
Physical Appearance and Control Beliefs in Young, Middle-Aged, and Older Adults

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The authors investigated whether general and domain-specific control beliefs were related to stigmatizing physical appearance qualities in young, middle-aged, and older adults. Being babyfaced, unattractive, or short was associated with diminished control beliefs in young and middle adulthood, whereas being overweight was not. Those who were less attractive, more babyfaced, shorter, or heavier sometimes perceived more rather than less control than their more favored peers, suggesting that individuals whose appearance creates social barriers may compensate with greater efforts to control their social environment. One notable age difference was that high babyfacedness was associated with diminished control beliefs at younger ages but with higher control beliefs in older adulthood.

The study of control beliefs has received much attention in the psychological literature. Perceived control was originally conceptualized as a unidimensional construct and assessed internal versus external locus of control (Rotter, 1966). More recently, however, research has demonstrated that perceived control is multidimensional (e.g., Levenson, 1981). Consistent with Skinner's (1996) conceptualization of control beliefs as composed of contingency and competence, we have operationalized perceived control using the dimensions of external constraints and personal control. Beliefs about external constraints measure perceived contingency and indicate to what extent one believes there are obstacles or factors beyond one's control that interfere with reaching goals. Personal control measures one's perceived competence, mastery, or sense of efficacy in carrying out goals. It is important to consider the relationship between perceived control and real or actual control. Actual control is difficult to measure but perceived control serves as a reasonable proxy, because studies that have assessed both have found that adults are

generally accurate in their perceptions (Weisz, 1983).¹ Factors such as age, education, and income have been found to contribute to perceived control (e.g., Lachman & Weaver, 1998a; Rodin, 1986). The present study investigates another possible source of control beliefs, one's physical appearance. Toward this end, we examine the influence of socially stigmatizing appearance qualities on perceptions of external constraints and personal control.

Crocker, Major, and Steele (1998) have defined stigma as any characteristic or attribute possessed by an individual that conveys a negative social identity and is devalued in a particular social context. Research on appearance stereotypes has revealed that those who are unattractive, babyfaced (characterized by round face, large eyes, small nose bridge, small chin), overweight, or short are perceived more negatively on a number of characteristics. For example, unattractive individuals are perceived as less socially skilled, less healthy, less intelligent, and less sexually warm than attractive individuals (Eagly, Ashmore, Makhijani, & Longo, 1991; Feingold, 1992). Babyfaced individuals are expected to have childlike traits and are perceived as submissive, naive, and physically weak (see Montepare & Zebrowitz, 1998; Zebrowitz, 1997, for reviews). Overweight individuals are perceived as lazy, gluttonous, slow, and unintelligent

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(e.g., Allon, 1982; Dejong & Kleck, 1986) and tend to be blamed for their own condition, which implies that they are seen as lacking self-control (Crandall, 1994; Dejong, 1980). Finally, shorter individuals are perceived as lower in professional status and less competent in social and cognitive domains (Brackbill & Nevill, 1981; Chaiken, 1986; Eisenberg, Roth, Bryniarski, & Murray, 1984; Jackson & Ervin, 1992). Thus, each of these appearance qualities conveys a devalued social identity in various social contexts and therefore can be considered stigmatizing. Whereas most of these appearance qualities are likely to be stigmatizing across the life span, babyfacedness may be one exception. The stigmatizing effects of babyfacedness may be reversed in later adulthood, when looking younger can be a buffer against the discrimination that older adults experience (see Pasupathi, Carstensen, & Tsai, 1995, for a review of research on ageism).

Research on the effects of stigma has shown that one of the primary concerns of the stigmatized individual is the threat of becoming the target of prejudice and discrimination (Crocker et al., 1998). Consistent with the view that certain appearance qualities are stigmatizing, research has demonstrated that individuals who are unattractive, babyfaced, overweight, or short experience prejudice and discrimination in interpersonal relationships, educational settings, the job market, the workplace, politics, and the criminal justice system (see Langlois et al., 1996; Montepare & Zebrowitz, 1998; Zebrowitz, 1997, for reviews of attractiveness and babyface literature; Rothblum, Brand, Miller, & Oetjen, 1990, for overweight literature; Collins & Zebrowitz, 1995; Roberts & Herman, 1986, for height literature).

So how might a stigmatizing appearance influence control beliefs? The answer to this question depends on the type of control beliefs to which we are referring. The relationship between physical appearance and perceived external constraints is the most straightforward. The negative expectations and treatment associated with a stigmatizing appearance are likely to lead unattractive, babyfaced, overweight, or short individuals to perceive high external constraints. Predicting the relationship between physical appearance and personal control is more complicated. To the extent that stigmatized individuals feel unable to overcome these constraints, they also may perceive low personal control. Although researchers have hypothesized that overweight and unattractive individuals would be more likely to have an external locus of control, most studies failed to find such a relationship (e.g., Barrios, Barrios, & Topping, 1977; Cash & Smith, 1982; Shea, Crossman, & Adams, 1978). Other research has suggested that this may be because

stigmatized individuals compensate for negative expectations. Such compensation in response to perceived constraints may facilitate greater feelings of personal control. Miller, Rothblum, Felicio, and Brand (1995) found that overweight women compensated for negative expectations associated with the stigma of being overweight by behaving in a more socially skilled manner when they knew that they might be judged by their weight. Miller and Rudiger (1997) also found evidence that unattractive women may attempt to compensate for their appearance by projecting an athletic, attractive image. This may lead to feelings of personal control equal to those of the nonstigmatized even when perceived external constraints are high.

