The Infection of Bad Company: Stigma by Association

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Stigma by association represents the process through which the companions of stigmatized persons are discredited. Conduits for stigma by association range from the strong and enduring bonds of kinship to the arbitrary occasions of being seen in the company of someone who is stigmatized. A theoretical model is proposed in which both deliberative and spontaneous processes result in the spread of stigma to the companions of stigmatized persons. Support for this model was found across 3 studies that examined how explicit and implicit stigma-relevant attitudes moderate stigma-by-association effects. When social relationships were meaningful (e.g., kinship), both explicit and implicit attitudes moderated the devaluation of stigmatized persons’ companions. On the other hand, when social relationships appeared coincidental only implicit attitudes moderated companion devaluation.

Keywords: stigma, implicit attitudes, explicit attitudes

And keep them [children] from all ill, especially the infection of bad company. —John Locke, Some Thoughts Concerning Education

Associate yourself with men of good quality if you esteem your own reputation for ‘tis better to be alone than in bad company.

—George Washington

Like an infectious disease, social stigma can spread from a “marked” person to others who are somehow associated with this person. Families, friends, and sometimes even casual acquaintances of those stigmatized are often obliged to carry some of the devaluation associated with the mark (Goffman, 1963). Why does stigma have this power to contaminate others? Through what psychological mechanisms does stigma spread?

In his classic treatise, Goffman (1963) defined stigma as “an undesired differentness from what we had anticipated” (p. 5) that reduces the bearer “in our minds from a whole and usual person to a tainted, discounted one” (p. 3). Goffman identified three general types of stigmas: abominations of the body (e.g., deformities), tribal stigmas (e.g., race and religion), and flaws in moral character (e.g., a criminal record, a history of drug addiction). Goffman recognized the social risk that companions of stigmatized persons bear. People who out of sympathy choose to affiliate with stigmatized persons are afforded a kind of courtesy stigma, in essence, a qualified social admission into the stigmatized group. Bearing a courtesy stigma has implications not only for how members of the stigmatized group treat someone but also for how the bearer is treated by outsiders. From an outsider’s perspective, those bearing a courtesy stigma share the taint of the stigma. Goffman suggested that courtesy stigma can be shared by people who are connected to the stigmatized through social structure associations as well as through choice:

Thus, the loyal spouse of a mental patient, the daughter of an ex-con, the parent of the cripple, the friend of the blind, the family of the hangman, are all obliged to share some of the discredit of the stigmatized person to whom they are related. (Goffman, 1963, p. 30)

Since Goffman’s seminal work, many researchers have referred to this phenomenon as an associative stigma (Mehta & Farina, 1988) or as stigma by association (Goldstein & Johnson, 1997; Neuberg, Smith, Hoffman, & Russell, 1994; Östman & Kjellin, 2002). Stigma by association seems to be a robust finding across many different kinds of stigmas (Angermeyer, Schulze, & Dietrich, 2003; Birenbaum, 1992; Corrigan & Miller, 2004; Corrigan, Watson, & Miller 2006; Cvinar, 2005; Goldstein & Johnson, 1997; Green, 2003; Hawkins & Hawkins, 1995; Hebl & Mannix, 2003; Neuberg et al., 1994; Norvilitis, Scime, & Lee, 2002; Olson, Dunham, Dweck, Spelke, & Banaji, 2008; Penny & Haddock, 2007; Snyder, Omoto, & Crain, 1999). Also, stigma spreads through different types of associations. First, research has supported Goffman’s contention that meaningful relationships such as family ties, strong ethnic identifications, and chosen affiliations represent powerful conduits for stigma by association (Corrigan & Miller, 2004; Corrigan et al., 2006; Goldstein & Johnson, 1997; Hinshaw, 2005; Mehta & Farina, 1988; Neuberg et al., 1994; Östman & Kjellin, 2002; Phelan, 2005; Schmader & Lickel, 2006; Wahl & Harman, 1989). Second, stigma-by-association effects can also occur via simple associations that are purely coincidental. For example, simply being seen in the proximity of an obese woman in a waiting room was found to result in the devaluation of a man interviewing for a job (Hebl & Mannix, 2003; see also Penny & Haddock, 2007). The desire to avoid stigma by association can be a primary motivation for socially excluding stigmatized persons (Jones et al.,...
Thus, an apprehension of the potential secondary effects of a stigma, such as the spread of the stigma to companions, could contribute to one of the primary effects of stigma, social exclusion of those who bear the mark.

**Theoretical Explanations of Primary and Secondary Reactions to Stigma**

In developing our model of stigma by association, we first focused upon the processes involved in primary reactions to stigma. In other words, what psychological processes determine how people react to persons who possess a stigma? We theorize that the psychological processes that are involved in primary reactions to stigmas are those that generate secondary reactions or stigma spread as well. A growing body of evidence supports the theory that primary reactions to stigmatized persons involve two related but conceptually distinct psychological processes. One process is spontaneous (or reflexive) and the other more deliberative (Pryor, Reeder, & Landau, 1999; Pryor, Reeder, Yeadon, & Hesson-McClimens, 2004; Reeder & Pryor, 2000).

Turning first to spontaneous processes, research on implicit attitudes has documented that people have spontaneous or reflexive negative reactions to a variety of stigmas including abominations of the body (Bessenoff & Sherman, 2000; Grandfield, Thomson, & Turpin, 2005; Neumann, Hulshebeck, & Seibt, 2004; Prueitt & Chan, 2006; Teachman, Gapinski, Brownell, Rawlins, & Jeyaram, 2003; Wang, Brownell, & Wadden, 2004), tribal stigmas (Greenwald, McGhee, & Schwartz, 1998; Kawakami, Phillips, Steele, & Dovidio, 2007; Park, Felix, & Lee, 2007; Payne, Cheng, Govorun, & Stewart, 2005; Ulhmann, Dasgupta, Elgueta, Greenwald, & Swanson, 2002), and moral character flaws (Bassett & Dabb, 2005; Brener, von Hippel, & Kippax, 2007; Jellison, McConnell, & Gabriel, 2004; Teachman, Wilson, & Komarovskaya, 2006). Reflexive reactions to stigmas are fast, feel effortless, and are often emotional. The reflexive system is thought to concern both instinctive reactions (Kurzban & Leary, 2001) and spontaneous reactions that have developed through acquired associations.

In contrast to reflexive reactions to stigma, deliberative reactions feel volitional, controllable, and effortful to the person who is engaged in them (Gawronski & Bodenhausen, 2006; Lieberman, Guant, Gilbert, & Trope, 2002; Soman, 1996; Smith & DeCoster, 2000; Strack & Deutsch, 2004). For example, people may consciously apply certain rules when determining whether it is socially appropriate to react negatively to a stigmatized person (Crandall & Eshleman, 2003). One such rule seems to be that one should react less negatively to people whose stigmas are due to forces beyond their personal control (Weiner, 1995). For example, Pryor et al. (2004) found that participants reacted less negatively to stigmas perceived to have uncontrollable onsets (e.g., blindness) than those perceived to have controllable onsets (e.g., drug addiction). Consistent with the notion that reactions to uncontrollable-onset stigmas involved a deliberative application of rules, participants were more likely to approach those with uncontrollable-onset stigmas after time had passed for considering their reactions.

Thus, psychological reactions to stigmatized persons seem to involve dual processes with an interplay between reflexive and deliberative processes over time. Initial reactions to stigmas are likely to involve reflexive processes, and delayed reactions are likely to bring deliberative processes into play. Consistent with this prediction, Pryor et al. (2004) found different correlates of initial versus later approach/avoidance reactions to stigmatized persons. Their research employed a computer task that tracked participants’ moment-by-moment behaviors over time. Immediate avoidant reactions to stigmatized persons were more likely in people who were sensitive to disgust experiences. Disgust is thought to be an emotion that has specific relevance to stigma avoidance (Rozin, Lowery, & Ebert, 1994). As time passed, participants who were more strongly motivated to control stigma-related prejudice tended to adjust their initial avoidance reactions to stigmatized persons. Over time, those participants more motivated to control prejudice came to approach stigmatized persons more closely.

This conception of dual processes in the primary reactions to stigmas does not imply a simple stage model in which reflexive processes are activated and then exhausted when deliberative processes take over. Instead, it depicts an interplay of immediately activated reflexive processes and later activated deliberative processes, where the ultimate reaction to a stigmatized person is likely to be affected both by the initial reactions and by those that came about only as time passed (Pryor et al., 2004). Thus, even seemingly deliberative judgments about a stigmatized person could bear the imprint of reflexive reactions that were moderated by more thoughtful considerations.

