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Discrimination Against Facially Stigmatized Applicants in Interviews: An Eye-Tracking and Face-to-Face Investigation

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Drawing from theory and research on perceived stigma (Pryor, Reeder, Yeadon, & Hesson-McInnis, 2004), attentional processes (Rinck & Becker, 2006), working memory (Baddeley & Hitch, 1974), and regulatory resources (Muraven & Baumeister, 2000), the authors examined discrimination against facially stigmatized applicants and the processes involved. In Study 1, 171 participants viewed a computer-mediated interview of an applicant who was facially stigmatized or not and who either did or did not acknowledge the stigma. The authors recorded participants' (a) time spent looking at the stigma (using eye tracker technology), (b) ratings of the applicant, (c) memory recall about the applicant, and (d) self-regulatory depletion. Results revealed that the participants with facially stigmatized applicants attended more to the cheek (i.e., where the stigma was placed), which led participants to recall fewer interview facts, which in turn led to lower applicant ratings. In addition, the participants with the stigmatized (vs. nonstigmatized) applicant depleted more regulatory resources. In Study 2, 38 managers conducted face-to-face interviews with either a facially stigmatized or nonstigmatized applicant, and then rated the applicant. Results revealed that managers who interviewed a facially stigmatized applicant (vs. a nonstigmatized applicant) rated the applicant lower, recalled less information about the interview, and depleted more self-regulatory resources.

Keywords: interviews, discrimination, stigma, eye tracking, self-regulation

The employment interview is one of the most widely used and researched methods for selecting employees (Campion, Palmer, & Campion, 1997; Dipboye, 1997; Huffcutt & Arthur, 1994). The purpose of an interview is to evaluate the quality of a candidate's responses to interview questions and ideally produce evaluations solely on a candidate's responses to questions (Dipboye, 1997, 2005). The employment interview, however, can be biased by ancillary factors such as applicants' perfume/cologne, dress, race, gender, socioeconomics, religion, physical imperfections, or disability (Baron, 1983; Dipboye & Colella, 2005; K. K. P. Johnson & Roach-Higgins, 1987). In the present research, we focused on one of these factors—facial stigmas—and examined discrimination against applicants who are facially stigmatized and the processes that are involved.

Face perception or how people process a face is an effortless, but highly developed skill that serves different communicative functions in social interaction, such as person identification and recognition (Li & Jain, 2005). Therefore, facial stigmas are highly discernible and salient for face processing. In fact, evidence suggests that facial disfigurements are even processed and recognized by newborns (Cohen, 1998; M. H. Johnson, Dziurawiec, Ellis, & Morton, 1991). In addition, face perception depends on distinctive brain areas that are not used for object or other stimuli perception (Li & Jain, 2005; Tsao, Moeller, & Freiwald, 2008). As such, facial disfigurements (e.g., scars, port-wine stains, or birthmarks) are particularly pernicious stigmas (Goffman, 1963; Hebl, Tickle, & Heatherton, 2000).

Almost no research, however, has examined discrimination in interviews as a function of facial stigmas, which is surprising given the importance of face perception in social interactions and the influence of physical appearance on interview and selection outcomes (Dipboye, 2005; Hosoda, Stone-Romero, & Coats, 2003; Strauss, Miles, & Levesque, 2001). In the present study, we draw from theory and research on stigma (Pryor, Reeder, Yeadon, & Hesson-McInnis, 2004), attentional processes (Rinck & Becker, 2006), working memory (Baddeley & Hitch, 1974), and regulatory resources (Muraven & Baumeister, 2000) and examine such discrimination across two studies. In Study 1, we measured the visual attention to facial stigmas (using eye tracker technology) in a computer-mediated interview context. In Study 2, we examined discrimination against facially stigmatized applicants in a face-to-face interview context using a sample of managers.

Facial Stigmas in the Interview

Reactions and Attention to Facial Stigmas

A stigma is an "attribute or characteristic that conveys a social identity that is devalued in a particular social context," which

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include "being the target of negative stereotypes, being rejected socially, being discriminated against, and being economically disadvantaged" (Crocker, Major, & Steele, 1998, p. 505). Research consistently shows that people have negative reactions toward stigmatized individuals (for reviews, see Crocker et al., 1998; Hebl et al., 2000). In his seminal book, Goffman (1963) documented the plight of people with facial stigmas, such as scars, port-wine stains, or birthmarks. Facial stigmas are particularly pernicious due to their aesthetic appearance and often unconcealability in social interactions. Using experimental methods, Blascovich, Mendes, Hunter, Lickel, and Kowai-Bell (2001) manipulated facial stigmas by applying a port-wine stain on confederates interacting with participants. Those who interacted with facially stigmatized (vs. nonstigmatized) partners experienced increased anxiety and cardiovascular activity. Thus, facial stigmas tend to be processed negatively by people. This research suggests facially stigmatized individuals are also likely to experience discrimination in the interview context. Thus, we hypothesized the following:

> *Hypothesis 1:* Facially stigmatized (vs. nonstigmatized) applicants will be rated lower on overall effectiveness.

In the present article, we examined processes that are involved in this discrimination, such as visual attention focused on the stigma. People attend to facial stigmas for a variety of reasons. First, people place greater weight and attend more readily to negative than positive stimuli (Fox, Russo, Bowles, & Dutton, 2001; Rinck & Becker, 2006; Smith, Cacioppo, Larsen, & Chartrand, 2003). For example, people are more likely to look at and focus on spiders, snakes, and unhappy faces than rabbits, butterflies, and happy faces (Fox et al., 2001; Hermans, Vansteenwegen, & Elen, 1999; Mogg et al., 2000; Rinck & Becker, 2006). Second, people may attend to facial stigmas because they are novel. Coined as the "novel stimulus" hypothesis, people stare and try to interpret stigmas, subsequently making them less novel (Langer, Fiske, Taylor, & Chanowitz, 1976; Thompson & Kent, 2001). Third, face perception research suggests that features that are unexpected on a face, such as a scar or port-wine stain, attract visual attention and help in face recognition (Li & Jain, 2005; Tsao et al., 2008). In summary, research converges in suggesting that people allocate attention to stigmas on the face because they are novel, perceived negatively, and help in face recognition. Thus, we hypothesized that:

> *Hypothesis 2:* More visual attention will be given to the stigma location on a facially stigmatized applicant than an applicant without a stigma.

A subsequent process that is likely involved in discrimination against facially stigmatized applicants is the impairment of memory or recall of what was said during the interview. According to Baddeley and Hitch's model (Baddeley & Hitch, 1974), working memory is the ability to direct and control attention, which evidence suggests is finite (Schmeichel, 2007; Shomstein & Yantis, 2004, 2006). That is, the operation of directing attention (i.e., working memory) can be affected by simultaneous cognitive activity. Past studies of divided attention effects have found that performing a concurrent activity at the encoding stage of memory leads to large decrements in later recall (Baddeley, Lewis, Eldridge, & Thomson, 1984).

According to neuroscience research, this occurs because directing visual attention to stimuli also reduces the capacity to attend to aural stimuli simultaneously (Shomstein & Yantis, 2004, 2006). Divided attention produces an immediate effect on memory—people have less attentional capacity if they are engaging on another task. Thus, we believe that the more cognitive resources directed toward the stigma, the less that will be available for the applicant's performance in the interview (i.e., memory of what is said). More formally, we predicted that:

> *Hypothesis 3:* There will be less memory (i.e., recall) of what was said in the interview with a facially stigmatized (vs. nonstigmatized) applicant.

> *Hypothesis 4:* Visual attention to a facial stigma will mediate the relationship between stigma condition and memory (i.e., recall) of what was said in the interview.