Moreover, research has shown that stigmatized individuals sometimes overcompensate by going beyond what is needed to overcome the prejudices resulting from their stigma. For example, Zebrowitz, Collins, and Dutta (1998) found that in contrast to the babyface stereotype, middle-class, babyfaced adolescent boys were more assertive and hostile than their maturefaced peers. This finding suggests that the babyfaced boys were overcompensating for expectations that they would be submissive, naive, and warm. Likewise, Zebrowitz, Andreoletti, Collins, Lee, and Blumenthal (1998, Study 3) found that lower class babyfaced boys were more likely to be delinquent, particularly when the boys were also short. This provides some evidence that short individuals also may overcompensate for lowered expectations based on their height. Moreover, within the group of delinquents, those who were more babyfaced committed more crimes. Overcompensation by babyfaced individuals may have positive as well as negative outcomes. Indeed, babyfaced adolescent boys from middle-class samples had higher educational attainment than their maturefaced peers (Zebrowitz, Andreoletti, et al., 1998), and babyfaced soldiers who served in the military during World War II and the Korean War were more likely to win a military award (Collins & Zebrowitz, 1995). Although compensation may result in the finding of no relationship between physical appearance and personal control, overcompensation would lead to stronger feelings of personal control in those who have a socially stigmatizing appearance.

The present study investigated whether control beliefs were related to physical appearance in young, middle-aged, and older adults. This study improved over past research by measuring general control beliefs on two separate dimensions, external constraints and personal control, as well as by measuring domain-specific control beliefs. The latter were measured only on a single dimension of personal control in the domains of

work, finances, relationship with partner, and health. This study also improved over past research by examining multiple appearance variables and by controlling for socioeconomic status (SES) and health, which have been found to predict control beliefs (e.g., Lachman & Weaver, 1998a) and which may be correlated with appearance (e.g., Alder et al., 1994; Udry & Eckland, 1984). Finally, this study examined the relationship between appearance and control beliefs across the adult life span, which is important for two reasons. First, although general control beliefs are relatively stable across the life span, domain-specific beliefs (e.g., control over work) have been found to vary with age (Lachman & Weaver, 1998b). Second, the influence of appearance on external constraints also may vary with age.

Based on research that has documented the influence of appearance stereotypes in shaping an individual's social environment, we predicted that individuals of all ages who were unattractive, overweight, or short would perceive high external constraints in reaching their goals. To the extent that these individuals felt unable to overcome these constraints, we predicted that they would perceive low personal control in general and less control over their work, finances, health, and partner in particular. Alternatively, to the extent that these individuals overcompensate for the external constraints they encounter, they may perceive more rather than less control in general as well as in each domain. Unlike the other appearance variables, it was expected that the effects of babyfacedness would vary across age groups. We predicted that the effects for young and middle-aged babyfaced adults would be the same as those predicted for unattractive, overweight, or short individuals. However, because babyfaced adults tend to look younger than their maturefaced peers (Berry & McArthur, 1985), which can be advantageous in older adulthood, we predicted that older babyfaced adults would perceive fewer external constraints and perhaps more personal control in general as well as more control over work, finances, health, and partner in particular.

Finally, sex was examined as a moderating variable for two reasons. First, sex differences have been found in research on control beliefs (e.g., Lachman & Weaver, 1998b). Second, previous research suggests that being unattractive or overweight may be more stigmatizing for women (e.g., Feingold, 1990; Rothblum et al., 1990), whereas being babyfaced or short may be more stigmatizing for men (e.g., Friedman & Zebrowitz, 1992; Jackson & Ervin, 1992; McArthur & Apatow, 1983-1984). Thus, it was expected that the effects of being unattractive or overweight on control beliefs might be stronger for women, whereas the effects of being babyfaced or short might be stronger for men.

METHOD

Participants

Participants were a subset from the Mid-Life in the United States (MIDUS) survey conducted by the John D. and Catherine T. MacArthur Foundation Network on Successful Mid-Life Development. This subset, the Boston In-Depth Study of Management Processes in Midlife, consists of an oversampling of 302 noninstitutionalized, English-speaking adults between the ages of 25 and 76 ($M = 47.8$, $SD = 13.1$) in the Greater Boston area. The sample was 41% female, primarily White, and roughly half of the participants had a college degree or more.

Participants, recruited for the national study in 1995 using random-digit dialing, completed a 20 to 30 minute phone interview and a self-administered mail-in questionnaire (Midlife Development Inventory—MIDI). Participants who completed the initial study and lived in the Greater Boston area were recruited for the Boston study and interviewed three times between fall 1995 and summer 1997. Time 1 consisted of a 30-minute phone interview and a 20-minute self-administered mail-in questionnaire. Time 2 consisted of a 90-minute session of cognitive tests, interview, and photographs. Time 3 consisted of a 30-minute phone interview. To be included in the present study, participants needed both perceived control data from the initial assessment with the MIDI questionnaire and appearance data collected during Time 2 of the Boston study. A total of 131 men and 79 women met these criteria.

Appearance Predictors

Babyfacedness and attractiveness. High-quality front and profile view photographs of each participant with neutral facial expressions (jewelry and glasses permitted) were taken at Time 2 in the Boston study. Participants were photographed from the shoulders up with a blue cape covering their upper body standing 3 feet away in front of a gray sheet with their identification number written on a blue card and taped to the lower left-hand corner of the sheet. Fifty-five introductory psychology students served as judges for credit toward a course requirement. Approximately equal numbers of male and female judges in small groups rated frontal or profile view slides of participants' faces on one of two 7-point Likert scales (*maturefaced/babyfaced* or *unattractive/attractive*). Slides were presented in age groups (25-35 years, 36-45 years, 46-55 years, 56-65 years, 66-76 years). Within each age group, slides also were grouped by sex. Judges were told that the faces ranged in age from 26 to 76 years but were not given the exact age of each participant; instead, the age groups were defined as about 30, about

40, and so on. Judges were instructed to rate each participant's appearance relative to others of the same age and sex. This was done because the social consequences of babyface or attractiveness depend on how individuals compare with others of their own age and sex. If a 30-year-old man is seen as more babyfaced than a 50-year-old man, that has less significance than if he is seen as more babyfaced than other 30-year-old men. Presentation of the slides was counterbalanced to control for order effects in the ratings. Mean ratings by male and female judges for each appearance measure were highly correlated (r s ranged from .67 to .80). Cronbach's alpha coefficients were calculated across male and female judges and ranged from .75 to .87. Composite measures of babyfacedness and of attractiveness were created by standardizing and summing all judges' ratings of frontal and profile view slides, which were significantly correlated; attractiveness: $r(227) = .71$, babyfacedness: $r(227) = .58$. These composite measures were used to predict perceived control rather than ratings based on either the frontal or profile photos alone because they provided a more ecologically valid indicator of social perceptions that could influence feelings of control. The validity of these appearance ratings is supported by the fact that they were significantly correlated with ratings made by a single interviewer at the beginning of the Time 2 sessions in the Boston study; r for attractiveness = .47 and r for babyfacedness = .25, p s < .001. Although 58 of the 288 Time 2 participants refused to have their pictures taken, there was not a significant difference in the interviewers' attractiveness and babyfacedness ratings of those who agreed to have their picture taken and those who did not, both t s < 1.