Although various theoretical explanations have been offered for the stigma-by-association effect, the underlying mechanisms appear similar to those described above. That is, some of these theories depict stigma spread as a spontaneous or reflexive process, and others suggest that more deliberative processes are involved. For example, stigma by association might be explained as a form of evaluative conditioning (Walther, 2002; Walther, Nagenast, & Trasselli, 2005). Walther (2002) demonstrated that the simple pairing of the photos of a neutral target person and a disliked person on a computer screen results in the devaluation of the neutral target. The devaluation even spreads to other people previously associated with the target—a spreading attitude effect. Evaluative conditioning is not dependent on the statistical contingency (i.e., the actual correlation) of the neutral and disliked persons. Mere spatial-temporal co-occurrences can lead to the spread of devaluation (Baeyens, Hermans, & Eelen, 1993). Furthermore, Walther found evaluative conditioning does not require awareness of contingencies and actually is enhanced under distraction conditions that would impede contingency awareness. Thus, the triggering of negative affect and its binding to previously neutral persons seem to reflect a spontaneous process that does not involve conscious deliberation. Recent research by Jones, Fazio, and Olson (2009) suggests that evaluative conditioning may involve an implicit misattribution process in which an evaluative response automatically evoked by a valenced stimulus is incorrectly and implicitly attributed to another stimulus.

Other theoretical accounts of stigma-by-association effects depict more deliberative thought processes through which people might consciously infer stigma spread. For example, Mehta and Farina (1988) suggested that people might follow the age-old dictum of “birds of a feather flock together.” In other words, they may assume that people who are socially associated are somehow similar. In the case of chosen affiliations, such as spouses or friends, people might assume that those who choose to associate with stigmatized persons must do so because higher status persons are unavailable to them. So, even if no stigma is obvious, people who affiliate with those stigmatized must have something wrong
with them, else why would they choose stigmatized persons as associates?

An underlying motivation in this sort of propositional reasoning could be a drive to achieve cognitive consistency or balance (Heider, 1958). Thus, by inferring negative characteristics in someone who has a unit relationship with a stigmatized person, one achieves a balance in sentiments. A crucial factor in the spread of stigma through deliberative processes seems to be that people assume some sort of meaningful relationship between the stigmatized person and the companion. This meaningful relationship provides a rationale for attributing negative characteristics to a companion of a stigmatized person.

This sort of stigma spreading was found in a study by Coover and Reeder (1990). When asked to estimate the likelihood that a member of a meaningful group (in this case two friends) would perform an immoral behavior, participants were strongly influenced by whether the other member of the group had previously performed an immoral behavior. On the other hand, estimates of the likelihood that a member of an aggregate (two unrelated people) would perform an immoral behavior were not influenced by the behavior of the other person. As with the impression formed about a single individual, people tend to perceive meaningful groups as consistent wholes.

The degree to which two or more people are bonded together into a meaningful social unit has been described as a group’s entitativity (Campbell, 1958). Factors such as the degree of interaction, the importance of the group, shared outcomes, common goals, similarity, and duration all contribute to the perceived entitativity of a collection of people (Hamilton, Chen, & Way, 2011; Lickel et al., 2000). Not surprisingly, intimacy groups such as families are perceived as among the highest in social groups for entitativity.

A phenomenon related to stigma by association has been found in people’s reactions to high-entitativity outgroups whose members commit transgressions regarding one’s own ingroup: vicarious retribution (Stenstrom, Lickel, Denson, & Miller, 2008). In essence, vicarious retribution involves the tendency to retaliate against the innocent members of a high-entitativity outgroup, when other members of the outgroup have attacked members of one’s ingroup. This tendency is exacerbated when the ingroup is also high in entitativity. Vicarious retribution implies a collective blame shared by the members of a high-entitativity outgroup (Lickel, Miller, Strenstrom, Denson, & Schmader, 2006).

We theorize that high levels of group entitativity should enhance the spread of stigma through deliberative processes. When entitativity is high or, in other words, when the group is a meaningful one, people are more likely to consciously consider their explicit attitudes toward a stigmatized group member and the implications for other members of the group. High-entitativity groups such as families are likely to be seen as a source for mutual influence, as sharing a genetic heritage and hence similar traits and other dispositions and as sharing responsibility for group members’ behaviors. Families are also likely to be seen as having common motivations. When people are perceived as bound to a stigmatized person by family ties, consciously held attitudes about the stigma are likely to come into play in how others perceive them.

Dual Processes

In summary, both the primary reactions that people have to stigmatized persons and the secondary reactions involving stigma by association could reflect dual psychological processes. In the case of secondary reactions, when a stigmatized person triggers spontaneous negative affect, this affect has the potential to become associated with the companions of stigmatized persons and color how people regard them. With implicit stigma-relevant attitudes evoked, any sort of connection between a stigmatized person and a companion could provide a sufficient conduit for stigma spreading—even a simple or coincidental association.

On the other hand, in addition to their spontaneous affective responses to stigmas, people often hold conscious, explicit attitudes about many stigmatized groups. When people think about a stigma—considering its origins, its implications for social relationships, and so on—such thoughts could provide a rationale for stigma generalization from the marked person to companions. Deliberative thinking seems most likely to occur when the connection between a marked person and a companion represents a meaningful social relationship and people have time to consider the implications of this relationship. Such deliberative processes involve explicit or consciously formulated attitudes about stigmas. A prototype for such a meaningful social relationship is a family. For example, when people discover that someone is married to a person who is markedly overweight, their explicit attitudes about weight status could be generalized to the spouse. Public opinion polls show that very overweight people are frequently the targets of social discrimination and are regarded as unhealthy, too lazy to exercise, and lacking in personal willpower (Pew Research Center, 2006). These stereotypic beliefs about weight status provide a ready source of hypotheses about the potentially devalued characteristics of a spouse.

Thus, similar psychological processes potentially underlie how people react to individuals who possess stigmas and reactions to the companions of stigmatized persons. Like primary reactions to stigmas, secondary reactions can involve both associative and deliberative (propositional) processes. Like primary reactions to stigmas, even seemingly deliberate judgments about the companions of stigmatized persons could reflect the influence of both associative and deliberative processes.

Testing a Theory of Stigma Spread

We used moderation analysis as a tool to explore the roles of reflexive and deliberative processes in stigma spread. We measured individual differences in the degree to which people held implicit and explicit attitudes toward various stigmas and assessed the degree to which these individual differences moderated stigma-by-association effects. Our analysis assumes that moderation by implicit attitudes implies reflexive processes at work, whereas moderation by explicit attitudes implies deliberative processes at work. Our theory suggests that implicit stigma-relevant attitudes play a pervasive role in moderating stigma spread. Whenever people are somehow associated with stigmatized persons—even if the associations seem purely arbitrary—stigma spread should be moderated by the degree to which the stigma evokes implicit attitudes. On the other hand, we theorized, explicit stigma-relevant attitudes might play a more circumscribed role than implicit atti-
tudes in moderating stigma spread. Explicit attitudes may become important only when stigmatized persons are bound to their companions through meaningful social relationships where perceived entitativity is high. Thus, the degree to which a stigma negatively impacts an associated target (associated by either meaningful or coincidental relations) depends on the degree of negativity evoked by the stigma and whether this evaluation is implicit or explicit.

We examined stigma-by-association effects involving two of Goffman’s types of stigmas. In Study 1, we examined how familial associations to persons with what might be thought of as aberrations of the body can influence ratings of attractiveness. We hypothesized that being seen in the presence of an overweight family member would diminish a person’s perceived attractiveness. As a control in this study, participants made ratings of the same individuals in the presence of nonstigmatized (thin) family members. Because Study 1 involved a meaningful social relationship between the stigmatized persons and their companions, we expected that both implicit and explicit stigma-relevant attitudes could moderate the predicted stigma-by-association effect.

In Study 2, we replicated the procedures of the first study and added a manipulation concerning participants’ understanding of the relationships between people photographed with stigmatized persons. In one condition, participants were told that the persons in the photographs were members of the same families as in Study 1. In the other condition, participants were told that the persons in the photographs were unrelated and just happened to be photographed together. We expected that in this study, implicit stigma-relevant attitudes would moderate the stigma-by-association effect in both conditions. However, we expected that explicit attitudes would moderate the stigma-by-association effect only when participants believed that meaningful relationships existed between people and their stigmatized companions.

In Study 3, we examined whether the coincidence of being seen in a photograph with an unrelated person with a tribal stigma (i.e., a Black stranger) could serve as a conduit to devaluation. We hypothesized that participants who saw a job applicant seated next to a stigmatized person at a reception would devalue the applicant’s potential as an employee. Because only a simple association existed, we predicted that only implicit stigma-relevant attitudes would moderate this effect.