A subsequent process that is likely involved in discrimination against facially stigmatized applicants is the link between memory for interview content and ratings of the applicant. One of the main goals of the interview is to gain information about the applicant, and therefore, processing and recalling information about the applicant is imperative in the evaluation process (Dipboye, 2005; Macan & Dipboye, 1994; Posthuma, Morgeson, & Campion, 2002). However, by attending more to the stigma, the interviewer might miss some important information from what the applicant said during the interview, which could dramatically influence the ratings of the applicant. Thus we hypothesized that:

> *Hypothesis 5:* Memory will mediate the relationship between visual attention and the overall ratings of the applicant.

In addition to examining processes involved in discrimination against facially stigmatized applicants, we examined how stigmas influence the depletion of self-regulatory resources. Self-regulation "is the exertion of control over the self and occurs when a person attempts to change the way he or she would otherwise think, feel, or behave and involves overriding or inhibiting competing urges, behaviors, or desires" (Muraven & Baumeister, 2000, p. 248). Self-regulation is also a limited resource (Muraven & Baumeister, 2000); hence, it may be depleted if interviewers are focusing their attention on stigmas rather than on interview content. That is, stigma models (Pryor et al., 2004; Weiner, Perry, & Magnusson, 1988) and visual attention models (Mogg et al., 2000; Rinck & Becker, 2006) suggest that in the absence of a stigma, an interviewer does not have to regulate focus away from a stigma, because it is not there to initially attract attention. By regulating visual attention, interviewers may undermine their later performance of a regulatory task (see Baumeister, Bratslavsky, Muraven, & Tice, 1998; Muraven & Baumeister, 2000). Thus, we hypothesized:

> *Hypothesis 6:* There will be more depletion of self-regulatory resources on a subsequent task with a facially stigmatized (vs. nonstigmatized) applicant.

Acknowledgment of Stigmas

We also examined a potential remediation strategy for facially stigmatized job applicants. Past research has shown that stigmatized individuals can proactively alter the negative reactions they receive from interactants (Hebl & Kleck, 2002; Singletary & Hebl, 2009). In fact, Goffman (1963) noted that almost all stigmatized individuals tend to engage in some form of stigma management. One such strategy involves disclosing or acknowledging (i.e., directly addressing one's stigma during an interaction). Acknowledgment may be effective because it reduces the attributions and preoccupation that one may have about the stigma.

Acknowledgment may be particularly effective because social norms prevent interactants from introducing the topic; thus, the information that stigmatized individuals provide often releases interactants from continuing to think about its origin, severity, controllability, contagiousness, and other aspects (Davis, 1961; Hebl & Kleck, 2002; Singletary & Hebl, 2009). According to Davis (1961), acknowledgment may draw more of a focus on the stigma initially, but that focus becomes substantially reduced by bringing it to the surface and allowing interactants to get beyond it. Thus, we hypothesized that:

> *Hypothesis 7:* When an applicant acknowledges (vs. does not acknowledge) a stigma, less visual attention will be focused on the stigma.

Study 1

Method

Participants. One-hundred eighty undergraduate students participated in exchange for experimental credit. Because the eye tracker did not work properly for nine participants, the final sample consisted of 171 (60 male and 111 female) participants. Eighty-one of the participants were Caucasian, 45 Asian, 21 Hispanic, 15 Black, and 9 reported as "other." The average age of the participants was 19.5 ($SD = 1.4$).

Stimuli. To use eye-tracking technology, still images of hypothetical applicants' faces from the MIT-CBCL face recognition database[1] were used (Weyrauch, Huang, Heisele, & Blanz, 2004). Images had a resolution of 896 × 592, and discrepancies in luminance and contrast were adjusted and the images cropped to achieve a consistent face size and position. Each image was scaled to the same size (18 × 18 cm) and displayed on a computer monitor. Participants' eyes were positioned 16 in. in front of the monitor, and the images were subtended at about 7–8° horizontally and 10–11° vertically, which is similar to the visual angle of normal conversations (Henderson, Falk, Minut, Dyer, & Mahadevan, 2001; Henderson, Williams, & Falk, 2005).

Apparatus. The ISCAN RK726/RK520 HighRes/CR tracker was used with a Polhemus FASTRACK head tracker, head-mounted optics, and a sampling rate of 60 Hz[2] To create our applicants, one picture of a man and one of a woman with similar facial features and dimension were used. These two pictures were equally rated as "average" on attractiveness using a pilot study sample that did not participate in the experiment. Using Adobe Photoshop, a stigma was placed on the right cheek of applicants' faces. To control for idiosyncrasies of different types of facial stigmas, two types of stigmas were used: a port-wine stain and a scar. Therefore, our applicants had a facial stigma on their right cheek (male with a port-wine stain or a scar and female with a port-wine stain or a scar). For the control group, pictures of the male and female applicants without any stigma were included. Thus, there were a total of six pictures (see Figures 1, top and bottom panels, for examples), but each participant viewed only one.

Design and procedure. A 2 (acknowledge: yes or no) × 2 (target gender: male or female) between-subject design with two additional control cells was used: no-stigma male and no-stigma female. Although hypotheses about the gender of the hypothetical applicant were not developed, gender was manipulated for exploratory reasons and to test the generalizability of our findings across gender.

Experimental sessions lasted 30 min. The experimenter began by informing participants they would be evaluating a computer-mediated interview, in which they would listen to an interview while viewing a computer screen picture of an ostensible MBA graduate student applying for a job in marketing. Participants also learned that they would be asked to recall information about the applicant.

After signing the consent form, participants were positioned in front of a computer and learned that their visual attention would be tracked and recorded throughout the study, thereby inducing potential social pressure to not look at stigmatizing features. The experimenter placed and calibrated the head-mounted optics on the participants and then displayed one of the six pictures to the participants as the interview began. In half the stigma conditions, applicants acknowledged their stigma in the first minute of the interview. This was manipulated by having the applicant describe a challenge they had faced. In the stigma condition, the applicant acknowledged, "I have had this scar on my face since birth, but I don't let it get in the way . . ." For the nonstigmatized and nonacknowledgment conditions, this acknowledgment was not included.

The interview lasted 8 min, and the participants' average eye-movement was recorded for every 30 s of the 8-min interview; thus, there was an overall visual attention score for each participants and one for every 16 time points. As a measure of self-regulation depletion, participants completed the color Stroop task (MacLeod, 1991). Participants began by performing one block of

[1] All images were taken by the same camera under tightly controlled conditions of illumination and viewpoint. Credit is hereby given to the Massachusetts Institute of Technology and to the Center for Biological and Computational Learning for providing the database of facial images.

[2] The working principles are the following: Imperceptible to the participant, the tracker shines an infrared light on one of the eyes of the participant, which then takes a video image of the eye. Part of this is reflected by the cornea, and another part is reflected through the pupil by the retina, which allows taking the vector between the pupil center and the point on the cornea closest to the camera. This vector corresponds to a specific position of the eye when it fixates at a particular position on the screen. As the eye orients to other positions, the vector also changes, allowing computing visual point of regard, such as the eyes, mouth, nose, and a stigma (e.g., birthmark). The head-mounted imaging system moves when the participant's head moves; therefore, the head does not have to be immobilized during operation.

25 trials as practice and then performed two blocks of 25 trials each that were used as the depletion measure.

After completing the color Stroop task, participants recalled information about the applicants by answering 21 multiple-choice questions about the interview. The participants then evaluated the applicant, completed manipulation checks measures, and were debriefed.

Measures.

Visual attention. To assess eye-movement data, a measure of the percentage of time looking at the cheek was created (the area where the stigma was placed; see Figure 2). The average percentage of time spent gazing at the cheek was 7.5% ($SD = 0.05$). This measure had an alpha coefficient of .84.

Self-regulatory depletion. For this measure, participants identified a color word (e.g., the word *green*) by clicking on one of four colors words (*blue*, *red*, *yellow*, or*green*) using a computer keyboard as the word appeared on the computer screen. For example, the word *green* was written in blue and the participants clicked on the green rather than on blue. Participants were instructed to respond as quickly as possible.[3] Following past research (MacLeod, 1991), the incongruent match time was used as the depletion scores. Incongruent matches occur when the word and color do not match. The depletion score was the total amount of incongruent match time over the 50 nonpractice trials; the average scores were 1.32 s for the incongruent color-name trials ($SD = 0.21$); the alpha coefficient was .81.

