effects and individual change trajectories central to developmental theories solely through experiments (Campbell & Stanley, 1963; Cook & Campbell, 1979; Crano & Brewer, 2002). Complementing experiments with correlational studies constitutes an effective way to address some of these limitations. However, experimental researchers can increase the validity of their studies through careful designs which appropriately address the threats to internal validity, such as the absence of a control group, and develop creative experimental manipulations which closely mimic experiences and activities in natural settings (as in Stephan et al., 2013).

Prior research on the multidimensionality and dual valence of age stereotypes and stereotype domains carries implications for the study of AARC experiences and subjective age as they relate to psychological well-being of older individuals and their behavioral assimilation to age stereotypes. Although some relationships have received clear support in experimental tests, additional investigation of the contextual cues and AARC experiences that call forth positive and negative age stereotype and stereotype domains is necessary. Similarly, the role of age identification or dissociation in influencing subjective age, as well as

the mediating role of subjective age in buffering or increasing the effects of age stereotypes on self-perceptions and behaviors of older persons, deserve study. Finally, examination of the extent to which behavioral assimilation to age stereotypes creates a feedback cycle which affects AARC and subjective age would advance our theoretical understanding of the power of stereotype-consistent behavior in the experience of subjective aging.

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