Study 1: Overweight Family Members

Study 1 examined how family relationships can serve as conduits for weight-related stigma by association. Despite the increasing prevalence of people who are overweight in American society (Ogden et al., 2006), being overweight remains one of the more powerful stigmas (Puhl & Brownell, 2003). For example, 90% of the respondents in a recent national survey opined that very overweight people are sometimes or almost always the targets of discrimination (Pew Research Center, 2006). People commonly manifest both explicit negative attitudes (Crandall, 1994; Crandall et al., 2001; Crandall & Eshleman, 2003; DeJong, 1980; DeJong, 1993; Weiner, 1995) and implicit negative attitudes (Bessenoff & Sherman, 2000; Chambliss, Finley, & Blair, 2004; Rudman, Feingberg, & Fairchild, 2002; Teachman et al., 2003; Wang et al., 2004) toward persons who are overweight.

Participants in Study 1 were asked to judge the attractiveness of individuals in a series of family photographs. In some conditions, family members of the judged individual were overweight, and in other conditions they were thin. In each case, we chose to use photos of overweight and thin female family members because being overweight has been shown to be a more powerful stigma for women than for men (Crandall, 1991, 1995; Crocker, Cornwell, & Major, 1993; DeJong & Kleck, 1986; Fallon, 1990; Hebl & Heatherton, 1998; Miller & Downey, 1999; Puhl & Brownell, 2003). Following these judgments, we assessed both implicit and explicit attitudes about overweight women. We predicted that participants would judge individuals as less attractive when they were depicted with overweight family members than with thin family members. Of greater importance, both explicit and implicit weight-related attitudes were predicted to serve as moderators of this effect.

Method

Participants. Ninety-eight undergraduates (30 men, 66 women, and 2 who chose not to disclose their gender) volunteered to participate in this study. Participants were given extra credit in psychology classes in exchange for their involvement in the study. Data were collected in small groups ranging from five to 16 participants. None of the participants indicated that they could speak or write Chinese—the relevance of which is explained below. Twenty-one participants were eliminated from all data analyses because they disclosed in debriefing that they had previously participated in research that used similar methods.

Procedures. Participants were told that the purpose of the study was to examine the attractiveness of people photographed in naturally occurring settings. They were told that a number of family photographs had been harvested from various public Internet sites. The photos were said to represent various familial relationships: spouses, siblings, parents and children, and extended families. Participants were told to expect that they might see the same people depicted in different photos over the course of the study. Their task was simple: First they saw the family photo projected on a computer screen. When first viewing each photo, they were instructed to form a general impression about all of the people depicted in it. After 3 seconds a red oval appeared singling out a particular person to be rated. After they had examined this targeted person for 3 more seconds, a screen appeared showing a graphic of a feeling thermometer. Participants then indicated a 0–100 rating of the attractiveness of the targeted person on a rating sheet provided. Unlimited time was given to make the ratings.

Participants rated the attractiveness of people in all 90 color photographs. Sixty-four of these photos were involved in our manipulation, and the other 26 were filler/distractions. The photos were harvested from various public Internet sites. The 26 filler photos depicted various social groups (e.g., parties, family portraits). For the photos involved in the manipulation, a search was undertaken to find photos of men who were shown alternatively with overweight women and with thin women. We found photos of 32 men that fit these criteria. In nine sets of these photos, we were able to find photographs of men positioned between an overweight and a thin woman. In these cases, we cropped the picture so that only the heavy woman was shown in one presentation and only the

1 Another researcher sharing the same participant pool was conducting unrelated research using the same measure of implicit attitudes at the time this research was being conducted.
thi woman was shown in the other presentation. In the remaining 46 photos (23 sets), we found two different photos where the same men were accompanied by overweight women in one photo and by thin women in the other. Two independent judges rated the 64 accompanying women on a 7-point fat–fit scale. The correlation of their ratings was $r(64) = .86$, $p < .01$. The overweight women were rated as significantly less fit (more fat) than the thin women, $M(32) = 1.80$, $SD = 0.63$ vs. $M(32) = 5.48$, $SD = 0.98$, $F(1, 62) = 319.86$, $p < .01$, $\eta^2 = .84$.

Participants rated all 32 men in the span of the first 45 photos presented. Sixteen were randomly chosen to be presented with overweight women, and the other 16 were presented with thin women. During the second 45 photos, participants re-rated the same 32 men, this time depicted with a thin woman if they had been previously depicted with an overweight woman or with an overweight woman if they had been previously depicted with a thin woman. A minimum of 45 intervening photos were rated between the first time participants rated a specific man and the second time they rated him. The 26 filler photographs were interspersed among the 90 photos. For all of these filler photos, participants were required to rate the attractiveness of women.

Affective Misattribution Procedure. After they had rated the 90 “family” photos, participants were told that they would now be switching to an unrelated task. In all three studies, we measured implicit stigma-relevant attitudes using adaptations of the Affective Misattribution Procedure (AMP; Payne, Burkley, & Stokes, 2008; Payne et al., 2005). In the AMP used in Study 1, participants were told that their task was to rate the visual pleasantness of a series of Chinese characters or pictographs. They were told that each pictograph would be presented for only 1 second on the computer screen and that they should make their ratings as quickly as they could. Ratings were to be made on an answer sheet using the following scale: $-3$ (very unpleasant), $-2$ (unpleasant), $-1$ (slightly unpleasant), 1 (slightly pleasant), 2 (pleasant), and 3 (very pleasant). Although participants in the original AMP (Payne et al., 2005) made binary unpleasant/pleasant choices by pressing computer keys, subsequent versions of the AMP (Payne et al., 2008) have used rating scales similar to those used here with the midpoint (0) eliminated. This rating procedure made participants’ responses forced choices (i.e., the pictograph was rated as either unpleasant or pleasant) but allowed some gradations of their feelings. Participants were told that because each pictograph was to be presented for only 1 second, a signal slide would precede each pictograph slide. These signal slides were described as “real-life photographs” that were to serve as warnings that a Chinese pictograph was about to appear in 1 second. The logic of the AMP is simple: the photo primes affect that influences the rating of the pictograph. This basic priming effect has been shown to be robust across varying time intervals used in the presentations of the primes and the pictographs (including the time intervals used in these studies).

In the Payne et al. (2005) procedure, a black and white “noise” mask appeared after the pictograph and signaled participants to make their ratings. In the subsequent Payne et al. (2008) version of the AMP, the “noise” mask was accompanied by an actual rating scale at the bottom of the screen. In our adaptation, we eliminated the mask slide and simply presented the rating scale along with a number indicating which pictograph was being rated. This facilitated participants’ use of the answer sheet to record their ratings. The basic sequence of slides is graphically represented in Figure 1.

Figure 1. Representative stimuli used in the Affective Misattribution Procedure (AMP) for Studies 1 and 2.

Following Payne’s instructions, participants were directed: “Remember that the real-life images just serve as warning signals. Try not to let them influence your judgments of the Chinese pictographs.” According to Payne and his colleagues, instructing participants not to be influenced by the photos “sets intentional response strategies in opposition to the automatic influence of the primes” (Payne et al., 2008, p. 18). Thus, this procedure helps to ensure that the AMP measures implicit attitudes and not explicit attitudes.

In selecting the signal photos for this AMP, we chose color photographs of 30 women taken from Internet sites advertising commercial weight loss programs. We selected before and after photos of women showing dramatic weight differences. Preceding each of the first 30 Chinese pictographs was a photo of one of these women. We randomly chose 15 before (overweight) photos and 15 after (thin) photos to be shown in the first 30 trials. The alternate photos of the same women preceded each of the next 30 Chinese pictographs in the same order. So, participants saw 30 intervening photos before seeing the same woman again. Three independent judges rated the 60 photos on a 6-point fat–fit scale. The intercorrelations of their ratings ranged from $r(60) = .92$, $p < .01$ to $r(60) = .96$, $p < .01$. These pilot ratings indicated that women in the before photos were rated as significantly less fit (more fat) than the same women in the after photos, $M(30) = 1.84$, $SD = 0.67$ vs. $M(30) = 6.17$, $SD = 0.66$, $F(1, 59) = 280.22$, $p < .01$, $\eta^2 = .92$.

As expected, participants in the main study generally rated the pictographs that followed photos of overweight women less positively than those that followed photos of thin women: overweight $M(77) = 0.11$, $SD = 0.79$ vs. thin $M(77) = 0.60$, $SD = 0.57$, $F(1, 76) = 33.38$, $p < .01$, $\eta^2 = .31$. This finding indicates a general implicit bias against overweight women. We examined the reli-
ability of the AMP ratings as an index of implicit weight-related attitudes using a series of 30 difference scores: The ratings of the 30 pictographs following women’s photos before weight loss were subtracted from the ratings of the 30 pictographs following their photos after weight loss. This index of reliability demonstrated adequate internal consistency (α = .79). An average of these difference scores was computed as an index of implicit attitudes.