Height. A self-reported measure of height in inches was taken from the MIDI questionnaire completed by the participants as part of the initial national study. Height was standardized within each sex to reduce its correlation with sex.

Body Mass Index (BMI). An index of obesity, BMI (weight in kg/height in m²), was calculated from self-reported measures of height and weight, which were taken from the MIDI questionnaire and converted to metric.

Demographic Predictors

SES. A measure of SES for each participant was created by standardizing and summing self-reported measures of education and household income. Education was measured on a 12-point scale (1 = *some grade school*, 2 = *junior high/eighth grade*, 3 = *some high school*, 4 = *general equivalency diploma (GED)*, 5 = *graduated from high school*, 6 = *1 to 2 years of college, no degree*, 7 = *3 years of college, no degree*, 8 =

2-year college degree, 9 = *4-year college degree*, 10 = *some graduate school*, 11 = *master's degree*, and 12 = *doctoral-level degree*). Household income was measured on a 7-point scale (1 = *less than \$10,000*, 2 = *\$10,000 to \$14,999*, 3 = *\$15,000 to \$19,999*, 4 = *\$20,000 to \$24,999*, 5 = *\$25,000 to \$34,999*, 6 = *\$35,000 to \$49,999*, and 7 = *\$50,000 or more*).

Health problems. As part of the MIDI questionnaire, participants rated whether they had experienced or been treated for 28 chronic health problems in the past 12 months (e.g., asthma, thyroid disease, ulcer, diabetes, hypertension). A measure of health problems was created by summing the number of chronic health problems endorsed by each respondent.

Criterion Variables

General control scales. General control was operationalized on two dimensions: external constraints and personal control. The External Constraints Scale (Cronbach's $\alpha = .61$) included three items from Lachman and Weaver's (1998a, 1998b) Perceived Constraints Scale that were indicative of external factors beyond one's control that interfere with reaching goals (e.g., "there are many things that interfere with what I want to do"). The Personal Control Scale (Cronbach's $\alpha = .80$) included nine items that were indicative of one's sense of efficacy in carrying out goals (e.g., "whether I am able to get what I want is in my own hands"). The Personal Control Scale was composed of all items from Lachman and Weaver's (1998a, 1998b) Personal Mastery Scale and five additional items from their Perceived Constraints Scale that were not included in the External Constraints Scale. Participants indicated on a 7-point scale the extent to which they agreed with each of the items (1 = *strongly agree*, 7 = *strongly disagree*). Items were reverse-scored when necessary so higher scores reflected more external constraints or greater personal control. The mean of the items was computed for respondents who had at least two of the three items on the External Constraints Scale and at least four of the nine items on the Personal Control Scale.

Domain-specific control scales. Personal control in four different domains (health, work, finances, and relationship with partner) was assessed using an 11-point scale for each domain (0 = *no control at all*, 10 = *very much control*). The wording of the item was as follows: "Using a 0 to 10 scale where 0 means *no control at all* and 10 means *very much control*, how would you rate the amount of control you have over your ___ these days?" For work control, only those individuals who worked for pay were included in the analyses. Measures of external constraints in each domain were not available in the data set.

TABLE 1: Correlation Matrix for Predictor and Criterion Variables for Young Men and Women

	1	2	3	4	5	6	7	8	9	10	11	12
1. Babyfacedness	—	.18	-.37**	.09	-.06	-.05	.10	.17	-.13	.02	.04	.358*
2. Attractiveness	.16	—	-.09	-.42***	-.14	.15	.11	.03	.10	-.08	.04	.08
3. Height	.22	.27	—	.02	-.10	-.03	.05	.15	.33**	-.12	-.00	.08
4. BMI	.07	-.23	-.36*	—	.05	-.11	-.26*	.29*	-.13	.19	.10	.16
5. Health problems	.06	.01	-.39*	-.54***	—	-.16	.23	-.30*	-.20	-.06	-.28*	-.13
6. SES	.19	.45**	.48**	-.05	.01	—	-.19	.25	.13	.28*	-.15	-.06
7. External constraints	.08	-.06	-.32	-.31	-.16	-.14	—	-.49****	-.20	-.34**	-.37**	-.52****
8. Personal control	.33	-.10	.21	.37*	.40**	.06	-.55***	—	.43***	.39***	.28*	.40**
9. Work control	.08	.20	-.03	.39*	.19	.21	-.35	.21	—	.32**	.36**	.41**
10. Finance control	.03	-.08	-.04	-.03	-.03	.27	.29	.12	.26	—	-.10	.37**
11. Health control	-.01	-.22	-.16	.35	-.11	.19	-.23	-.26	.01	-.05	—	.49***
12. Partner control	-.57**	-.51**	.32	.20	-.16	-.03	-.58**	.18	-.00	-.18	.12	—

NOTE: Men are above the diagonal and women are below. Unless otherwise noted, $n = 43$ for men; $n = 26$ for women. For work control, $n = 39$ for men; $n = 23$ for women. For partner control, $n = 34$ for men; $n = 17$ for women. BMI = Body Mass Index, SES = socioeconomic status.

