

Destigmatization and Its Imbalanced Effects

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ABSTRACT

Destigmatization is an understudied social process. During destigmatization, perceptions of a previously stigmatized trait improve as the stigma recedes. We hypothesize an imbalance in destigmatization effects, such that, during destigmatization, the effects of stigma are stronger for those stigmatized by association than for people directly stigmatized. This occurs because, as social norms change, people correct for their explicit biases toward individuals with the stigmatizing trait, but are not aware of ongoing implicit bias that harms those stigmatized by association. Evidence from two studies – one using archival data on individual employment in an open labor market, and another using experimental data on hireability of job candidates – suggests that in contexts in which conscious prejudice has diminished but nonconscious bias remains, the harmful effects of stigma persist more for associates of stigmatized individuals than for the stigmatized themselves.

Introduction

Stigma is powerful, resulting in significant social and economic disadvantages. Previous studies show measurable adverse effects of stigma in diverse domains of life (Goffman, 1963; Becker, 1963; Jones et al., 1984; Link and Phelan, 2001; Pescosolido et al., 2013; Pescosolido and Martin, 2015). Markets are one such domain: for instance, Tilcsik (2011) showed that job applicants who appear to be gay received significantly lower callback rates from potential employers. Stigma even reaches “innocents” who are merely associated with the stigmatized. For example, corporate misconduct by managers at one firm led customers to avoid interacting with similar firms (Jonsson, Greve, and Fujiwara-Greve, 2009). During the Hollywood Red Scare, co-workers of film artists who were later blacklisted had a lower likelihood of finding employment (Pontikes, Negro and Rao, 2010). In laboratory studies, job applicants who were physically proximate to a stigmatized person were devalued (Hebl and Mannix, 2003).

Previous research has not yet considered how the effects of stigma change when social perceptions evolve and stigma weakens. Such a process, which we call *destigmatization*, is the focus of this paper. Consider persons with unmarried mothers, racial minorities, or people with HIV. Once marginalized, members of these social groups are now more accepted. We argue that the typical process of destigmatization improves social and economic conditions for those directly stigmatized because people *explicitly* correct for their prejudices in light of changing social norms. But stigma effects arising from *implicit* reactions will remain. As we will show, this uneven change results in different effects for persons stigmatized directly or by association, such that, during destigmatization, those with stigma by association suffer greater penalties than those directly stigmatized.

To study these ideas, we identify two hiring contexts that show hallmarks of

destigmatization: a reduction in explicit prejudice but persistent implicit prejudice. One context is historical and studied using observational methods; the other is present-day, and studied using experimental methods. In both cases, our interest is in capturing the relationship between destigmatization and the career outcomes of stigmatized individuals relative to their associates.

Destigmatization is becoming increasingly important as the social standing of discredited groups is addressed via collective action, policy changes, or public education (Lamont, 2018). Our findings suggest that destigmatization is not a straightforward ending of stigma; rather, the social and economic effects of stigma may linger for people whom we are not even aware have been affected by its discriminatory consequences. This is relevant for organizational research on employment, as well as research on intergroup processes, deviance, stereotyping, and inequality more generally (Phelan et al., 2000).

Theory

Direct and Associative Stigma

Goffman (1963) describes stigma as a mark that reduces an individual from “a whole and usual person to a tainted, discounted one” (p. 3). The stigmatized individual is considered unfit for interaction and is excluded from social and economic life (Jones et al., 1984). Stigma is constructed through psychological and sociological processes, encompassing prejudice, stereotyping, discrimination, and social rejection (Link and Phelan, 2001; Pescosolido and Martin, 2015). Stigma develops as a social construction, in which a distinguishing characteristic is identified as a basis for devaluation (Dovidio, Major and Crocker, 2000). Contact with stigmatized persons activates negative stereotypes and interpersonal rejection, leading to social distancing and exclusion (Becker, 1963). This also manifests in market interactions, such as when customers stop transacting with managers stigmatized by bankruptcy (Sutton and Callahan,

1987), or politicians avoid businesses that have been boycotted (McDonnell and Werner, 2016).

The harmful effects of stigma are not limited to those directly marked. Stigma spreads such that someone can suffer negative consequences simply because he or she is linked to a person who bears stigma. Goffman refers to this as courtesy stigma; it is now also described as stigma by association or associative stigma (Pryor et al., 2012). Associative stigma can occur through meaningful relationships, such as family ties, and also through *mere association*, or simple connections of spatial-temporal co-occurrence, such as being seen in the presence of an obese person (Hebl and Mannix, 2003; Penny and Haddock, 2007) or having worked on a project with someone who later is stigmatized (Pontikes et al., 2010).