Explicit measures. Immediately following the AMP, participants were asked to make ratings on feeling thermometers of their attitudes about various social groups. Included in the list of groups were fat women and fat men. The fat women and fat men feeling thermometers were positively correlated, r(77) = .85, p = .001. We averaged these two thermometer ratings in order to obtain a stable index of explicit weight-related attitudes. Subsequently, participants completed a second explicit attitude measure, a 13-item weight-related attitude scale (α = .81; Crandall, 1994).

Debriefing. By the time participants had completed the explicit measures, most had guessed that the research had something to do with weight-related attitudes. None guessed the significance of rating the family photos or the purpose of the AMP.

Results

The spread of stigma. We first examined evidence for the basic stigma-by-association effect. For each participant, we initially centered the 64 attractiveness ratings by subtracting individual ratings from each participant’s mean and dividing by the standard deviation. Both the attractiveness ratings of our 32 men in the presence of overweight relatives and their ratings in the presence of thin relatives proved to be internally consistent (α = .96 and α = .96, respectively). Hence, we computed mean ratings in the overweight and thin companion conditions. When we compared these indices, we found that participants rated men depicted with overweight relatives as less attractive than the same men depicted with thin relatives: overweight M(77) = −0.10, SD = 0.09 vs. thin M(77) = 0.10, SD = 0.09, F(1, 76) = 85.84, p < .01, η² = .53. Thus, ratings of the attractiveness of the men in our photos showed an overall stigma-by-association effect: When shown with an overweight female relative, a man was rated as less attractive than when shown with a thin female relative.²

Moderation. We next turned to an examination of the potential moderating influence of our attitude measures upon the stigma-by-association effect. Implicit weight-related attitudes based upon the AMP ratings were significantly correlated with the explicit weight-related attitude measures based upon the feeling thermometers, r(77) = .24, p < .01, but not the explicit attitude measure based upon the Crandall Anti-Fat Attitude scale, r(77) = .14, p = .24. These two explicit indices were significantly correlated with each other, r(77) = .41, p < .01.

Following the procedures outlined in Judd, Kenny, and McClelland (2001), we examined the potential role of each of the weight-related attitude measures as a potential moderator of the relationship between the independent variable (overweight vs. thin relatives) and the extent to which participants rated the men as attractive. The AMP scores, the feeling thermometer index, and the Crandall scale were all centered for this analysis. In essence, moderation for a repeated-measures design such as this one is indicated by computing a difference score between the conditions where men were accompanied by an overweight relative and the conditions where they were accompanied by a thinner relative and seeing whether the moderator predicts that difference. We tested each potential moderator variable individually.³ The implicit attitude variable based upon the AMP and the explicit attitude variable based upon the feeling thermometers both proved to be significant moderators, $ΔR^2 = .06, \Delta F(1, 73) = 4.75, p = .03, β = .24, t(70) = 2.18, p = .03$ and $ΔR^2 = .06, \Delta F(1, 73) = 4.36, p = .04, β = -.24, t(70) = 2.09, p = .04$, respectively. The simple correlation between the thin/overweight difference score and the AMP index was statistically significant ($r = -.28, p < .02$). The simple correlation between the thin/overweight difference score and the explicit attitude measure based upon feeling thermometers fell just short of significance ($r = .21, p = .06$). An analysis of the explicit attitude variable based upon the Crandall (1994) scale did not show evidence of moderation, $ΔR^2 = .01, \Delta F(1, 73) = 0.89, p = .35, β = .11, t(73) = 0.94, p = .35$. This

² The same results were found when we analyzed attractiveness ratings from only those replications where we used the same photo of a man sandwiched between an overweight and a thin woman. To create separate overweight and thin relative photos, we cropped the photos such that the man was shown in one presentation with the overweight woman and in the other with the thin woman. Still, the men were rated as less attractive when depicted with the overweight relatives than with the thin relatives: overweight $M(77) = -0.03, SD = 0.25$ vs. thin $M(77) = 0.04, SD = 0.26, F(1, 76) = 6.33, p = .014, \eta^2 = .08$.

³ Preliminary analyses conducted in all three studies examined the correlations between some demographic variables, such as age, gender, and educational level in college, and the other variables of interest. Age and gender did not correlate with any other variables of interest in any study. Educational level (i.e., freshman–senior), on the other hand, was correlated with the index of stigma by association in Study 2 and with explicit attitude variables in Study 3. Educational level was also marginally correlated with explicit attitudes based upon feeling thermometers in Study 1, r(77) = −.19, p = .09. Inclusion of educational level as a covariate control proved to enhance the moderation relationships reported in Studies 1 and 2. To achieve consistency in analyses across all studies, we included educational level as a covariate control in the moderation analyses reported across all three studies. We also controlled for education level in all of the simple correlations we reported. Classic research in social psychology has found that the socialization experiences that students have in college are important for a variety of social/political attitudes (Newcomb, 1942). It is not too surprising that college educational level would correlate with how students might react to stigma or to people associated with stigmatized persons.

⁴ The attractiveness difference score index (subtracting the average attractiveness ratings of the targets when they had overweight companions from when they had thin companions) proved to be more strongly correlated to the AMP index or the explicit attitude index based upon feeling thermometers than to either of the components of this difference score index: AMP index/overweight companion, average $r = -2.1, p < .07$; AMP index/thin companion, average $r = -1.14, p = .24$; explicit attitude index/overweight companion, average $r = .18, p = .12$; and explicit attitude index/thin companion, average $r = -1.2, p = .29$. Although none of these correlations are statistically significant, the correlations are important in that they show that the relationships of the implicit and explicit attitude measures to the attractiveness difference scores are not primarily driven by connections to the attractiveness of the targets with thin companions (a question posed by one of our reviewers). The attractiveness difference scores seem to represent a relative bias against people with overweight versus thin companions, not merely an artifact of how our participants reacted to the thin companions.
null finding replicates what Hebl and Mannix (2003) reported using the Crandall scale. Simultaneous regression using both the implicit AMP-based attitude and the explicit feeling thermometer attitude indices as predictor variables failed to show that one of these variables is superior to the other in accounting for unique variance in attractiveness ratings. When tested in the same equation, the overall equation was significant, but both the implicit and the explicit attitude measures dropped just short of significance, $\Delta R^2 = .10$, $\Delta F(1, 72) = 3.98$, $p = .02$, $\beta = .21$, $t(72) = 1.86$, $p = .07$ and $\beta = -.20$, $t(72) = 1.76$, $p = .08$, respectively.

Discussion of Study 1

Study 1 showed a clear stigma-by-association effect. When men were photographed in the company of overweight female relatives, they were rated as less attractive than when photographed in the company of thinner relatives. Implicit attitudes and explicit attitudes based upon feeling thermometers moderated this effect such that the stigma-by-association effect was magnified among participants who held stronger implicit or explicit weight-related attitudes. Thus, when a meaningful relationship exists between someone and a stigmatized person, both spontaneous affective reactions to the stigma (as indexed by implicit attitudes) and more deliberative reactions to the stigma (as indexed by explicit attitudes) seem to play moderating roles in stigma-by-association effects. Our other measure of explicit attitudes, the Anti-Fat Attitudes scale, failed to serve as a moderator of the stigma-by-association effect. A possible reason for the inferior performance of the Crandall scale as a moderator might be its relative complexity as compared to a simple feeling thermometer. Factor analyses showed that this scale has a three factor structure (Crandall, 1994). Two of these factors, fear of becoming fat and blaming fat people for their conditions, seem less directly related to attitudes toward people who are overweight. Analysis using just items from the third factor (dislike of fat people) failed to improve the performance of the scale as a moderator.

Study 2: Meaningful Relationships vs. Coincidental Companions

We theorize that both implicit and explicit attitude measures moderated the stigma-by-association effect in Study 1 because the men who were rated had both simple associative and meaningful relationships with their female companions. By a simple associative relationship, we mean that the photographs simply documented that the men and women had been in close spatial/temporal proximity sometime in the past. By a meaningful relationship, we mean that the men and women were depicted as members of a recognized social category, in this case, a family. Stigma by association can be driven by both or either of these types of connections.

When two people, one stigmatized and the other not, are encountered together—even if their co-occurrence in the same spatial/temporal setting is purely coincidental—spontaneous reactions to the stigmatized person may become associated with the previously nonstigmatized person. In other words, purely associative, implicit anti-stigma attitudes could drive a stigma-by-association effect. On the other hand, when people are known to be connected by formal social structures such as families, a variety of deliberative inferential processes could be brought into play. For example, people might infer that a man who is the spouse of an overweight woman is inferior in some way. Inferences of suspected inferiority might be especially likely by people who consciously regard the overweight woman with disdain (e.g., “He wouldn’t be married to an overweight woman if he had alternatives”).