Memory. Participants' memory was tested using a 21-item multiple-choice test (with seven answer options) on facts about the applicant, based on what he or she said during the interview (i.e., his or her name applicant, degrees, alma mater, work experiences). The number of correct items were summed and used as the measure of memory. The test had an alpha coefficient of .72.

Figure 1. Male applicant, no stigma (top panel); male applicant with stigma scar (bottom panel).

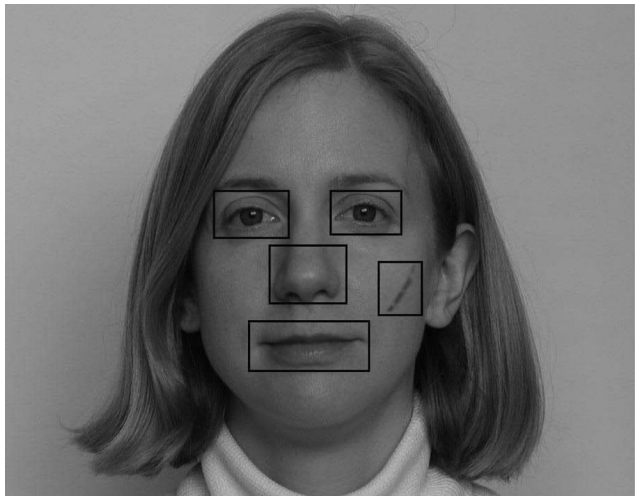

Figure 2. Points of interest on the female face with a stigma (e.g., scar): eyes, nose, mouth, and cheek.

Applicant rating. Using a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), participants responded to nine items constructed specifically for this study. Example items included "this applicant has strong qualifications," "this applicant has impressive experiences," and "I am not impressed by this applicant" (reverse scored). A principal-component factor analysis conducted on these items revealed one factor, and the coefficient alpha for the scale was .87.

Manipulation checks. Participants reported whether or not the applicant had a scar (or port-wine stain) on the face and whether the applicant acknowledged the scar using a yes or no response for both questions. Using a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), participants in the stigma condition reported how negative they perceived the stigma to be by completing three items: "I had a negative reaction to the scar (or port-wine stain) on the applicant's face," "I was disgusted by the scar (or port-wine stain) on the applicant's face," and "the scar (or port-wine stain) on the applicant's face was repulsive." The coefficient alpha for the three items was .78.

Participants also completed one additional set of items. Using a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), participants completed three items: "I attempted to not look at certain features of the face," "I was distracted by

[3] The cognitive mechanism involved in this task is called *directed attention* —one must manage their attention and inhibit or stop one response in order to say or do something else (MacLeod, 1991). The Stroop task provides insight into cognitive effects that are experienced as a result of self-regulatory depletion. The idea is that self-regulation is a limited resource that becomes fatigued. After engaging in an act of self-regulation, such as controlling visual attention during an interview with a stigmatized applicant, subsequent performance on self-regulatory tasks (e.g., color Stroop task) is impaired as a result of the initial self-regulatory behavior.

features of the face," and "I tried controlling my gaze during the interview." These items were intended to ascertain whether participants generally felt compelled to regulate their visual attention during the interview. The coefficient alpha for the three items was .81.

Results

Manipulation checks. All 112 participants who viewed an applicant with a stigma correctly identified that the applicant had a scar (or port-wine stain) on his or her face. A total of 55 of 56 participants in the acknowledgment condition correctly identified that the applicant acknowledged the facial stigma. Thus, the manipulations were successful. In addition, participants in the stigma condition rated the stigma to be highly negative—the average score for the three items on how negative they perceived the stigma to be was 4.57 ($SD = 0.74$) on a 5-point Likert scale.

An analysis of variance (ANOVA) with stigma (yes or no) as the independent variable and the measure of visual attention regulation as the dependent variable revealed a significant effect of applicant stigma on visual attention regulation, $F(1, 168) = 58.54$, $p < .05$, $\eta^2 = .26$, such that participants who viewed a facially stigmatized applicant reported more visual attention regulation ($M = 3.79$, $SD = 0.89$) than a nonstigmatized applicant ($M = 1.17$, $SD = 0.39$), suggesting that participants with a facially stigmatized applicant did try to control their visual attention.

Table 1 presents the means, standard deviations, and correlations of the independent variables (i.e., applicant gender, applicant stigma, and acknowledgment) and the dependent variables (i.e., visual attention to the cheek, self-regulatory depletion, memory of the interview, and applicant ratings). We found no applicant gender differences or differences between the type of stigma (e.g., scar or port-wine stain); thus, we collapsed our analyses across applicant gender and across stigma type. Table 2 shows the means and standard deviations for the three conditions and the four dependent variables.

Hypothesis 1. A t test with stigma (yes or no) as the independent variable and the applicant ratings as the dependent variable revealed a significant effect of applicant stigma on applicant ratings, $t(169) = 2.45$, $p < .05$, $\eta^2 = .03$, such that participants who viewed a facially stigmatized applicant rated the applicant lower ($M = 3.69$, $SD = 0.60$) than a nonstigmatized applicant ($M = 4.11$, $SD = 0.63$), supporting Hypothesis 1.

Table 2
Means and (Standard Deviations) for the Three Conditions and the Dependent Variables

Variable	Acknowledge stigma	No acknowledge stigma	No acknowledge no stigma
Applicant rating	3.67 (0.59)	3.72 (0.61)	4.11 (0.63)
Visual attention	0.09 (0.05)	0.10 (0.05)	0.02 (0.02)
Memory	8.33 (2.7)	8.16 (2.6)	11.06 (2.2)
Self-regulatory depletion	1.38 (0.19)	1.36 (0.19)	1.23 (0.21)

Note. Visual attention is for the cheek. $N = 56$ for acknowledge stigma; $N = 56$ for no acknowledge stigma; $N = 59$ for no acknowledge no stigma.

Hypothesis 2. A t test with stigma (yes or no) as the independent variable and the visual attention to the stigma location (i.e., the cheek) as the dependent variable revealed a significant main effect of applicant stigma on visual attention to the stigma location (i.e., the cheek), $t(169) = 10.97$, $p < .05$, $\eta^2 = .42$, such that participants visually attended more to the cheek region of a facially stigmatized applicant ($M = 0.10$, $SD = 0.04$) than the cheek of a nonstigmatized applicant ($M = 0.02$, $SD = 0.02$), supporting Hypothesis 2.

Hypothesis 3. A t test with stigma (yes or no) as the independent variable and participant memory as the dependent variable revealed a significant effect of applicant stigma on participant memory, $t(169) = 7.56$, $p < .05$, $\eta^2 = .23$, such that participants who viewed a facially stigmatized applicant recalled less interview information ($M = 8.25$, $SD = 2.6$) than participants who viewed a nonstigmatized applicant ($M = 11.06$, $SD = 2.2$), supporting Hypothesis 3.