Two psychological processes control how direct and associative stigma operate (Pryor et al., 2004). The first involves unconscious reactions; that is, automatic and implicit negative affective responses. The second involves conscious reactions that are explicit and deliberate. Both types of reactions result in devaluing and avoiding the stigmatized and their associates. They operate concurrently, but if one is removed the other can persist. Research shows that when there is a meaningful or voluntary relationship between a stigmatized individual and an associate (for instance, relatives or friends), stigma transfers through both explicit and implicit processes. However, when connections are arbitrary (for instance, two people waiting for the same bus), stigma by mere association primarily transfers through implicit processes, without the perceiver's conscious awareness (Pryor et al., 2012). We propose that this dual-process model of stigma transfer has implications for destigmatization.

Destigmatization

What is considered stigmatizing varies over time and place. For example, the stigma against people accused of denying religious beliefs – called “heretics,” “pagans,” or “witches” –

was strong centuries ago, but today is minimal in Western societies. The stigma of having a child out of wedlock is considerably reduced. Stigma around race and ethnicity continues to fade, and the stigma surrounding homosexuality has receded in some countries. Stigma evolves with societal rules, norms, and values (Goffman, 1963; Link and Phelan, 2001; Pescosolido and Martin, 2015).

Destigmatization refers to individual and collective processes that ameliorate harmful effects of stigma. To our knowledge, previous research on this process is limited. Warren (1980) suggested three major modes of destigmatization: professional treatment, individual self-help, and political activism. The first two modes concentrate on reformation of the stigmatized individual, treating societal stigmas as fixed.

In line with the focus of current social theory, our interest centers on the third mode, whereby the social understanding of the stigmatized group changes. Fine (2001; 2012) argues that repairing negative, stigmatized reputations requires modifying accepted norms over time. Destigmatization results from significant “investments” made by outsiders: mobilization of group interests, expert evaluation, and material and political resources. For example, in the domain of public health, Phelan et al. (2000) noted that public education efforts have broadened the social understanding of mental illness, and there is some evidence of more positive public beliefs and attitudes, at least toward less serious illnesses.

This research implies that destigmatization occurs through a path-dependent process, whereby collective mobilization leads to public expressions condemning prejudice that may become internalized. The way this process affects people who were previously disadvantaged by stigma remains less specified. We draw attention to how destigmatization typically unfolds, focusing on the unevenness of changes in explicit compared to implicit attitudes. We suggest this

leads to a counterintuitive imbalance in effects, such that during destigmatization, stigma continues to harm associates more than those directly stigmatized.

Direct and Associative Destigmatization

Research on prejudice provides a useful basis for understanding destigmatization. The experiences of stigma and prejudice are very similar, and include exposure to negative attitudes, structural and interpersonal experiences of discrimination, and violence. Stuber, Meyer and Link (2008) argue that differences between research on stigma and research on prejudice have more to do with different subjects of interest rather than any real conceptual distinction. Similar to the process of removing prejudice, removing stigma requires making adjustments to stereotypical perceptions.

We noted that destigmatization usually starts from collective action and organized initiatives to change formal rules and social norms. These social changes then are assumed to influence individual behaviors. Research shows that both conscious and nonconscious reactions can change in response to social influence (Gawronski and Bodenhausen, 2006), but that implicit reactions are more resistant to change (Gregg, Seibt, and Banaji, 2006), especially in response to knowledge-based reasoning (Gawronski and LeBel, 2008). Based on these studies, we expect that efforts to induce social change will initially lead people to take deliberate steps that counter *explicit* negative reactions to stigma targets – either because they are genuinely concerned with not being discriminatory, or because they do not want to be labeled as prejudiced.

We expect that during a typical process of destigmatization, *implicit* negative reactions will remain for a period of time, even as explicit reactions evolve. Automatic associations are more resistant to change, and when they do change, it is a result of subtle, repeated cultural processes such as systematically seeing stigmatized people being treated as mainstream

(Gawronski and LeBel, 2008). Such processes typically arrive later and require more time.

To summarize, during destigmatization, people make deliberate attempts to correct for stigmatized reactions of which they are aware, but automatic stigma, arising from implicit bias, remains. Over time, the end of destigmatization may follow, such that people will internalize the changed societal rules and norms and reduce their stereotypic reactions – implicit as well as explicit. When stigma is completely lifted, people will not be adversely affected through either automatic or deliberate processes. Our focus is on the destigmatization period – when there is a stronger reduction in implicit as compared to explicit prejudice.