In the second study in this series, we replicated Study 1 and manipulated the nature of the relationships of the evaluated men with their stigmatized companions. Once again, we asked participants to judge the attractiveness of the same 32 men under conditions where their companions were either overweight or thin. Participants were randomly assigned to one of two experimental conditions. In the simple association condition, participants were told that the photographs were random photos of unrelated people taken from the Internet who just happened to be photographed together. To reinforce this cover story, we selected 36 filler photos of street scenes and festivals depicting people who seemed to be unrelated. These photos were interspersed between the photos that were used in the overweight/thin companion manipulation in Study 1. In the meaningful relationship condition, we used the same instructions that were used in Study 1: Participants were told that the photos depicted family members. Filler photos depicted actual family groups to reinforce this cover story. Some showed parents and children. Others showed extended families. Our prediction was that implicit attitudes would moderate the devaluation of companions of stigmatized persons across both conditions. We also predicted that explicit attitudes would serve as moderators only in the meaningful relationship condition, where participants were led to believe that the photographs depicted family members.

Method

Participants. One hundred and seventy-seven women, 30 men, and two people not identifying their gender volunteered to participate in this research. Undergraduates received extra credit in introductory psychology classes in exchange for participation. The median age was 19 years. Eighty percent described themselves as White/Non-Hispanic, and the rest were scattered across various racial/ethnic groups. One participant was eliminated from the data analyses because he spoke Chinese. Four were eliminated because they had been in previous studies that had used similar methods.

Procedures. All procedures and measures were identical to those used in Study 1 with three exceptions: In the simple association condition, the initial instructions described the people in the photos as unrelated to one another. Participants were thus instructed: “The purpose of this research is to examine the physical attractiveness of people in naturalistic photos. You will see a series of photos of people taken from public Internet sites. Photos were taken at various social gatherings such as festivals, parties, weddings, receptions, etc. None of these people are related to one another. Most are just people who happened to be photographed together at a social gathering.” In the meaningful relationship condition, the instructions were identical to those used in the first experiment. The people in the photos were described as family members. In addition, the filler photos in the simple association condition depicted street scenes and other photos intended to convey coincidental social encounters. In contrast, the filler photos in the meaningful association condition depicted actual family
photos where people seemed obviously related. As in Study 1, participants were asked to rate the attractiveness of women in all of these filler photos.

Study 1 found that both implicit and explicit attitudes served as moderators when the relationships were meaningful (family). In that study, participants viewed each photo for a total of 6 seconds. In the current study, we extended the viewing time in the meaningful-relationships condition to 8 seconds to ensure that deliberative processing had sufficient time to occur. Photos appeared for 4 seconds prior to the red oval indicating whom to rate. Then the screen with the red oval appeared for 4 additional seconds. Although such a short time interval would seem sufficient for reflexive processes to take place, it would seem to impede deliberative processes. Our prediction was that our manipulation would have no effect upon the moderating role of implicit weight-related attitudes because reflexive processes are presumed to influence the spread of stigma no matter what the nature of the relationship and are relatively impervious to time constraints. On the other hand, we predicted that explicit weight-related attitudes would play a moderating role in the spread of stigma only in the meaningful-relationships condition, where the bonds of kinship were present and participants had time to consider them.

Results and Discussion of Study 2

As found in Study 1, when men were photographed with overweight women they were rated as less attractive than when they were photographed with thinner women: overweight $M(187) = -0.03, SD = 0.08$ vs. thin $M(187) = 0.03, SD = 0.08$, $F(1, 185) = 46.62, p < .01, \eta^2 = .20$. Neither the main effect of the relationship manipulation nor the interaction of this manipulation with the weight status of the companion was significant. Thus, stigma by association was evident across both of the relationship conditions.

One criterion for conducting moderation analyses in this context is to first demonstrate that the potential moderators were not affected by the manipulation (Baron & Kenny, 1986). Preliminary analyses revealed that neither the AMP measure of implicit attitudes nor the feeling thermometer measure of explicit attitudes was affected by the manipulation of the relationship between the rated men and their female companions ($Fs < 1$). However, the Crandall scale was reactive to the manipulation and therefore will not be considered as a potential moderator, $F(1, 186) = 5.19, p = .02, \eta^2 = .03$.

Moderation analyses showed that implicit weight-related attitudes, based upon the AMP ($r = .79$), served as a significant moderator of the noted stigma-by-association effect, $\Delta R^2 = .02$, $\Delta F(1, 182) = 4.24, p = .04, \eta^2 = .05$. The moderating effect of the AMP did not interact with the relationship manipulation, $\Delta R^2 < .01, \Delta F(1, 180) = 0.62, p = .43, \eta^2 = .006, r(180) = -0.19, p = .31$. A comparison of the simple correlations (controlling for educational level) between the thin/overweight difference score and the AMP index across the two conditions failed to show a significant difference ($z = 0.65, p = .52$). The overall correlation between the thin/overweight difference score and the AMP index, collapsing across conditions, was significant ($r = .17, p < .02$). Thus, participants with negative implicit weight-related attitudes devalued the companions of overweight women regardless of whether the relationship was coincidental or meaningful.

On the other hand, our measure of explicit attitudes (computed by averaging fat women and fat men feeling thermometers), $r(188) = .69, p < .01$, played a moderating role only in the meaningful-relationships condition. That is, the relationship of explicit stigma-relevant attitudes to the stigma-by-association effect was qualified by the manipulation of relationship type, $\Delta R^2 = .03, \Delta F(1, 180) = 6.08, p = .02, \beta = -.55, r(180) = -2.47, p = .02$. The simple correlation between the thin/overweight difference score and the explicit attitude index in the meaningful-relationships condition was significantly different from this correlation in the coincidental-relationships condition ($r = -.29, p < .01$ vs. $r = .05, p = .61$, respectively; $z = 2.28, p < .03$). As predicted, only in the meaningful-relationships conditions did explicit attitudes moderate stigma-by-association effects. As depicted in Figure 2, under conditions where participants believed that they were viewing photos of family members (the dashed line in Figure 2), participants who held less positive explicit weight-related attitudes rated men as less attractive when they had overweight as compared to thin companions. In other words, more negative explicit stigma-related attitudes predicted more stigma by association when participants were told that the photos depicted people in meaningful relationships. In the simple association condition (the solid line in Figure 2), explicit weight-related attitudes made no difference. The same relationships held when both moderators were tested in the same regression equation.

In summary, when we look at the results across Studies 1 and 2, we see that implicit anti-stigma attitudes moderated stigma by association both when meaningful relationships were present (i.e., the people were depicted as family members) and when only simple associative relationships were present (i.e., the people were depicted as coincidentally photographed together). On the other hand, explicit attitudes moderated stigma by association only when meaningful relationships were present. In theory, meaningful relationships promote thoughts about the implications of relationships and bring into play consciously held attitudes about the stigma. Such formal connections do not negate the possible impact of stigma spreading through a more purely associative process. Formal connections such as kinship simply allow a possible rationale for consciously thinking that stigma should also apply to those who are meaningfully connected to stigmatized persons. Hence, meaningful connections make it “reasonable” to assume that some aspect of a stigma is somehow shared among companions. Accordingly, meaningful connections may be sufficient but not necessary for stigma spread.

Study 3: Coincidental Black Companions

Our primary goals in the third study were to replicate the stigma-by-association effect with a qualitatively different stigma and to examine once again roles of both explicit and implicit attitudes as possible moderators of this effect. We chose race as a
stigma for this investigation—what Goffman called a tribal stigma (Goffman, 1963; Howarth, 2006; Katz, Glass, Lucido, & Farber, 1979; Wailoo, 2006). In particular, we compared evaluations of a White man who was associated with either a Black man or another White man. Research has shown that White Americans have automatic physiological threat reactions to Black men (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001; Mendes, Blascovich, Lickel, & Hunter, 2002). Also, stigma-by-association effects sometimes emerge when White perceivers’ react to Whites who are meaningfully associated with Blacks (as in marital relationships). For example, Lewandowski and Jackson (2001) found that White men married to Black women were perceived by White participants to be less competent and professionally successful than White men married to White women. Instead of examining stigma by association in such meaningful relationships, in the current study we chose to focus upon a setting where White and Black strangers were coincidental companions—they just happened to be photographed together. Because this was a simple associative relationship, we predicted that only implicit and not explicit attitudes would moderate any stigma-by-association effect.