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

RESULTS

Overview

Regression analyses were performed separately for young (25-39 years, M age = 32.9, $SD = 4.1$), middle-aged (40-59 years, M age = 49.8, $SD = 5.0$), and older (60-76 years, M age = 66.1, $SD = 4.0$) adults to determine the influence of appearance on general external constraints and personal control as well as work control, finance control, health control, and partner control. The predictors were babyfacedness, attractiveness, height, BMI, sex, SES health problems, and interactions of sex with the appearance variables.² All variables were entered simultaneously. Because the models included many non-significant predictors, trimmed models were designated by deleting all predictors with $t < 1$. The data for each of the predictor variables involved in the interactions were centered on the mean to reduce collinearity (Cohen & Cohen, 1983). In models that included significant interactions, simple slope analyses were conducted by running separate regression analyses for men and women. Correlations among the predictor and criterion variables for young, middle-aged, and older adults are presented in Tables 1, 2, and 3. A summary of the regression analyses is presented in Table 4, and results of the regressions by each appearance predictor are presented below.

Face Effects

Babyfacedness. For young adults, there was a significant Babyfacedness \times Sex interaction for partner control ($\beta = -.35, p = .01$) (see Figure 1). Simple slope analyses revealed that young babyfaced women perceived less control over their partners than did their maturefaced peers ($\beta = -.39, p = .05$). In contrast, young babyfaced men perceived more control over their partners than did their maturefaced peers ($\beta = .34, p = .08$). There were

no effects of babyfacedness on any of the other control variables for young adults.

For middle-aged adults, as predicted, those who were more babyfaced perceived more external constraints than did their more maturefaced peers ($\beta = .25, p = .02$). Consistent with perceiving more constraints, middle-aged babyfaced adults also perceived less control over their work ($\beta = -.31, p = .02$) and their finances ($\beta = -.21, p = .05$). There were no effects of babyfacedness on any of the other control variables for middle-aged adults. As predicted, in contrast to the findings for young and middle-aged adults, babyfaced older adults perceived fewer constraints than did their maturefaced peers ($\beta = -.33, p = .03$). This finding was qualified by a significant Babyfacedness \times Sex interaction ($\beta = -.25, p = .05$), which revealed that this effect was stronger for women than for men (see Figure 1). Although simple slope analyses revealed that neither the slope for men nor women was significantly different from zero, the lack of significance for women can be attributed to the small n . For older adults, a babyface was not associated with any of the other control variables.

Attractiveness. Contrary to prediction, there were no effects of attractiveness on control beliefs for young or older adults. For middle-aged adults, as predicted, those who were less attractive perceived less control over work ($\beta = .28, p = .04$) than did those who were more attractive. An Attractiveness \times Sex interaction for health control ($\beta = -.35, p = .005$) revealed that, consistent with the over-compensation predictions, less attractive middle-aged women perceived more control over their health than did their more attractive peers ($\beta = -.52, p = .03$) (see Figure 2). Although attractiveness did not have a significant effect on health control for middle-aged men as we had predicted, this finding supports our prediction that attractiveness would have stronger effects for women.

TABLE 2: Correlation Matrix for Predictor and Criterion Variables for Middle-Age Men and Women

	1	2	3	4	5	6	7	8	9	10	11	12
1. Babyfaceness	—	.37***	.09	.27	.16	-.27*	.32**	-.22	-.28*	-.20	-.29**	-.19
2. Attractiveness	.52***	—	-.10	-.12	-.20	.15	-.25*	.30**	.19	.33**	.16	-.03
3. Height	-.16	-.02	—	-.01	.13	-.15	.27*	-.34**	-.03	-.23	-.08	.04
4. BMI	-.04	-.54***	-.15	—	.12	-.41***	.39***	-.19	-.23	-.36**	-.38***	-.02
5. Health problems	-.35**	-.13	.15	-.02	—	-.28*	.51***	-.40***	-.44***	-.60***	-.34**	-.28*
6. SES	.41**	.43***	-.02	-.07	-.21	—	-.55***	.34**	.20	.39***	.20	.15
7. External constraints	-.02	-.00	-.15	-.20	.23	-.24	—	-.64***	-.47***	-.66***	-.50***	-.57***
8. Personal control	.18	.08	-.20	.09	-.39**	.25	-.51***	—	.43***	.37***	.43***	.39**
9. Work control	-.00	.02	-.11	.25	.13	.20	-.48**	.27	—	.46***	.54***	.19
10. Finance control	-.14	-.20	-.22	.15	-.42**	.14	-.23	.38**	.36*	—	.46***	.26
11. Health control	.12	-.23	-.17	.23	-.41**	.24	-.61***	.49***	.05	.43**	—	.33**
12. Partner control	.26	.04	.19	.08	-.13	.19	-.22	-.11	.23	-.24	.09	—

NOTE: Men are above the diagonal and women are below. Unless otherwise noted, $n = 48$ for men; $n = 35$ for women. For work control, $n = 43$ for men; $n = 27$ for women. For finance control, $n = 34$ for women. For partner control, $n = 40$ for men; $n = 22$ for women. BMI = Body Mass Index, SES = socioeconomic status.

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

TABLE 3: Correlation Matrix for Predictor and Criterion Variables for Older Men and Women

	1	2	3	4	5	6	7	8	9	10	11	12
1. Babyfaceness	—	.39**	.03	.34**	-.11	.06	-.08	.14	.00	-.02	.03	.36*
2. Attractiveness	.68***	—	-.14	-.11	-.22	.35**	.12	-.12	-.23	-.04	.12	.04
3. Height	.06	-.26	—	.01	-.07	.30*	-.28*	-.20	-.01	-.02	.02	-.30
4. BMI	-.03	-.21	-.27	—	.18	-.31*	-.03	.10	-.14	-.05	-.10	.23
5. Health problems	-.01	.08	-.11	.16	—	-.15	.09	-.06	-.12	-.17	-.45***	-.09
6. SES	.17	.22	.21	-.02	-.19	—	-.26	.10	-.04	-.11	-.07	-.28
7. External constraints	-.40	-.22	.22	-.20	.21	-.27	—	-.72***	-.22	.03	-.21	-.23
8. Personal control	.21	.00	.17	.42	-.16	.51**	-.57**	—	-.19	-.01	.28*	-.03
9. Work control	.70**	.36	.11	.04	.19	-.40	.41	-.27	—	.06	.13	.33
10. Finance control	.15	-.11	-.03	.04	.11	-.12	-.40	-.03	-.16	—	.30*	.27
11. Health control	.14	-.10	.06	.34	.09	-.23	-.29	.59**	.31	.62**	—	-.06
12. Partner control	.55	.25	.36	-.78	-.29	-.71	-.23	-.48	—	.86*	.72	—