Hypothesis 4. We examined the mediation model that included stigma → visual attention → memory (Hypothesis 4) using Preacher and Hayes' (2008) tests of the indirect effects. In this mediation test, the relationship between the predictor and the criterion measures are tested with and without the addition of the mediator, and the indirect effect tests address whether the total effect of the predictor on the criterion is significantly reduced with

Table 1
Means, Standard Deviations, and Correlations of Study 1 Variables by Stigma Condition

Variable	*M*	*SD*	1	2	3	4	5	6	7
1. Gender of applicant	—	—	—	—	—	.07	.08	.02	.05
2. Acknowledge	—	—	—	—	—	—	—	—	—
3. Type of stigma	—	—	—	—	—	—	—	—	—
4. Visual attention (cheek)	0.07	0.05	.03	.09	.07	—	.09	.02	.01
5. Memory	9.3	2.6	.01	.03	−.10	−.22*	—	.34*	.03
6. Applicant rating	3.9	0.62	.05	.05	.01	−.16	.21*	—	.14
7. Self-regulatory depletion	1.3	0.21	.09	.08	.07	.26*	−.19	−.14	—

Note. Correlations in the lower left corner are for the stigma condition, and correlations in the upper right corner are for the nonstigma condition. Means and standard deviations are for both the stigma and the nonstigma conditions. Correlations between manipulated variables are not presented. $N = 110$ for type of stigma; $N = 171$ for all other variables. Type of stigma was coded 1 = scar, 2 = stain. Applicant gender was coded male = 1, female = 2. Stigma was coded 1 = no, 2 = yes. Acknowledgment was coded 1 = no, 2 = yes. Dashes indicate that there are no data/is no value.
* $p < .05$.

the addition of the proposed mediator to the model. We used he Sobel test and bootstrapped formula of Preacher and Hayes (2008) to test the indirect effects with a 95% confidence interval.

The results for Hypothesis 4 showed that stigma had a significant, positive relationship with visual attention to the cheek ($\beta = .65$, $p < .05$), and visual attention had a significant, negative relationship with memory of the interview ($\beta = -.18$, $p < .05$). The direct effect of stigma to memory ($\beta = -.48$, $p < .05$) was reduced with the mediator in the model ($\beta = -.36$, $p < .05$), and this reduction (indirect effect) was significant ($Z = -2.05$, $p < .05$), with a statistically significant 95% confidence interval [−.25, −.001]. The results suggest that visual attention partially mediated the relationship between stigma and memory, thereby partially supporting Hypothesis 4.

Hypothesis 5. Using Preacher and Hayes' (2008) tests of the indirect effects, the results for Hypothesis 5 (i.e., visual attention → memory → rating) showed that visual attention had a significant, negative relationship with memory ($\beta = -.42$, $p < .05$), and memory had a significant, positive relationship with the applicant ratings ($\beta = .27$, $p < .05$). The direct effect of visual attention to the applicant ratings ($\beta = -.17$, $p < .05$) was reduced with the mediator in the model ($\beta = -.06$, $p > .05$), and this reduction was significant ($Z = -2.94$, $p < .05$), with a statistically significant 95% confidence interval [9, −.05], thereby supporting Hypothesis 5.

Hypotheses 4 and 5 involved a series of related mediation models (i.e., Hypothesis 4: applicant stigma → visual attention → memory and Hypothesis 5: visual attention → memory → applicant rating applicant rating). As such, we used path analysis via AMOS 6 (Arbuckle, 2005) to test a full model that simultaneously includes the mediators. Path analysis provides several advantages over hierarchical regression approaches with regard to the testing of mediation, such as testing complex models that involve two or more mediating variables (Cheung & Lau, 2008).

To determine the adequacy of model fit, we used five fit indices: (a) the χ^2 and degrees of freedom, (b) the comparative fit index (CFI), (c) the incremental index of fit (IFI), (d) the standardized root-mean-square residual (SRMR), and (e) the root-mean-square error of approximation (RMSEA). It is suggested that good fit indices for CFI and IFI are greater than .90, and for SRMR and RMSEA, less than .08 (Byrne, 2001; Steiger, 1990; Vandenberg & Lance, 2000). We first tested our hypothesized model, specifying the role of both mediators simultaneously (i.e., applicant stigma → visual attention → memory → applicant rating). The fit indices for the hypothesized mediation model were mixed, $\chi^2(3, N = 171) = 17.33$, $p < .05$; CFI = .90; IFI = .91; SRMR = .08; RMSEA = .16. The RMSEA and chi-square values indicated poor fit, and the other fit indices indicated an adequate fit. A possible reason for this discrepancy is that RMSEA and chi-square are affected by the sample size and degrees of freedom (Chen, Curran, Bollen, Kirby, & Paxton, 2008; Hu & Bentler, 1995; Preacher, Cai, & MacCallum, 2007). Therefore, it is recommended to not rely only on one fit measure, but to examine other goodness-of-fit measures to inform model fit (Barrett, 2007; Chen et al., 2008). All of the paths were significant and suggested that participants who viewed an applicant with a stigma attended more to the stigma area (i.e., the cheek) than the control group ($\beta = .64$, $p < .05$), visual attention was negatively related to memory of the interview ($\beta = -.18$, $p < .05$), and memory of the interview was positively related to the overall rating of the applicant ($\beta = .30$, $p < .05$). The variables in this model explained 9% of the variance in the applicant ratings.

Following recommendations for mediation (James, Mulaik, & Brett, 2006; Mathieu & Taylor, 2006), we tested three alternative models, which included the partial mediation models and the full model. The first partial mediation model (Model 2) was identical to the hypothesized model except for the addition of a direct effect path from stigma to memory. As shown in Table 3, the partial mediation model did demonstrate a better fit, $\chi^2(2, N = 171) = 0.64$, $p > .05$; CFI = .99; IFI = .99; SRMR = .02; RMSEA = .001. In addition, the indirect paths remained significant, and the direct effect from stigma to memory was significant ($\beta = -.36$, $p < .05$). The variables in this model explained 9% of the variance in the applicant ratings, and the additional path did provide a better

Table 3
Mediation Model (Study 1): Comparisons and Path Coefficient of Structural Equation Models

Variable	Hypothesized model	Model 2	Model 3	Model 4	Model 5
Applicant stigma → visual attention	.64*	.64*	.64*	.64*	.64*
Visual attention → memory	−.42*	−.18*	−.42*	−.42*	−.18*
Memory → applicant rating	.30*	.30*	.27*	.27*	.27*
Applicant stigma → memory		−.36*			−.36*
Applicant stigma → applicant rating			−.06		−.05
Visual attention → applicant rating				−.06	
χ^2	17.33*	0.64	16.89*	16.77*	0.21
df	3	2	2	2	1
CFI	.90	.99	.89	.89	.99
IFI	.91	.99	.88	.90	.99
SRMR	.076	.020	.070	.070	.008
RMSEA	.16	.001	.21	.21	.001
Variance explained in applicant rating	9%	9%	8%	9%	9%

Note. $N = 171$. CFI = comparative fit index; IFI = incremental fit index; SRMR = standardized root-mean-square residual; RMSEA = root-mean-square error of approximation.
* $p < .05$.

fit to the data than the hypothesized model: $\chi^2_{diff}(1, N = 171) = 16.69$, $p < .05$.

The second partial mediation model (Model 3) was identical to the hypothesized model except for the addition of a direct effect path from stigma to the overall rating of the applicant. As shown in Table 3, although all indirect paths remained significant, the partial mediation model did not demonstrate adequate fit, and the direct effect from stigma to the overall rating of the applicant was not significant. Model 4 was the third partial mediation model in which a direct path from visual attention to applicant rating was added to the hypothesized model. The overall fit indices were inadequate, suggesting a lack of fit as shown in Table 3. Model 4 explained 9% of the variance in the applicant ratings.

Reported as Model 5 in Table 3, we examined the full model with a direct effect path from stigma to the overall rating of the applicant and an additional path from stigma to memory. As is shown, the overall fit indices were adequate, suggesting a good fit, $\chi^2(1, N = 171) = 0.21$, $p > .05$; CFI = .99; IFI = .99; SRMR = .008; RMSEA = .001. The additional paths did provide a better fit to the data than the hypothesized model, $\chi^2_{diff}(2, N = 171) = 17.12$, $p < .05$; the variables in this model explained 9% of the variance in the applicant ratings. Comparing Model 2 and Model 5, the additional path did not provide a better fit of the data, $\chi^2_{diff}(1, N = 171) = 0.43$, $p > .05$. In addition, the fit indices were very similar; therefore, the rule of parsimony suggests that Model 2 (i.e., the partial mediation model) is the preferred model (James et al., 2006). Collectively, the results show partial support for Hypotheses 4 and 5 (see Figure 3).