As in Studies 1 and 2, we deployed feeling thermometers and some standard Likert-type scales as measures of explicit racial attitudes (Katz & Hass, 1988). We also measured implicit racial attitudes with the AMP (Payne et al., 2005). In Study 3, we tried to compensate for a possible methodological limitation of Studies 1 and 2. In the first two studies, the assessment of stigma by association was structurally similar to our measurement of implicit stigma-relevant attitudes. Both procedures involved the pairing of the stigma with a series of neutral stimuli and measured the carryover of devaluation to the neutral stimuli (either persons or Chinese symbols). These structural similarities in procedures might have enhanced the relationship between our stigma-by-association measure and our implicit attitude measure because of shared method variance. In Study 3, we deployed a method of measuring stigma by association that avoided this structural similarity. Our procedures were modeled after those used in Hebl and Mannix (2003; Study 1). Participants read a job application file of a White man who was coincidentally associated with either a Black or a White man in a photo contained in the file (a between-participants manipulation). After reading the file, they evaluated the job candidate’s qualifications on a set of Likert-type rating scales. Thus, we assessed stigma by association by comparing the evaluation of a White candidate in a condition where he was companioned with a Black man to a condition where he was companioned with a White man. By using a between-participants manipulation of stigma, we also diminished any possibility that participants might be sensitized to what was being manipulated.

Method

Participants. One hundred and eighty-four undergraduates (the median age was 19 years) volunteered to participate in this study in exchange for extra credit in psychology classes. Data were collected in small group sessions in a classroom setting with four to 18 participants in each session. Data from eight Black participants were excluded from the analyses. Of the 42 male and 134
female participants whose data were included in the analyses, no one indicated any knowledge of the Chinese language.

**Procedure.** The basic procedures were modeled after those described in Hebl and Mannix (2003). Participants were asked to review the application folder of a man who had been selected as a potential candidate for a job in the human resources division of an information technology company. Participants were told that the individual was one of three applicants who had been invited to interview with the company. Included in the folder was a copy of the job description, the résumé of the candidate, an application letter from the candidate, and two letters of reference. The folder materials depicted a candidate who seemed well qualified for the position. Participants were led to believe that these materials were part of an actual job application and that the candidate had undergone an afternoon of interviewing with company officials followed by a social reception involving other employees in the office where the candidate might work. The folder also included a color photograph of the candidate said to be taken at the reception.

**Stigma manipulation.** Participants were randomly assigned to one of two conditions. Half of the applicant folders contained a photograph of the job candidate seated next to an African American man at the reception. Paper-clipped to the photo was a note stating “Michael Morris (on right) at reception with HR employee Rasheed Johnson.” The other applicant folders were identical except that the photograph and accompanying note depicted the job applicant seated next to a European American employee (Richard Johnson). Two African American and two European American men in their mid-twenties, dressed in business casual attire, served as models for these photographs. In the four mixed-race photos used, one of the European American men was depicted as the job candidate and sat with one of the African American men. In the two same-race photos used, one of the European American men was depicted as the job candidate and the other as the accompanying employee. Each mixed-race photo was used approximately twenty-five percent of the time in the Black association condition. Each same-race photo was used approximately fifty percent of the time in the White association condition. Figure 3 shows two of the photographs used in this manipulation. After viewing the folders for 12 minutes, participants made a series of ratings about their impressions of the job applicant modeled after those used in Hebl and Mannix (2003). Participants rated five items concerning the applicant’s interpersonal skills (the extent to which they found him as likable, sociable, interpersonally skilled, enthusiastic, and driven) and five items concerning his professional qualities (professional ethics, endurance and perseverance, applicant/corporation match, earning potential and qualification). Participants also were asked to rate the extent to which they would recommend hiring the applicant (Roehling, 1999). Ratings were made on 1–9 Likert-type scales. Finally, participants were asked to estimate the annual salary they would expect the applicant to make were he to successfully apply to a different job.

**AMP.** Immediately following their ratings of the job applicant, participants were asked to take part in a “completely different” task. For this version of the AMP, 60 photos of young (twenty-something) men with neutral facial expressions were harvested from various public Internet sites to be used as “signal photos.” Thirty were of African American men and 30 were of European American men. The photos were cropped with an oval tool so that only the men’s heads appeared on the screen. Photographs were randomly paired with Chinese pictographs. Conceptually replicating the research conducted by Payne and his colleagues, participants generally rated the pictographs that followed photos of Black men less positively than those that followed photos of White men: Black \(M(176) = 0.19, SD = 0.85\) vs. White \(M(176) = 0.41, SD = 0.75\), \(F(1, 175) = 16.06, p < .01, \eta^2 = .08\). Thus, our participants demonstrated an anti-Black (relative to White) implicit attitude. In examining the reliability of this AMP, we followed the procedures used by Payne and his colleagues (Payne et al., 2005). We paired each of the pictographs that had been preceded by a photo of a White man with a randomly selected pictograph that had been preceded by a photo of a Black man. We then computed 30 difference scores and examined the internal consistency of these difference scores. The reliability of the AMP computed in this fashion proved to be adequate (\(\alpha = .75\)). An implicit attitude index was formed by averaging these difference scores.\(^5\)

**Explicit measures.** After the AMP, participants were asked to make ratings on feeling thermometers of their attitudes about various social groups. Included in the list of groups were African American men and European American men. Participants generally rated Black men less favorably than White men: Black \(M(162) = 69.41, SD = 19.05\) vs. White \(M(162) = 83.02, SD = 15.26, F(1, 162) = 96.04, p > .01, \eta^2 = .37\). We computed one measure of explicit racial attitudes by subtracting the Black from the White thermometers. Subsequently, participants were asked to indicate their racial attitudes using pro-Black (\(\alpha = .73\)) and anti-Black (\(\alpha = .78\)) attitude scales devised by Katz and Hass (1988). In contrast to the implicit attitudes and the feeling thermometers, there was more endorsement of pro-Black attitudes than anti-Black attitudes: pro-Black \(M(162) = 5.42, SD = 1.19\) vs. anti-Black \(M(162) = 4.72, SD = 1.30, F(1, 161) = 21.32, p < .01, \eta^2 = .12\). As with the other attitude measure, a difference score was computed with these to scales to simplify analyses. Though the correlations were small, implicit anti-Black attitudes based upon the AMP ratings were significantly correlated with both the explicit anti-Black attitudes based upon the feeling thermometers, \(r(162) = .24, p < .01\), and the explicit anti-Black attitudes based upon the Katz and Hass (1988) Likert scales, \(r(162) = .23, p < .01\). These two explicit indices were also significantly correlated with each other, \(r(162) = .42, p < .01\).

**Manipulation checks and debriefing.** After all of the other measures had been completed, participants were asked if they recalled the race of the person sitting beside the applicant in the photograph. All were able to do so. In debriefing, most participants said that they guessed that the research had something to do with racial attitudes by the time they finished, but none professed as to having guessed that race was a topic of interest in the evaluations of the job candidates. Also, none guessed the purpose of the AMP.

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\(^5\) A visual inspection of the distributions of some of the AMP index and some of the other key variables in Study 3 revealed that there might be some outliers for some of the values. We identified outliers using the exploratory data analyses described by Velleman and Hoaglin (2004) and eliminated them from all of the analyses reported here. A total of 14 participants were excluded from all analyses for this reason. It should be noted that inclusion of these outliers did not substantively change the results of any of these analyses.
Results

Stigma by association. We combined the five interpersonal skills ratings into a single average ($\alpha = .78$) and the five professional qualities items into a single average ($\alpha = .80$). Following Hebl and Mannix (2003), we considered hiring recommendation ratings as a single-item index. We converted these three ratings and the estimated annual earnings into $z$ scores and subjected these centered ratings to a multivariate analysis of variance where the race of the associated employee was the independent variable. This analysis revealed a multivariate main effect reflecting the predicted stigma-by-association effect, $\Lambda = .94$, $F(4, 150) = 2.48$, $p < .05$. Although all of the means showed the predicted pattern of less positive ratings of the candidate who was seen seated next to the Black employee than the candidate seated next to the White employee, the univariate analyses showed that this effect was statistically significant only in the analysis of the hiring recommendation ratings: Black $M(78) = -0.18$, $SD = 0.89$ vs. White $M(78) = 0.17$, $SD = 0.91$, $F(1, 153) = 5.91$, $p < .02$, $\eta^2 = .04$. 

Figure 3. Photographs used in the manipulation of race stigma in Study 3.

Job candidate (right) depicted with White employee.

Job candidate (right) depicted with Black employee.
Also, the univariate analysis of the interpersonal skills ratings fell just shy of significance: Black M(78) = −0.15, SD = 1.01 vs. White M(78) = 0.12, SD = 0.96, F(1, 153) = 3.17, p < .08, η² = .02. Thus, these analyses demonstrate a stigma-by-association effect, such that a coincidental association with a Black man led to less positive ratings of a White male job candidate.