NOTE: Men are above the diagonal and women are below. Unless otherwise noted, $n = 40$ for men; $n = 18$ for women. For work control, $n = 20$ for men; $n = 10$ for women. For finance and health control, $n = 36$ for men; $n = 16$ for women. For partner control, $n = 30$ for men; $n = 5$ for women. BMI = Body Mass Index, SES = socioeconomic status.

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

Contrary to predictions, attractiveness did not have an effect on any of the other control variables in middle age.³

Body Effects

Height. There was a significant Height \times Sex interaction for external constraints among young adults ($\beta = -.33, p = .01$). As predicted, simple slope analyses revealed that shorter young women perceived more constraints than did their taller peers ($\beta = .25, p = .01$), whereas contrary to prediction, there was no effect for men (see Figure 3). However, shorter young adults of both sexes perceived less general personal control ($\beta = .24, p = .04$). As for young adults, there was a Height \times Sex interaction for external constraints among middle-aged

adults ($\beta = -.19, p = .05$). Although simple slope analyses revealed that neither of the slopes was significantly different from zero, a comparison of the regression coefficients across age revealed some interesting differences, which are discussed below. In contrast to findings for younger adults, but consistent with overcompensation predictions, shorter middle-aged adults perceived more personal control than their taller peers ($\beta = -.21, p = .03$). There were no significant effects of height on any of the other control variables for young, middle-aged, or older adults.

Weight. Contrary to predictions, young adults with higher BMIs perceived fewer external constraints than did young adults with lower BMIs ($\beta = -.45, p = .001$). However, consistent with the overcompensation

TABLE 4: Summary of Regression Analyses Predicting Control for Young, Middle-Aged, and Older Adults

	<i>Young</i>	<i>Middle-Age</i>	<i>Older</i>
External constraints	$R^2 = .24, F(7, 61) = 2.75^{**}$	$R^2 = .43, F(9, 73) = 6.01^{****}$	$R^2 = .27, F(7, 50) = 2.66^{**}$
Babyfacedness	.21*	.25**	-.33**
Attractiveness		-.19*	.29*
Height	-.06	.02	-.01
BMI	-.45****	.02	
Sex	-.32**	-.18**	.25**
Babyfacedness × Sex			-.25**
Attractiveness × Sex			
Height × Sex	-.33***	-.19**	.27*
BMI × Sex	-.16	-.25***	
SES		-.25***	-.31**
Health problems	.17	.29***	
Personal control	$R^2 = .25, F(7, 61) = 2.92^{***}$	$R^2 = .27, F(5, 77) = 5.79^{****}$	$R^2 = .23, F(6, 51) = 2.50^{**}$
Babyfacedness	.22*	-.16	.23
Attractiveness	-.02	.17	-.24
Height	.24**	-.21**	
BMI	.40***		.16
Sex	.12		-.25**
Babyfacedness × Sex			
Attractiveness × Sex	-.16		
Height × Sex			
BMI × Sex			.11
SES	.17	.16	.30**
Health problems		-.31***	
Work control	$R^2 = .23, F(7, 54) = 2.33^{**}$	$R^2 = .27, F(7, 61) = 3.28^{****}$	
Babyfacedness		-.31**	
Attractiveness	.15	.28**	
Height	.25*	-.12	
BMI	.17	.06	
Sex	-.03	.31***	
Babyfacedness × Sex			
Attractiveness × Sex	.17		
Height × Sex	-.16		
BMI × Sex	.36***	.22*	
SES			
Health problems		-.24**	
Finance control		$R^2 = .47, F(10, 71) = 6.34^{****}$	
Babyfacedness		-.21**	
Attractiveness		.09	
Height		-.14	
BMI		-.12	
Sex		.22***	
Babyfacedness × Sex		-.12	
Attractiveness × Sex		-.18	
Height × Sex			
BMI × Sex		.14	
SES		.15	
Health problems		-.46****	
Health control		$R^2 = .28, F(8, 74) = 3.58^{****}$	$R^2 = .19, F(5, 52) = 2.39^{**}$
Babyfacedness		.05	
Attractiveness		-.19	
Height			
BMI		-.11	-.07
Sex		-.04	.10
Babyfacedness × Sex		.23*	

(continued)

TABLE 4 Continued

	Young	Middle-Age	Older
Health control		$R^2 = .28, F(8, 74) = 3.58^{***}$	$R^2 = .19, F(5, 52) = 2.39^{**}$
Attractiveness \times Sex			-.35 ^{***}
Height \times Sex			
BMI \times Sex			.25*
SES		.14	-.18
Health problems		-.31 ^{***}	-.33 ^{***}
Partner control	$R^2 = .35, F(8, 42) = 2.77^{***}$		
Babyfacedness	.09		
Attractiveness	-.09		
Height	.26*		
BMI	.20		
Sex	.10		
Babyfacedness \times Sex	-.35 ^{***}		
Attractiveness \times Sex	-.27*		
Height \times Sex	.13		
BMI \times Sex			
SES			
Health problems			

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

predictions, heavier young adults perceived more general personal control ($\beta = .40, p = .004$), and a significant BMI \times Sex interaction ($\beta = .36, p = .01$) also revealed that heavier young women perceived more control over work than their thinner peers ($\beta = .53, p = .03$). BMI did not have a significant effect on work control for young men (see Figure 3). There were no effects of BMI on any of the other control variables for young adults. For middle-aged adults, there was a significant BMI \times Sex interaction for external constraints ($\beta = -.25, p = .01$). However, this effect will not be discussed further because simple slope analyses revealed that neither the slope for men nor women was significantly different from zero. There were no effects of BMI on any other control variables for middle-aged adults and no effects for older adults.