Hypothesis 6. To test Hypothesis 6, we conducted an analysis of covariance (ANCOVA), with stigma condition (yes or no) as the independent variable, incongruent match time on the color Stroop task (i.e., self-regulatory depletion) as the dependent variable, and the congruent color Stroop time as the covariate. The results showed a significant effect of stigma, $F(1, 168) = 43.09$, $p < .05$, $\eta^2 = .20$. Participants with a facially stigmatized applicant showed more depletion ($M = 1.35$, $SD = 0.19$) than participants who viewed a nonstigmatized applicant ($M = 1.23$, $SD = 0.21$).

An additional test we examined was to use the manipulation check measure of participants' regulation of visual attention in a mediation model, with stigma condition as the predictor, the incongruent Stroop task time (i.e., self-regulatory depletion) as the dependent variable, and the congruent Stroop task time as a control variable. Following recommendations for mediation (James et al., 2006; Mathieu & Taylor, 2006), we tested for the indirect model and the full model. In the first model (i.e., stigma → regulation of visual attention → incongruent time), the paths from stigma to regulation of visual attention ($\beta = .51$, $p < .05$) and regulation of visual attention to the incongruent time ($\beta = .24$, $p < .05$) were significant, but the model showed poor fit, $\chi^2(3, N = 171) = 23.57$, $p < .05$; CFI = .89; IFI = .89; SRMR = .062; RMSEA = .20.

In the full model, an additional path from stigma to the incongruent time was added. The full model showed adequate fit, $\chi^2(2, N = 171) = 1.33$, $p > .05$; CFI = .99; IFI = .99; SRMR = .024; RMSEA = .001. The paths from stigma to regulation of visual attention ($\beta = .51$, $p < .05$) and stigma to the incongruent time ($\beta = .28$, $p < .05$) were significant. Although the path from regulation of visual attention was not significant ($\beta = .09$, $p > .05$), the indirect effect of the independent variable to the dependent variable through the mediator was significant ($Z = 2.37$, $p < .05$) (Preacher & Hayes, 2008). This full model explained 59% of the variance in the incongruent time. Thus, the measure of visual attention regulation partially mediated the relationship between stigma and self-regulatory depletion, suggesting that the participants with a stigmatized applicant did to some extent regulate their visual attention, which was related to the depletion of self-regulation.

Hypothesis 7. Hypothesis 7 stated that when an applicant acknowledges a stigma, interviewers will visually attend less to a facial stigma than when an applicant does not acknowledge a stigma. An ANOVA with stigma acknowledgment (yes or no) as the independent variable and visual attention as the dependent variable did not reveal a significant effect of applicant stigma acknowledgment on visual attention to the stigma, $F(1, 112) = 0.88$, $p > .05$, $\eta^2 = .01$ ($M_{yes} = 0.09$, $SD = 0.05$ and $M_{no} = 0.11$, $SD = 0.49$), not supporting Hypothesis 7.

Discussion

The results revealed that the participants rated a facially stigmatized (vs. nonstigmatized) applicant lower, which is consistent with past research (e.g., Blascovich et al., 2001). However, this study is the first known study to shed light on the specific process involved in discrimination against facially stigmatized applicants. First, the participants visually attended more to the cheek region of a facially stigmatized (vs. nonstigmatized) applicant, which is consistent with research that shows that negative and/or novel stimuli capture visual attention (Fox et al., 2001; Langer et al., 1976; Rinck & Becker, 2006; Thompson & Kent, 2001). Second, participants' visual attention directed to the stigma negatively affected their memory of interview facts. Third, the memory of the interview facts was directly negatively affected by the stigma. Fourth, the participants' memory of the interview content influenced their ratings of the applicant. Such findings inform theory on divided attention (Shomstein & Yantis, 2004, 2006) by supporting the notion that stigmas do attract attention away from interview content. Such findings are also critical for the validity of interviews and organizations that want to choose the best candidate.

The results additionally reveal that the participants viewing a facially stigmatized (vs. nonstigmatized) applicant depleted more self-regulatory resources. This effect, however, was reduced when controlling for the measure of visual attention regulation. That is,

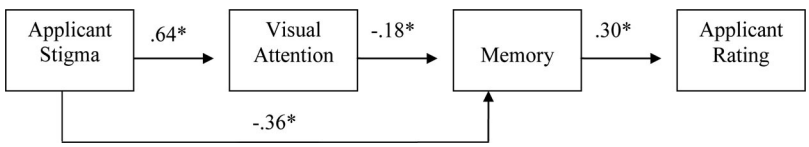

Figure 3. Mediation model from Study 1. * $p < .05$.

participants viewing a stigmatized applicant did, to some extent, regulate their visual attention, which was related to the depletion of self-regulation. These results suggest that interviewers struggle when interacting with facially stigmatized individuals and potentially exert resources on factors that take away from accurate evaluations.

Acknowledgment of the stigma did not reduce the visual attention to the stigma, which was unexpected. In fact, acknowledgment was not related to any of the measures (i.e., self-regulatory depletion, memory of the interview, and applicant ratings). It could be the case that the particular wording applicants used in their acknowledgments was not powerful enough to reduce the visual attention. Another possibility focuses on the fact that normal face processing involves visual attention to the eyes, nose, and mouth (see Li & Jain, 2005). Given that the facial stigma was in such close proximity to these other areas of visual attention, acknowledgment may simply not have effectively reduced attention to the facial stigma. Because it is so critical for stigmatized individuals to be able to successfully remediate discrimination that they receive, we hope future research will look at other types of acknowledgments as well as other potential strategies.

A strength and novel procedure of the present study was the use of an eye tracker to examine stigmas in an interview context; yet, it is also limiting in that our interviewers did not interact live with the applicant. It is possible that interviewers might respond differently to live applicants than to pictures on a computer, because the applicant is watching them, and the social norm dictates that it is not polite to stare (Langer et al., 1976). In Study 1, this social norm was not present. Another limitation of Study 1 was the use of undergraduate students, who may not have the experience of conducting interviews or the managerial experience of making selection decisions. An additional and related limitation was that the social context of an interview was absent (see Dipboye, 2005). In particular, the interviewers did not have prior interview and selection decision experience, did not ask the questions, and did not have experience in the ostensible job. In Study 2, we directly addressed these limitations by using experimental methods in a face-to-face interview context with authentic managers.

Study 2

Overview and Hypotheses

Study 2 was a replication of Study 1 with some key modifications. First, we did not measure visual attention. Eye trackers, at present, cannot be used on actual, live interactions, because the stimulus must remain static on a computer screen. Second, we included a measure of self-regulation, which we did not have in the first study. Including this measure (as well as the measure of self-regulatory depletion used in Study 1) allows us to more fully determine whether interviewers do regulate their focus in interviewers with facially stigmatized applicants. The measure that we used in Study 1 was actually constructed to be a manipulation check and may not have been the best measure. Thus, in Study 2, we used a self-regulation scale utilized in past research (e.g., Sitzmann & Ely, 2010). Third, because acknowledgment did not work in Study 1, we did not include this manipulation in Study 2.

We begin by examining the three testable hypotheses from Study 1:

Hypothesis 1: Facially stigmatized (vs. nonstigmatized) applicants will be rated lower on overall effectiveness.

Hypothesis 3: There will be less memory (i.e., recall) of what was said in the interview with a facially stigmatized (vs. nonstigmatized) applicant.

Hypothesis 6: There will be more depletion of self-regulatory resources on a subsequent task with a facially stigmatized (vs. nonstigmatized) applicant.

We also expected that interviewers with a facially stigmatized applicant would engage in more self-regulation by controlling their focus in the interview. Furthermore, because the same resource is used for self-regulation and other acts of executive functioning, interviewers who engage in self-regulation will impair their memory for the interview content (see Baumeister et al., 1998; Muraven & Baumeister, 2000). In particular, self-regulatory focus affects memory because by regulating visual attention, the effortful control might interfere also with the task of allocating aural attention (i.e., verbal information) to the applicant, which in turn might negatively affect memory. Thus, we predicted:

Hypothesis 8: Interviewers will engage in more self-regulation during an interview with a facially stigmatized (vs. nonstigmatized) applicant.