**Moderation.** An important qualification for a variable to be considered a moderator in a between-participants design is that it cannot be correlated with the independent variable (Baron & Kenny, 1986). Preliminary analyses verified that none of the attitude measures were affected by the manipulation of the race of the companion employee in the current study: implicit anti-Black attitudes, F(1, 158) = 1.20, p = .18, η² = .01; explicit feeling thermometer attitudes, F(1, 158) = 0.08, p = .75, η² < .01; explicit Likert scale attitudes, F(1, 158) = 0.015, p = .69, η² < .01.

We tested the hypothesis that each of our attitude measures might moderate the effect of the companion’s race manipulation upon the hiring recommendation using a procedure described by Aiken and West (1991). In particular, we conducted a series of two-step hierarchical regression analyses. On a first step (following the entry of the covariate), hiring recommendations were regressed on the predictor variable (the experimental manipulation, coded 1 for Black and −1 for White conditions) and the moderator variable (attitudes measured by the AMP, the feeling thermometer, or the Likert-type scales—all centered for these analyses). In a second step, the Predictor × Moderator interaction term was added. When the Black/White manipulation and implicit attitudes were entered in the first step in the regression equation, only the Black/White manipulation was a significant predictor, β = −.19, t(1,157) = −2.36, overall ΔR² = .04, ΔF(2, 157) = 3.34, p < .04. Supporting our moderation hypothesis, when entered in the second step, the interaction term received a significant and negative regression weight, β = −.16, t(156) = −2.00, p < .05, ΔR² = .02, ΔF(1, 156) = 4.02, p < .05. A comparison of the simple correlations (controlling for educational level) across the two conditions (Black companion r = −.25 vs. White companion r = .15) showed a significant difference (z = 2.47, p < .02). This difference in correlations indicates that the primary moderation effect of implicit attitudes occurred in the Black companion condition. Thus, our prediction that implicit racial attitudes would moderate the stigma-by-association effect was confirmed.

When we conducted parallel analyses testing the feeling thermometer and Likert-type scale explicit attitude measures as potential moderators, neither of these measures proved to be a significant moderator of the race manipulation, β = .03, t(156) = 0.43, p = .67, ΔR² < .01, ΔF(1, 156) = 0.19, p = .67 and β = .01, t(156) = 0.22, p = .83, ΔR² < .01, ΔF(1, 156) = 0.05, p = .83, respectively. Thus, the stigma-by-association effect was moderated by implicit stigma-relevant attitudes, but there was no hint of moderation by explicit attitudes.

**Discussion of Study 3**

Study 3 provides further evidence that a stigma-by-association effect can emerge from a simple association created by mere proximity. It also demonstrates this effect with a different kind of stigma, a tribal stigma based on race. When White job candidates were seen in a photograph next to a Black man, they were rated less positively than when they were seen next to a White man. Implicit attitudes moderated this effect. Participants with stronger implicit anti-Black attitudes gave lower hiring recommendations to candidates pictured with Black companions than to candidates pictured with White companions. In contrast, those with weaker implicit anti-Black attitudes did not discriminate in this manner. In other words, when participants had spontaneous affective reactions to a stigma, these reactions were more likely to spread to an arbitrarily associated person.

We tried measuring explicit attitudes in two different ways, using feeling thermometers and using Likert-type scales. In neither case did explicit attitudes serve as moderators of the stigma-by-association effect. Even though one of our measures of explicit attitudes was structurally similar to our measure of stigma by association (i.e., both involved Likert-type scales), it still failed to moderate the noted stigma-by-association effect. We theorize that this lack of moderation is due to the type of relationship between the job candidate and the stigmatized companion: The relationship was a purely coincidental one, not a meaningful one. On the other hand, the relationship between implicit attitudes and stigma by association cannot be attributed to some artifact of the structure of measurement because these two constructs were measured in structurally dissimilar ways. This pattern of findings supports our theory that only implicit attitudes and not explicit attitudes will moderate stigma by association when a purely coincidental (or associative) relationship exists.

**General Discussion**

Our research demonstrates that stigma by association is a highly robust phenomenon. We found evidence for stigma-by-association effects in studies involving two different types of stigmas: abominations of the body and tribal stigmas. Furthermore, we found such effects when the nature of the association was meaningful and when it was simply coincidental. Across all of these studies, implicit stigma-relevant attitudes also proved to be robust moderators of the stigma-by-association effect. On the other hand, explicit stigma-relevant attitudes proved to have a more limited moderating capacity. Our confidence in these findings is bolstered by the fact that we measured explicit attitudes in two different ways in each study. Also, across these studies we measured explicit attitudes in ways that either matched or diverged structurally from our measures of stigma by association. Despite these experimental refinements, explicit attitudes moderated the stigma-by-association effect only when the relationship between the stigmatized person and the companion was a meaningful one (Study 1 and the meaningful relationship condition of Study 2). This pattern of results supports our theoretical position that explicit stigma-relevant attitudes are linked to deliberative processes. Such deliberative processes are more likely to be activated when a formal or meaningful relationship between a stimulus person and a stigmatized companion is perceived (i.e., they are together for a reason). Meaningful social relationships bring to mind a series of beliefs and expectations that presumably give rise to deliberative processes, thereby making explicit or consciously held attitudes more relevant.

In Studies 1 and 2, participants devalued the attractiveness of men photographed with overweight women depicted as family members—a meaningful relationship. When participants in Study 2 were told that the same men were unrelated to their overweight
female companions—they just happened to be photographed together—participants still devalued the men’s attractiveness. When the social relationship was meaningful, as in Studies 1 and 2, both implicit and explicit weight-related attitudes moderated the stigma-by-association effect. In contrast, when the social relationship was a simple association, as in the coincidental relationship condition of Study 2, only implicit attitudes moderated the stigma-by-association effect.

In Study 3, participants devalued the degree to which a White man was suitable as a job candidate when he was seen seated next to a Black stranger. Once again, in circumstances where the connection between the nonstigmatized person and the stigmatized person represented a coincidental association, we found that the stigma-by-association effect was moderated by implicit but not by explicit stigma-related attitudes. Participants who evidenced stronger implicit anti-Black attitudes in Study 3 were more likely to devalue the White job applicant coincidentally associated with a Black man.

The devaluation of stigmatized companions was measured explicitly across all studies: We simply asked in Studies 1 and 2 for participants to rate the attractiveness of the companions. In Study 3, we asked participants to rate the companion’s job-related attributes. Interestingly, whereas implicit stigma-related attitudes predicted explicit companion devaluation across all conditions, explicit stigma-related attitudes predicted explicit companion devaluation only when the relationships between the stigmatized person and the companion were depicted as meaningful. These findings suggest that spontaneously activated feelings about stigmas represent a strong influence upon conscious judgments about the companions of stigmatized persons. We might expect an even stronger influence had we measured implicit reactions to the companions.

**Possible Alternative Interpretations**

As detailed above, implicit attitudes proved to be moderators of stigma-by-association effects across all conditions in these studies, whereas explicit attitudes moderated such effects only when there was a meaningful relationship between the persons. An alternative interpretation of the superior role of implicit attitudes as moderators is that the significant relationships between our measures of implicit attitudes and our measures of stigma by association could reflect some common structural similarity in measurement (see Payne et al., 2008). For example, in Studies 1 and 2, the AMP involved making multiple judgments about ambiguous figures preceded by photos of stigma-relevant primes. Our measures of stigma by association in these studies were structurally similar and involved making multiple judgments of neutral people accompanied by stigmatized companions. There was, however, a structural dissimilarity between these stigma-by-association measures and our two types of explicit attitude measures, and this difference might have contributed to the weaker moderating role of explicit attitude measures.

Two findings argue against the above interpretation of our results. First, in Studies 1 and 2, when meaningful relationships existed between stigmatized and neutral persons, we found that both implicit attitudes and explicit attitudes (measured with the feeling thermometers) served as significant moderators of the stigma-by-association effect. So, the structurally dissimilar feeling thermometers also predicted a stigma-by-association effect under theoretically meaningful conditions. Second, our manipulation of the conditions that produced the stigma-by-association effect in Study 3 was qualitatively different from the manipulations we used in the other studies. It involved a between-participants design and a series of judgments about a single individual made with Likert-type scales. On the surface, these judgments appear more structurally similar to our Likert-scale measures of explicit attitudes than to the AMP measure of implicit attitudes. Yet, only implicit attitudes moderated the stigma-by-association effect in Study 3.