Age Differences

Comparisons between the regression coefficients for babyface effects across age groups were made to test the hypothesis that a babyface is more advantageous for older than for young and middle-aged adults (Cohen & Cohen, 1983, p. 111). Comparisons across age also were made for other appearance variables when there were different effects across age groups. Regression coefficients for these comparisons were taken from the untrimmed regression models if the variable had been trimmed or if the regression equation was not significant. These comparisons revealed significant age differences for the effects of babyfacedness and height, although the latter findings should be interpreted with caution because no age differences had been predicted.

Babyfacedness. As predicted, the tendency for more babyfaced young and middle-aged adults to perceive more external constraints significantly differed from the tendency for more babyfaced older adults to perceive fewer constraints ($z_s = 2.92$ and 3.27 , respectively; $p_s < .01$). Comparisons across age groups also revealed a significant difference between the regression coefficients for the Babyface \times Sex interactions predicting partner control for young and middle-aged adults ($z = 3.21, p < .01$). Analysis of the simple effects revealed that the positive effect of babyfacedness on partner control for young men was significantly different from the effect for middle-aged men ($z = 1.98, p < .05$). The negative effect of babyfacedness for young women was also marginally different from the effect for middle-aged women ($z = 1.67, p < .10$).

Height. Comparisons across age groups revealed that the regression coefficients for the Height \times Sex interaction predicting external constraints differed significantly for young and older adults ($z = 3.11, p < .01$) as well as for middle-aged and older adults ($z = 2.70, p < .01$). Analysis of the simple effects revealed that the tendency for shorter, young and middle-aged women to perceive more constraints differed from the effect for older women ($z_s = 3.03$ and 1.73 , respectively; $p_s < .01$ and $.10$, respectively). Comparisons also revealed that the negative effect of a short stature on personal control for young adults differed significantly from the positive effect for middle-aged adults ($z = 3.07, p < .01$), who differed from older adults ($z = 1.89, p = .06$).

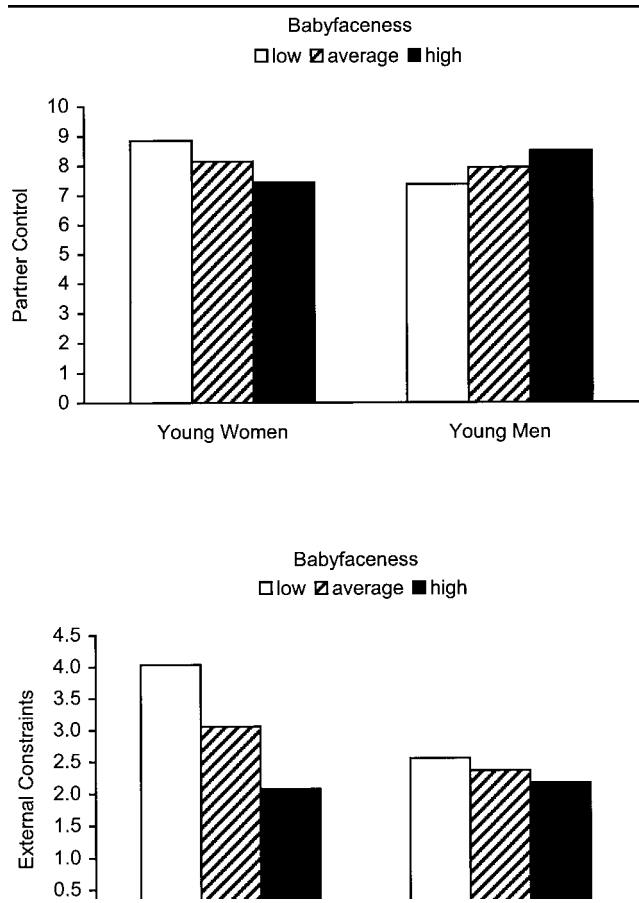


Figure 1 Young adults' perceived control over their partners and older adults' perceived external constraints as a function of babyfacedness and gender.

NOTE: Low, average, and high values represent one standard deviation below the mean, the mean, and one standard deviation above the mean for each gender, respectively (cf., Aiken & West, 1991; Cohen & Cohen, 1983).

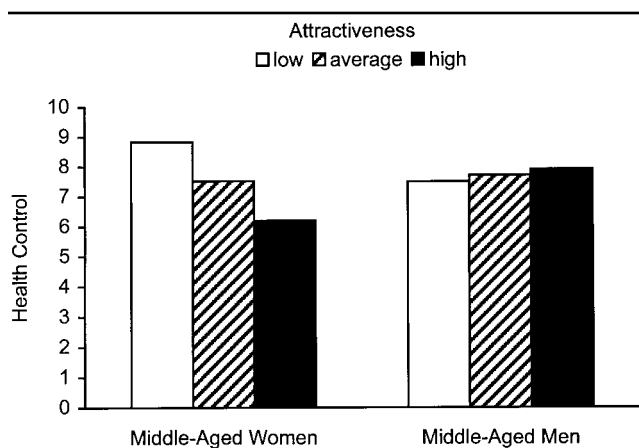


Figure 2 Middle-aged adults' perceived control over their health as a function of attractiveness and gender.

NOTE: Low, average, and high values represent one standard deviation below the mean, the mean, and one standard deviation above the mean for each gender, respectively (cf., Aiken & West, 1991; Cohen & Cohen, 1983).