Hypothesis 9: Self-regulation will mediate the relationship between stigma condition and interviewer memory.

Hypothesis 10: Memory will mediate the relationship between self-regulation and the ratings of the applicant.

Method

Participants. Thirty-eight full-time managers (21 women and 17 men) enrolled in a part-time MBA and/or a master of science in a Hospitality Management Program participated. The participants had an average of 5.62 ($SD = 5.1$) years in management and an average age of 29.65 ($SD = 4.78$). All had experience in interviewing applicants for their current or past employers. Nineteen of the participants were Caucasian, 11 Asian, six Hispanic, and two African American/Black.

Design and procedure. A two-group experimental design was used in which managers interviewed a confederate without or with a facial stigma (i.e., a port-wine stain). One female confederate acted as the applicant. The confederate was blind to the research hypotheses and experimental condition. Following the procedure of past research (see Blascovich et al., 2001; Kleck & Strenta, 1980), prior to the participant's arrival, makeup was applied to the confederate's face to create a facial stigma. In the facially stigmatized condition, cream-based stage makeup was applied to the confederate's left cheek in an oblong shape approximately 4 cm wide and 6 cm high using a cutout that was specifically constructed to fit the confederate's face. The makeup color and applicator were specifically made to create port-wine stains. In the not-facially stigmatized condition, translucent cream was applied to the same area on the confederate's face. The confederate was kept unaware of the condition by having her close her eyes during the makeup application, which makes the hypothesis test

conservative because those who have facial stigmas are likely to be aware of them and act differently as a result (Goffman, 1963).

Managers, who were randomly assigned to one of the two conditions, were instructed that the study ostensibly examined structured interviews that are used in graduate programs. They learned that they would interview an undergraduate senior student who was interested in applying to business school. The managers used a structured interview and asked all the questions in the order they appeared.

The structured interview questions were developed from a pool of questions used by various graduate programs gathered by the university career services. The confederate playing the role of the undergraduate student memorized a verbal and behavioral script. To measure the consistency of the confederate's behavior, the interviews were also videotaped and coded by three trained raters blind to the hypotheses and condition (i.e., the camera was placed to the right side, so they could not see whether the confederate had a port-wine stain).

The interview lasted for 10 min. Then, managers completed the color Stroop task used in Study 1 under the guise of creating distractions that occur in an office. After this, managers completed a series of measures.

Measures.

Self-regulatory depletion. The same color Stroop task and measure from Study 1 was used. The average score was 1.43 s for the incongruent color-name trials ($SD = 0.28$); the measure had a coefficient alpha of .76.

Self-regulatory focus. Six items used by past research (Sitzmann & Ely, 2010) was used that measured self-regulatory focus with a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items included, "During the interview, I had good concentration" (reversed scored); "During the interview, I had to work hard to keep my mind on the answers"; and "During the interview, I found it hard to pay attention." The coefficient alpha for the three items was .85.

Memory. Consistent with Study 1, participants' memory was tested using a 20-item multiple-choice test (with seven answer options) on facts about the applicant, based on what he or she said during the interview (i.e., work experiences, favorite class, internship experience, and career goals). The number of correct items was summed and used as the measure of memory. The average score was 12.6 ($SD = 2.7$); the test had an alpha coefficient of .76.

Applicant rating. The same scale from Study 1 was used; the coefficient alpha for the scale was .81.

Manipulation checks. Participants reported whether the applicant had a port-wine stain on the face using a "yes" or "no" response scale. Immediately after the makeup (either the port-wine stain or translucent cream) was applied, the confederate also reported whether she had a port-wine stain on the face using a "yes" or "no" response scale.

Confederate behavior. Three trained coders, blind to the hypotheses and experimental condition, rated the behavior of the confederate using two scales. First, confederate discomfort was measured by how anxious, uncomfortable, worried, and agitated the confederate appeared using a scale by Avery, Richeson, Hebl, and Ambady (2009). Ratings of each adjective were obtained on a 9-point scale ranging from 1 (*not at all*) to 9 (*very much so*). Analyses indicated adequate agreement ($r_{wg} = .80$), and thus their ratings were combined by averaging within, then across, coders, resulting in an alpha coefficient of .86.

Second, using a scale of applicant behavior by DeGroot and Motowidlo (1999), the coders rated the extent of smiling, gaze in the direction of the interviewer, hand movement, and lean toward the interviewer rated on a 9-point scale ranging from 1 (*not at all*) to 9 (*very much so*). Analyses indicated adequate agreement ($r_{wg} = .76$), and thus their ratings were combined by averaging within, then across, coders, resulting in an alpha coefficient of .81. The two scales had a high correlation ($r = -.75$), so after reverse coding the first scale, an overall confederate behavior index was computed by combining the two scales that resulted in an alpha coefficient of .85.

Results

Manipulation checks. All managers who viewed an applicant with a stigma correctly identified that the applicant had a port-wine stain on her face. It is important to note that the confederate only correctly identified having the port-wine stain on her face 18 of 38 times (20 wrong identifications); a chi-square test did not show a significant difference between the correct and wrong identification rate, $\chi^2(1, N = 38) = 1.10$, $p > .05$. That is, the confederate's guess was not significantly different from an expected 50/50 guess that would be expected by chance. This is important because we did not want experimenter bias on the part of the confederate to drive the results.

A t test with stigma condition (yes or no) as the independent variable and the confederate behavior index as the dependent variable did not reveal a significant effect of stigma condition on the confederate behavior index, $t(36) = 0.70$, $p > .05$, $\eta^2 = .01$ ($M_{yes} = 4.9$, $SD = 1.4$ and $M_{no} = 5.1$, $SD = 1.3$). Thus, the confederate's behavior in the stigma condition was not significantly different than her behavior in the nonstigma condition. Table 4 presents the means, standard deviations, and correlations of the independent variable (i.e., applicant stigma) and the dependent variables (i.e., self-regulatory depletion, self-regulatory focus, memory of the interview, and applicant ratings).

Hypothesis 1. A t test with stigma condition (yes or no) as the independent variable and the applicant ratings as the dependent variable revealed a significant effect of applicant stigma on applicant ratings, $t(36) = 2.21$, $p < .05$, $\eta^2 = .05$. Managers who interviewed a facially stigmatized applicant rated her lower ($M = 3.62$, $SD = 0.52$) than those who interviewed a nonstigmatized applicant ($M = 4.03$, $SD = 0.57$), thereby supporting Hypothesis 1.

Table 4
Means, Standard Deviations, and Correlations of the Study 2 Variables

Variable	*M*	*SD*	1	2	3	4	5
1. Applicant stigma	—	—	—				
2. Self-regulation (focus)	2.6	0.80	.57*	—			
3. Memory	12.6	2.7	−.53*	−.36*	—		
4. Applicant rating	3.8	0.58	−.36*	−.24	.32*	—	
5. Self-regulatory depletion	1.4	0.28	.34*	.27*	−.42*	−.12	—

Note. Stigma was coded 1 = no, 2 = yes.
* $p < .05$.

Hypothesis 3. A *t* test with stigma condition (yes or no) as the independent variable and participant memory as the dependent variable revealed a significant effect of applicant stigma on participant memory, $t(36) = 3.51$, $p < .05$, $\eta^2 = .28$. Managers who interviewed a facially stigmatized applicant recalled less interview information ($M = 11.23$, $SD = 2.2$) than those who interviewed a nonstigmatized applicant ($M = 14.06$, $SD = 2.5$), thereby supporting Hypothesis 3.