Our theory suggests that implicit attitudes toward stigmas are typically negative and that the spontaneous affect generated by a stigmatized person is easily associated with other people who happen to be companions to stigmatized persons. Although there are many factors that might affect the strength of the association between someone and a stigmatized person, mere spatial/temporal proximity seems to be sufficient to produce a stigma-by-association effect. This was illustrated by Studies 2 and 3. In each case, when there were no apparent formal connections between people depicted in our stimulus photographs, stigma by association was nevertheless evident.

Another alternative interpretation of our findings might be that a stigmatized person represents a negative context within which information about a companion is encoded or interpreted. Context effects can be important in the elicitation of implicit racial attitudes. For example, Wittenbrink, Judd, and Park (2001) found that implicit attitudes toward Blacks (measured with the Implicit Association Test) were more negative after viewing a movie about gang violence than a movie about a Black family barbecue. Also, Barden, Maddux, Petty, and Brewer (2004) reported that both implicit and explicit racial attitudes were influenced by the social role contexts in which Black and White people were portrayed. For example, participants responded in an equally positive fashion to Black and White churchgoers but were more negative toward Black than White prisoners. Participants also responded more positively to Black than White factory workers.

The difference between our associative interpretation of the current studies and the context effect interpretation described above seems subtle. Essentially, the context effect interpretation suggests that a neutral person is imbued with a different social meaning in the context of a stigmatized person than in the context of a nonstigmatized person. Such a phenomenon seems similar to what Asch (1946) postulated with regard to a change in meaning about traits in the context of impression formation (i.e., determined means something different when encountered in the context of a warm person as compared to a cold person). Although such a context effect with regard to stigma seems intriguing, it is difficult to imagine how one would separate these two interpretations. In a typical case of stigma by association, a previously neutral person is devalued when perceived in the presence of a stigmatized person. How would we differentiate the “context impact” of the stigmatized person from an associative process relating the stigmatized person to the companion? Even if the companion is encountered with a stigmatized versus nonstigmatized person in one context and then evaluated in a subsequent neutral context, the context effect interpretation and associative explanations seem to make similar predictions about devaluing the companion of the stigmatized person. From our perspective, an associative explanation of our findings seems to be more parsimonious.
Another limitation of the context effect interpretation of our studies is that it does not explain the moderation patterns found across these studies. In contrast, our theory predicts that meaningful social relationships evoke deliberative processes and thereby facilitate a role for explicit stigma-relevant attitudes in the devaluation of a stigmatized person’s companions. Also according to our theory, implicit stigma-relevant attitudes potentially come into play across a variety of possible relationships between stigmatized persons and their companions, even when the connections represent coincidental associations. These complex predictions are clearly derived from our dual process theory of stigma by association. In contrast, it is less clear why a context effect interpretation would make these predictions.

Finally, turning to a possible critique of our interpretations of Study 2, this study employed a compound manipulation. In one condition, participants were told that the people in the photos they saw were coincidental companions and they were given a brief period to judge the attractiveness of the target person in each relevant pair. In the other condition, they were told that the people in the photos were family members and they were given a relatively longer time in making their judgments so as to assure that deliberative processes were possible. As predicted, we found that moderation by explicit attitudes occurred only in the later condition. One critique of this study is that these differences in the moderation patterns could be due to the differences in timing (4 vs. 8 s) instead of the differences in relationships (coincidental companions vs. family members). We cannot rule out that interpretation looking only at the results of Study 2. However, when we examine Study 3, we see a procedure in which the target person and the stigmatized person were described as coincidental companions. Participants in Study 3 were given virtually unlimited time to inspect the single photo and to make their judgments about the companion. Our prediction that only implicit attitudes would serve as moderators of stigma by association in this study was confirmed. Thus, explicit attitudes did not serve as a moderator even when participants made judgments without time pressure. Taken collectively, these findings point to the importance of the relationships between the companions and the stigmatized persons in determining whether or not deliberative processes are evoked.

Related Theories

There are theoretical and empirical parallels between the current studies and studies conducted by Carlson, Skowronski, and their colleagues on spontaneous trait transference (STT; Carlson & Skowronski, 2005). STT is the tendency of perceivers to ascribe traits to informants based upon the behavior the informants describe of others. For example, if George describes Dick as torturing prisoners, there is a tendency to perceive George (in addition to Dick) as cruel. As in our analysis of stigma by association, STT seems to hinge upon simple associations formed between the informant and the traits implied by the behavior described. STT seems to occur when familiar as well as unfamiliar people are informants (Mae, Carlson, & Skowronski, 1999). It also seems to occur under conditions that vary in cognitive load (Skowronski, Carlson, Mae, & Crawford, 1998). Even when participants were told that a behavioral description was randomly assigned to be presented in conjunction with a photo of an unrelated person (i.e., not an informant), there was some evidence for STT (Skowronski et al., 1998). More recently, Carlson and Mae (2007) found that spontaneous impressions of people were affected by trait-related symbols that were coincidentally associated with them. For example, people who were seen in a random pairing with a flag were seen as more patriotic. The underlying psychological processes in these studies seem similar to those at work when people encounter someone who is the coincidental companion of a stigmatized person.

Two findings from Carlson and Skowronski (2005) suggest some interesting future directions for stigma research. First, they found that both positive and negative behaviors produce STT effects. Some research suggests that stigmas can produce both positive and negative reactions simultaneously (i.e., ambivalence) from observers (Hebl & Kleck, 2000; Katz, 1981; Kleck, 1969; Kleck, Ono, & Hastorf, 1966). For example, people might simultaneously feel revulsion and sympathy toward someone who is severely disabled. There is also research suggesting that people who are associated with stigmatized persons are reacted to with some ambivalence. For example, people who date persons with disabilities may be perceived as less intelligent, sociable, and athletic but more trustworthy and nurturing (Goldstein & Johnson, 1997). Future research might assess the conditions under which ambivalent reactions transfer to those associated with the stigmatized and investigate the connections of such reactions to explicit and implicit stigma-relevant attitudes.

Second, Carlson and Skowronski (2005) found that STT effects were specific to the traits evoked by the behavior in question and did not seem to involve some sort of general evaluative halo effect. For example, although people who witness George describing Dick as torturing prisoners might ascribe cruelty to George, they would not also ascribe greediness to George. Some stigma research, in contrast with STT research, suggests that stigmas might evoke more general affective reactions. For example, various different stigmatizing conditions all seem to evoke a general avoidance response (Pryor et al., 2004). Nevertheless, it is still possible that certain specific concepts are more likely to be evoked by certain stigmas. For example, laziness is implicitly related to obesity stigma (Teachman & Brownell, 2001). It seems possible that people associated with an obese person (e.g., family members) would be more likely to be judged as lazy than violent. Whereas violent is evaluatively consistent with lazy, it has a different descriptive meaning and seems unrelated to weight-based stereotypes. Future studies should explore the possible occurrence and parameters of such specificity effects.

The three studies reported in this article described how stigma spreads through meaningful and simple associations from one person to another. Pryor and Reeder (1993) suggested that stigmas may be psychologically represented as an associative network of concept nodes and connecting links. Very powerful stigmas such as HIV disease may evoke strong aversive reactions because they are associatively connected to other stigmas such as homosexuality, drug use, and minority status (Pryor et al., 2004). Such “comorbidity” often exists among stigmas. Recent work by Young, Nussbaum, and Monin (2007) found that people had more negative reactions to persons with a fictitious disease when the disease was potentially contracted through a morally stigmatizing behavior, unprotected sex. Even when the probability of contracting the disease through this means (as opposed to nonstigmatizing means) was described as very low (5%), participants were more likely to
describe persons with the stigma-associated disease as sexually immoral. Their findings revealed a disjunctive fallacy in participants’ estimates of the likelihood that they personally might contract the disease. When the morally stigmatized means of contracting the disease was added to other means, participants actually rated their likelihood of personally contracting the disease as lower. Also, adding unprotected sex to a list of possible means of contracting the disease made participants more reluctant to get tested for the disease. The implication is that people strive to dissociate themselves from stigma, even when it means bending the rules of logic or risking one’s personal health. Thus, concerns about potential stigma by association seem to drive some important health decisions.

Conclusion

The three studies in this article describe how stigma can be spread from one person to another. Family associations represent perhaps the most widely studied basis for stigma-by-association effects. Our research implies that the conscious, deliberative reactions that people have to a stigmatized person as well as their reflexive or automatic reactions to the stigma are both important for the spread of stigma to other family members. Arbitrary associations such as those examined here in the last two studies are ubiquitous and to some extent random in everyday life. People have little control over who might sit next to them in a public place. Yet, even such arbitrary occurrences have the power to mold how people are viewed. Like spontaneous affective jolts, automatic negative reactions to stigmatized persons taint even coincidental companions.

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