SES, Health, and Sex Effects

Consistent with past research (e.g., Lachman & Weaver, 1998a; Rodin, 1986), SES and health were related to control beliefs in middle-aged and older adults (see Table 4). Lower SES middle-aged and older adults perceived more external constraints, and lower SES older adults also perceived less general personal control. Middle-aged adults with more health problems perceived more constraints, less general personal control, work control, finance control, and health control, whereas older adults with more health problems perceived less control over health. Sex differences in control beliefs were consistent with past research (e.g., Lachman & Weaver, 1998b) only for older adults. Older women perceived more constraints and less personal control than did older men. In contrast, young women and middle-aged women perceived fewer constraints than did men, although the finding for young adults was qualified by several interactions. Middle-aged women also perceived more control over work than did middle-aged men.

DISCUSSION

The findings revealed that one's physical appearance is related to one's control beliefs. Moreover, the effects of appearance were at least equal to, if not greater than, the effects of more established predictors such as SES and health. As expected, the effects varied with age and sex and did not always conform to the straightforward prediction that individuals stigmatized by their appearance will perceive more constraints and less control. Rather, many of the results supported the hypothesis that individuals may overcompensate for negative expectations based on their physical appearance in ways that lead to perceptions of greater control.

As predicted, babyfacedness was related to diminished control beliefs in young and middle adulthood and to enhanced beliefs in older adulthood. More babyfaced middle-aged adults reported more constraints, and more babyfaced young women reported less control over their partners, a finding consistent with evidence that more dominant men prefer to date babyfaced women, who appear submissive (Hadden & Brownlow, 1991). More babyfaced middle-aged adults also felt less control over their work and finances, a finding consistent with evidence that babyfaced adults are disadvantaged in the occupational domain (Collins & Zebrowitz, 1995; Copley & Brownlow, 1995; Zebrowitz, Tenenbaum, & Goldstein, 1991). On the other hand, more babyfaced older adults reported fewer external constraints, consistent with the suggestion that looking young may become an advantage in older adulthood rather than a hindrance. This finding was strongest for

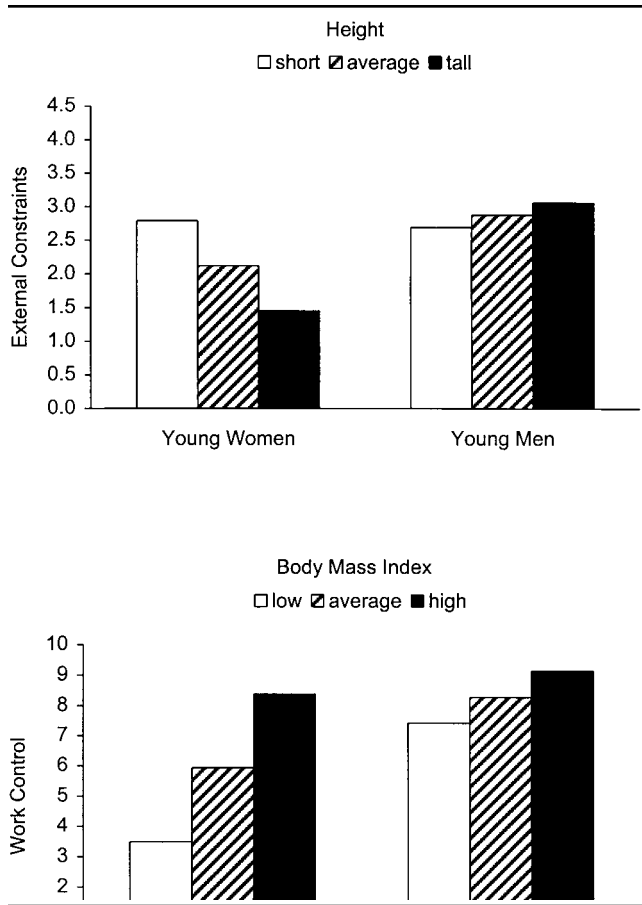


Figure 3 Young adults' perceived external constraints as a function of height and gender and perceived control over work as a function of Body Mass Index (BMI) and gender.

SOURCE: Aiken and West (1991), Cohen and Cohen (1983).
 NOTE: High, average, and low values of height represent one standard deviation above the mean and one standard deviation below the mean for each gender, respectively.

women, which is not surprising given that a youthful appearance has a more positive effect on the social outcomes of women (e.g., Buss, 1989; Deutsch, Zelenki, & Clark, 1986).

In one instance, babyfacedness in young adulthood was associated with control beliefs suggestive of overcompensation. More babyfaced young men perceived more rather than less control over their partners. This finding is consistent with other recent evidence that babyfaced young men may overcompensate for the babyface stereotype with disconfirming behavior (e.g., Zebrowitz, Collins, & Dutta, 1998; Zebrowitz, Andreoletti, et al., 1998). It thus appears that young babyfaced men attempt to refute the stereotype that they are submissive and weak, a motivation that also may cause them to exert more rather than less control over their partners.

Only among middle-aged adults was there a significant effect of attractiveness on control beliefs. Those who were less attractive reported less control over work,

which supports the prediction that the negative social consequences of an unattractive appearance would lead to lower control beliefs. In contrast, less attractive middle-aged women reported more control over their health. These findings are consistent with evidence that unattractive individuals may compensate for the attractiveness halo with greater effort to control their social outcomes (Miller & Rudiger, 1997). Other effects of attractiveness also may contribute to its specific effects on health control. In particular, the finding that less attractive women report more health control may reflect a tendency for people, including physicians, to perceive more attractive individuals as healthier, with the result that symptoms reported by more attractive patients are taken less seriously (e.g., Hadjistavropoulos, Ross, & von Baeyer, 1990). This disadvantage of attractiveness may be particularly problematic for women, whose symptoms tend to be taken less seriously than men's to begin with (cf. Frank & Taylor, 1993).

Shorter young adults of both sexes perceived less general, personal control and shorter women perceived more external constraints. Although the lack of effect of short stature on perceived constraints for men was unanticipated, its effect on men's perceived control reveals that these disadvantages do take a toll. Only in middle age, where shorter adults perceived more personal control, was there evidence of overcompensation for the negative expectancies associated with being short. A short stature may be more disadvantageous when one's age or gender also works against personal control, which could explain the greater effect on perceived constraints for young women and the inability of young adults to compensate with greater personal control. This explanation is consistent with evidence that short stature may be more problematic when coupled with a babyish facial appearance, which also increases constraints (Zebrowitz, Andreoletti, et al., 1998).