Hypothesis 6. An ANCOVA, with stigma condition (yes or no) as the independent variable, incongruent match time on the color Stroop task (i.e., self-regulatory depletion) as the dependent variable, and the congruent color Stroop time as the covariate, showed a significant effect of stigma, $F(1, 36) = 3.93$, $p < .05$, $\eta^2 = .12$. Managers who interviewed a facially stigmatized applicant showed more depletion ($M = 1.34$, $SD = 0.22$) than managers who interviewed a nonstigmatized applicant ($M = 1.53$, $SD = 0.31$), thereby supporting Hypothesis 6.

Hypothesis 8. A *t* test with stigma condition (yes or no) as the independent variable and the self-regulatory focus measure as the dependent variable showed a significant effect of stigma, $t(36) = 3.94$, $p < .05$, $\eta^2 = .33$. Managers who interviewed a facially stigmatized applicant engaged in more self-regulation ($M = 3.1$, $SD = 0.61$) than managers who interviewed a nonstigmatized applicant ($M = 2.1$, $SD = 0.72$), thereby supporting Hypothesis 8.

Hypothesis 9. Using Preacher and Hayes' (2008) tests of the indirect effects, the results for Hypothesis 9 (i.e., stigma → self-regulation (focus) → memory) showed that applicant stigma had a significant, positive relationship with self-regulation ($\beta = .57$, $p < .05$). However, self-regulation was not related to memory of the interview when applicant stigma was in the model ($\beta = -.08$, $p > .05$). The direct effect of applicant stigma to the memory of the interview ($\beta = -.52$, $p < .05$) was reduced with the mediator in the model ($\beta = -.47$, $p < .05$), but this reduction was not significant ($Z = -.47$, $p > .05$; 95% CI [−.31, .15]), thereby not supporting Hypothesis 9. The results suggest that applicant stigma had a direct effect on memory and suppressed the relationship between self-regulation and memory, which were significantly correlated ($r = -.36$; see Table 4).

Hypothesis 10. Using Preacher and Hayes' (2008) tests of the indirect effects, the results for Hypothesis 10 (i.e., self-regulation [focus] → memory → ratings) showed that applicant self-regulation had a significant, negative relationship with memory ($\beta = -36$, $p < .05$). However, memory was not related to the applicant ratings when self-regulation was in the model ($\beta = .15$, $p > .05$). The direct effect of self-regulation to the applicant rating was not significant ($\beta = -.24$, $p > .05$); therefore, mediation did not occur, thereby not supporting Hypothesis 10. Instead, the results suggest that self-regulation suppressed the relationship between memory and the ratings because the bivariate correlation was significant ($r = .32$, $p < .05$; see Table 4).

We used path analysis via AMOS 6 (Arbuckle, 2005) to test a model with all of the variables. We first tested the hypothesized model, specifying the role of both mediators simultaneously (applicant stigma → self-regulation [focus] → memory → applicant rating). The hypothesized mediation model demonstrated poor fit, $\chi^2(3, N = 38) = 9.6$, $p < .05$; CFI = .71; IFI = .74; SRMR = .15; RMSEA = .26; the variables in the models explained 5% of the variance in the applicant ratings.

Following recommendations for mediation (James et al., 2006; Mathieu & Taylor, 2006), we tested three alternative models, which included the partial mediation models and the full model. The first partial mediation model (Model 2 in Table 5) was identical to the hypothesized model except for the addition of a direct effect path from stigma to the overall rating of the applicant. As shown in Table 5, the fit indices for the partial mediation model were mixed, $\chi^2(2, N = 38) = 3.17$, $p > .05$; CFI = .95; IFI = .96; SRMR = .09; RMSEA = .13. Although the RMSEA value indicated a poor fit, the other fit indices indicated an adequate fit. The small sample size and degrees of freedom might explain the discrepancy in the RMSEA value. The path from stigma to the overall rating of the applicant was significant ($\beta = -.48$, $p < .05$). Model 2 explained 5% of the variance in the applicant ratings.

Reported as Model 3 in Table 5, we examined the second partial mediation model in which a direct path from stigma to applicant rating was added to the hypothesized model. As shown in Table 5, the overall fit indices were inadequate, suggesting a poor. Model 3

Table 5
Mediation Model (Study 2): Comparisons and Path Coefficient of Structural Equation Models

Variable	Hypothesized model	Model 2	Model 3	Model 4	Model 5
Applicant stigma → self-regulation	.57*	.57*	.57*	.57*	.57*
Self-regulation → memory	−.36*	−.09	−.36*	−.36*	−.09
Memory → applicant rating	.22*	.22*	.04	.15	.04
Applicant stigma → memory		−.48*			−.48*
Applicant stigma → applicant rating			−.36*		−.35*
Self-regulation → applicant rating				−.18	
χ^2	9.6*	3.17	6.47*	8.54*	0.05
df	3	2	2	2	1
CFI	.71	.95	.80	.71	.99
IFI	.74	.96	.83	.76	.99
SRMR	.15	.09	.11	.12	.009
RMSEA	.26	.13	.26	.31	.001
Variance explained in applicant rating	5%	5%	12%	7%	13%

Note. $N = 38$. CFI = comparative fit index; IFI = incremental fit index; SRMR = standardized root-mean-square residual; RMSEA = root-mean-square error of approximation.
* $p < .05$.

explained 12% of the variance in the applicant ratings. Model 4 was the third partial mediation model in which a direct path from self-regulation to applicant rating was added to the hypothesized model. The overall fit indices were inadequate, suggesting a poor fit as shown in Table 5. Model 4 explained 7% of the variance in the applicant ratings.

Model 5 in Table 5 was the full model that included a direct effect path from stigma to the overall rating of the applicant and an additional path from stigma to memory. As shown, the overall fit indices were adequate, $\chi^2(1, N = 38) = .05$, $p < .05$; CFI = .99; IFI = .99; SRMR = .009; RMSEA = .001. Comparing Model 2 and Model 5, the additional path did not provide a better fit of the data, $\chi^2_{diff}(1, N = 38) = 3.12$, $p > .05$; the rule of parsimony suggests that Model 2 (i.e., the partial mediation model) is the preferred model (James et al., 2006). However, Model 5 explained 13% of the variance in the applicant ratings as opposed to 5% of variance in Model 2, and the fit indices in Model 5 were improved from Model 2, suggesting that Model 5 is the preferred model. The results from Model 2 suggest that the managers who interviewed a stigmatized applicant reported more self-regulation ($\beta = .57$, $p < .05$) and had less memory of the interview facts ($\beta = -.48$, $p < .05$) than the control group, and that memory was positively related to the applicant ratings ($\beta = -.48$, $p < .05$). The results from Model 5 suggest that the stigma had a substantial direct effect on self-regulation, memory, and ratings independently from one another (see Figure 4 for Models 2 and 5).

Discussion

In Study 2, we replicated the key results from Study 1 using a face-to-face interview paradigm. In particular, managers who interviewed a facially stigmatized applicant (vs. a nonstigmatized applicant) rated the applicant lower, recalled less information about the interview, and depleted more self-regulatory resources. In addition, we found that managers who interviewed a facially stigmatized (vs. nonstigmatized) applicant engaged in more self-regulation. That is, managers had to allocate attentional effort to focus on what was being said during the interview. However, we found mixed support for the two-stage mediation model. The managers who interviewed a stigmatized applicant (vs. the control group) reported more self-regulation, but self-regulation was not related to the memory of the interview when examining the direct effect of the applicant stigma on the applicant ratings. Although stigma was related to self-regulation and self-regulation was related to memory, the mediating paths were not significant in the models.