Most of the effects of BMI were consistent with the suggestion that overweight individuals may compensate for their appearance in ways that lead to feelings of greater control. In particular, young adults with higher BMIs perceived more personal control than did their thinner peers. Young women with higher BMIs also perceived more control over their work. In older adulthood, heavier women perceived more control over their health. These findings may be explained by a tendency for overweight individuals, particularly women, to compensate for weight stereotypes with greater efforts to control their social outcomes (cf. Miller & Myers, 1998). The lack of evidence for compensation among men is consistent with research suggesting that weight concerns are less salient for men than for women (Rodin, Silberstein, & Striegel-Moore, 1984), and that it takes higher levels of overweight for men to feel stigmatized

than it does for women (Fallon & Rozin, 1985). Although compensatory efforts may lead overweight individuals to perceive more control, it is somewhat surprising that young overweight adults also perceived fewer constraints. We have no explanation for this unexpected finding and we recommend that it be interpreted with caution.⁴

The cross-sectional, correlational design used in this study leaves open important questions for future research. Although most of the appearance variables examined here have been found to be stable across the life span, it is certainly possible that control beliefs could influence one's physical appearance as well as vice versa. Indeed, there is some evidence to suggest that one's personality can alter one's physical appearance over the life course (Zebrowitz, Collins, & Dutta, 1998). Furthermore, it would be useful to examine other personality variables in relation to control beliefs and physical appearance. Longitudinal data is needed to assess the causal direction of the effects reported here and also to confirm the changes in the relationship between appearance and control beliefs across the life span. In addition, experimental data is needed to directly assess compensatory behaviors in response to external constraints among those who are babyfaced, unattractive, overweight, or short to determine whether such behaviors do in fact increase feelings of personal control.

Although several interesting questions will require additional research, the present study is the first to examine the independent effects of various stigmatizing appearance qualities on general and specific control beliefs at different ages; as such, it makes several important contributions to the literature. First, we found that being babyfaced or short was independently associated with greater perceptions of external constraints in young and middle adulthood, whereas being unattractive or overweight was not. Second, we found that being babyfaced, unattractive, or short was independently associated with diminished perceptions of both general and domain-specific control beliefs in young and middle adulthood, whereas being overweight was not. Third, we found that stigmatized appearance qualities were not always associated with lower control beliefs. Indeed, those who were less attractive, more babyfaced, overweight, or short sometimes perceived more rather than less control than their more favored peers, suggesting that individuals whose appearance creates social barriers may compensate with greater efforts to control their social environment. Fourth, several interactions between appearance and sex revealed that, in general, appearance was more likely to have an effect on women's control beliefs than on men's.

Finally, we found that the relationship between appearance and control beliefs varied across the life span. One notable age difference was that high babyfacedness was associated with higher perceived external constraints at younger ages but with lower perceived constraints in older adulthood. Another interesting age difference concerned the specific domains of control that were affected by appearance. For young adults, appearance had effects on work and partner control but not on finance or health control, perhaps because the former domains are more salient in young adulthood when people are in the early stages of careers and relationships. For middle-aged adults, appearance had effects on work, finance, and health control but not partner control, perhaps because people at this age tend to be in stable relationships where appearance is less significant. For older adults, appearance had no effect on the domain-specific control beliefs. Because many people at this age are in stable relationships with partners, employers, and doctors, appearance may become less important than factors such as SES and health.

In conclusion, the present study revealed that the specific effects on control beliefs of being babyfaced, unattractive, short, or overweight vary with age and sex. Furthermore, the size of these effects was comparable to those of more established predictors such as SES and health. Finally, physical appearance was more often related to perceived external constraints than to personal control. This finding may account for the inconsistent effects of appearance in past research that did not differentiate between these two types of control beliefs. Continued research to tease apart the complex relationship between various stigmatizing appearance qualities and control beliefs is important for understanding and improving the lives of those who are stigmatized by their appearance.

NOTES

1. Another argument in favor of perceived versus actual control is that perceived control has a stronger influence on emotions and behavior than does actual control and therefore is a better predictor of functioning (Langer, 1979; Peterson & Stunkard, 1989; Rodin, 1990).

2. Although analyses were performed separately for each age group, given the broad age ranges, there was some age variability within each group. To ensure that our results were not due to age differences within groups, additional analyses were conducted that included age as a predictor variable. None of the appearance effects lost significance when age was included.

3. For middle-aged adults, as predicted, there was a tendency for attractiveness to be associated with fewer external constraints ($\beta = -.19$, $p = .10$), whereas, contrary to predictions, there was a tendency for attractiveness to be positively related to constraints for older adults ($\beta = .29$, $p = .07$). Comparisons of the regression coefficients across age revealed that the effect of attractiveness for young and middle-aged adults differed from the effect for older adults (z s = 1.70 and 2.45, respectively; p s = .09 and .02, respectively). Although compensatory efforts may lead less attractive individuals to perceive more control, it is

surprising that less attractive older adults perceived fewer constraints. One possible explanation is that attractive individuals may suffer the age-related decline in attractiveness more acutely than the less attractive. This could lead to a greater subjective experience of constraints in older adulthood among those who are more attractive. It also may be that, over the life course, less attractive individuals develop skills that reduce their experienced constraints by the time they reach old age. Both possibilities are plausible given that, although attractiveness declines with age, attractiveness relative to one's peers is stable across the life span (Zebrowitz, Olson, & Hoffman, 1993).

4. Because the direction of the Body Mass Index (BMI) effects on perceived constraints was unexpected, we tried to assess the reliability of the effects by replicating them in the Mid-Life in the United States (MIDUS) sample (Lachman & Weaver, 1998a), which included measures of BMI and height but not facial appearance. The effects did not replicate in the larger sample, although they did remain in the Boston sample even when the facial appearance variables were not included in the analysis.

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