As opposed to Study 1, the results of Study 2 suggest that the stigma in a face-to-face context has a negative effect on the independent outcomes of self-regulation, memory, and ratings. Thus, the stigma in Study 2 had a substantial direct effect on all the outcome variables. This overall negative effect is consistent with the extant research that consistently shows that stigmas often lead to an overall negative experience for the perceiver, including feelings of discomfort, anxiety, and threat in interactions with stigmatized individuals (Crocker et al., 1998; Hebl et al., 2000). For example, in a face-to-face interaction with facially stigmatized individuals, Blascovich et al. (2001) found that nonstigmatized interactants exhibited increased cardiovascular activity. In Study 2, the negative effect of a facial stigma might have been more profound than the effect found in Study 1 because a facial stigma can have a more impactful shock in a face-to-face context than on a still picture or a computer screen (Macgregor, 1990; Robinson, Rumsey, & Partridge, 1996). It is also possible that in Study 1 the effect of the stigma was less negative than in Study 2 because the social pressures present in a face-to-face interview were lacking in Study 1. The interviewers in Study 2 might have felt pressure to avoid and discomfort about staring at a certain location on their interactant's face much more so than did the participants in Study 1. Thus, the conflict between the need to stare at a facial stigma and not appearing rude also leads to an overall negative experience for the perceiver, which might have occurred in Study 2 but not in Study 1 (Houston & Bull, 1996; Langer et al., 1976).

General Discussion

The purpose of the present article was to examine discrimination against facially stigmatized (vs. nonstigmatized) applicants and to identify the process involved. The results from both studies revealed that interviewers with a facially stigmatized applicant rated the applicant lower, recalled less information about the interview, and depleted more self-regulatory resources than interviewers with a nonstigmatized applicant. We found that visual attention, self-regulation, and memory were important mediators of the stigma–ratings relationship in Study 1 but that the stigma in a face-to-face context had a negative effect on self-regulation, memory, and ratings independently from one another in Study 2.

In particular, the results from Study 1 revealed that having a stigma was related to more visual attention to the cheek (i.e., where the stigma was placed), which was related to less memory for the interview and lower ratings. This is consistent with the findings from the stigma literature that suggest that stigmas draw attention (Pryor et al., 2004), but that drawing attention to the stigma and

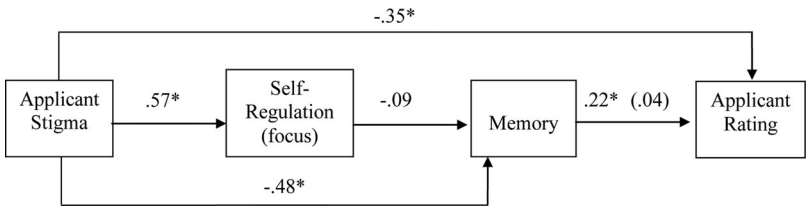

Figure 4. Mediation Models 2 and 5 from Study 2. The standardized beta weight in the parentheses is the changed value when the direct path from the applicant stigma to the applicant rating is added to the model; all the other weights remain the same. * $p < .05$.

away from the content of the interview (i.e., what is being said) interferes with memory. This finding is also consistent with the cognitive literature in that attention is limited (Schmeichel, 2007; Shomstein & Yantis, 2004, 2006). Thus, when interviewers are confronted with a stigmatized applicant, they might focus their attention on the stigma at the risk of missing critical information from the interview (Shomstein & Yantis, 2004, 2006).

However, we found a different pattern of results in Study 2 in that the mediating paths were not significant. The results from Study 2 suggest that in a face-to-face context, a facial stigma might lead to an overall negative experience for the perceiver, leading to a substantial direct effect on all the outcome variables. In a face-to-face interaction, the perceiver often experiences a conflict between the social norms to not stare with the need to stare at stigma because it is unexpected and shocking (Crocker et al., 1998; Hebl et al., 2000; Houston & Bull, 1996; Langer et al., 1976). Thus, the conflict between staring and not staring might lead to an overall negative experience for the perceiver.

Applicant stigma in both studies had an effect on depletion of self-regulatory resources, such that interviewers with a facially stigmatized (vs. nonstigmatized) applicant showed more depletion on the Stroop task. Models of visual attention (Mogg et al., 2000) suggest that visual attention is allocated to novel and/or negative stimuli and that such attention has self-regulatory costs. The results supported that interviewers did indeed engage in more regulation of their attention in an interview with a facially stigmatized (vs. nonstigmatized) applicant.

Potential Limitations and Suggestions for Future Research

A potential limitation from both studies is that the information from the applicant was fairly positive, suggesting that the applicant was qualified. The models from both studies (see Figures 3 and 4) implicitly assumed that the applicant is qualified, because memory of what was said in the interview was hypothesized and found to be positively correlated with the ratings of the applicant. Future research might examine how negative information from the applicant can influence the ratings of the applicant when memory is impaired. For example, if an applicant has a stigma and also performs poorly, it is likely that the applicant would receive low ratings because memory of positive or effective answers is important for evaluating the applicant (Dipboye, 2005; Macan & Dipboye, 1994; Posthuma et al., 2002). In Study 1 and Study 2, the answers from the applicant were positive; in the stigma condition, the participants had less memory of these answers, which negatively affected the evaluations of the applicant.

In addition, the elaboration likelihood model of *persuasion* suggests that when individuals do have and use cognitive resources, their attitude or evaluation is likely to develop through the central route process (Petty & Cacioppo, 1986). This process involves a great deal of thought. Therefore, when interviewers are not distracted by a stigma (because it does not exist), their attitude and evaluation are likely to depend on the performance/responses of the applicant. If the applicant provides qualified answers, then they are likely to be rated positively, whereas if the applicant provides poor responses, the evaluation is likely to be similarly negative. If the applicant has a stigma, then interviewers might be distracted as shown in the present article. If the interviewers are distracted, then their attitude or evaluation of the applicant is likely to develop through the peripheral route process, relying on how they feel about the stigma or any other distraction.

Another potential limitation and direction for future research is that the present studies did not examine individual differences that might influence reactions to a facially stigmatized applicant. For example, an individual difference that has been linked to reactions to physical stigmas is perceived vulnerability to disease (Thompson & Kent, 2001), because some stigmas, like facial disfigurements, are often feared to be contagious (Goffman, 1963; Major & O'Brien, 2005). Although acknowledgment of the stigma did not reduce the visual attention to the stigma, which was unexpected, we hope future research will look at other types of acknowledgments as well as other potential strategies.

Despite the limitations, the present studies are novel for breaking the interaction down to understand how attention is allocated and might be redirected. Furthermore, the present study has important implications. Theoretically, these results can be understood within the working memory and divided attention framework. The data suggest that interviewers engaged in more self-regulation by attending to the stigma and recalled less information about the applicant when the applicant had a stigma than when the applicant did not. Models of reactions to stigmas (Pryor et al., 2004), negative stimuli (Fox et al., 2001; Rinck & Becker, 2006), and the "novel stimulus" hypothesis (Langer et al., 1976; Thompson & Kent, 2001) suggest that individuals tend to think about the stigma and regulate their focus to the interview, which can be cognitively tasking. In particular, the data suggest that controlling attention can lead to depletion of self-regulatory resources and cognitive interference that affects memory.

As such, the present study provides important implications for those conducting interviews. For instance, the results show that facial stigmas distract interviewers from the content of the interview, which ultimately biases the interview. Because one of the main goals of the interview is to gain information about the applicant and make valid evaluations of the applicant (Dipboye, 2005), such findings are critical for the validity and reliability of interviews. It is incumbent upon organizations and interviewers who wish to be impartial to be aware of results such as those found in the present study, as simply knowing about such hidden biases can alert people to overcoming them during interactions (Shelton & Richeson, 2005).

In addition, such results are important for stigmatized individuals to consider effective strategies for remediating these biases. It is possible that such strategies already exist (see Singletary & Hebl, 2009, for possibilities), but researchers have not yet empirically shown the effectiveness of these with facial stigmas. Similarly, organizations might also use interventions to attenuate discrimination, such as the use of structured interviews. It is important to note, however, that although the bias was still found in Study 2 with the use of structured interviews, it is possible that discrimination might have been even greater in the absence of structured interviews. Clearly, then, additional organizational measures might be needed, such as note-taking during the interview and/or including the stigma of physical imperfections in diversity training. In short, however, we believe that identifying the discrimination, as well as the processes underlying it, provide the necessary steps to understanding it and the first step toward eventually remediating such discrimination.

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