Based on this dual process model, we suggest that during destigmatization, outcomes for those directly stigmatized will improve more than for people stigmatized by association. Our reasoning is as follows: when people encounter a member of the stigmatized group, they may use methods of explicit stereotype reduction or suppression to avoid negative responses that they view as counter to current social norms (Pryor et al., 2004; 2012). For example, people may avoid using derogatory labels about a mentally ill person, or suppress stereotypic thoughts about a member of a racial minority group. Even if perceivers' automatic responses are not changed, their explicit reactions to a once-stigmatized individual will become less negative, if not positive.

However, we reason, when people encounter associates of the stigmatized, this correction will not take place – especially when the stigmatized and associates are connected by non-meaningful relationships. In these cases, negative assessments result from implicit, but not deliberate, reactions, meaning that people are not aware that stigma has spread to mere associates. This means that people are also not aware of the need to revise their attitudes towards

these individuals.¹ These observations lead us to hypothesize that *during destigmatization, stigma will harm those stigmatized by association more than those experiencing stigma directly.*

Our argument is predicated on a scope condition: that during destigmatization there is explicit bias reduction but implicit bias remains. As we describe, these are the conditions for the typical process of destigmatization. It is possible, however, that a process of destigmatization might unfold in an atypical manner, without the described asymmetry between implicit and explicit attitudes. Our theory does not speak to such cases.

Empirical Tests

Overview

Studying destigmatization presents empirical challenges to researchers: defining a specific context and time in which social perceptions start to change, identifying the attenuation of explicit versus implicit negative attitudes, and measuring the weakening effects of stigma. We investigated our hypothesis in two studies that take advantage of conditions in which a stigma has been partially lifted. In both contexts, a stigma known to negatively affect hiring decisions has attenuated somewhat, with explicit prejudices receding more quickly than implicit prejudices. Both studies examined the degree to which destigmatization has imbalanced effects on the likelihood that associates of the stigmatized, relative to directly stigmatized individuals,

¹ This is exacerbated by the fact that during destigmatization, public reform efforts mainly aim to benefit the stigmatized, not their associates. New rules and social norms prevent direct discrimination of the stigmatized, but typically do not encourage changing reactions toward associates.

will be hired.

The commonalities described above between the two studies are crucial for our empirical design. The studies differ in two main ways. First, they take different methodological approaches (Small, 2011). Study 1 used an observational method and examined real-life hiring outcomes, establishing external validity, while Study 2 used an experimental method and hiring intentions, establishing direct causality. Second, the studies tested different stigmas, appropriate to the time and place of data collection, which help establish the generalizability of the effect.

Study 1 used the context of the “Red Scare” in post-World War II Hollywood, during which suspected Communists were blacklisted and prevented from working. We studied the post-blacklist destigmatization period, investigating employment outcomes for the blacklisted (directly stigmatized) compared to co-workers of the blacklisted (mere associates). Study 2 used the present-day destigmatization of physical disability, using an experiment with random assignment to investigate the assessed hireability of job candidates with a visible disability (directly stigmatized) compared to a spatially proximate job candidate (the mere associate). Both studies showed that during destigmatization, the damaging effect of stigma are stronger for associates as compared to targets.

Study 1 – Employment in Hollywood During Destigmatization of the *Red Scare*

Between 1950 and 1957, artists suspected of political affiliations with the Communist Party and other Communist front organizations were publicly viewed as subversives (Ceplair and Englund, 1980). An investigative committee of the United States House of Representatives, the House Committee on un-American Activities (HUAC), conducted dozens of hearings in which individual witnesses were asked to testify about their own activities and to inform on others who might have participated in Communist organizations and events. Statements from these hearings

were published in government reports and received wide coverage in the media (Cogley, 1956). Appearing in the annual HUAC reports or being listed in publications denouncing Communists distributed to industry executives – particularly the booklet *Red Channels*, published by the magazine *Counterattack* in 1950 – made artists “controversial.”

These listings operated as blacklists. In this period, film production companies would not employ artists mentioned in the blacklists. There is also evidence of stigma by association. Artists with “mere association” – those who had worked on films with people who were *subsequently* blacklisted – had, on average, a 13 percent lower chance of working in film, compared to artists with no ties to blacklisted artists (Pontikes et al., 2010).

Later in the decade, public hostility toward blacklisted artists subsided. Senator Joseph McCarthy, not a member of HUAC but widely recognized as the strongest supporter and enforcer of political repression against Communists, died in 1957.² That year, the Writers Guild lodged a broadly supported formal protest after the Academy of Motion Pictures Arts and Sciences enacted a bylaw making blacklisted artists ineligible for awards (Smith, 1989). In 1958, the government stopped defending the blacklist: Vice President Richard Nixon issued a statement that the government would not interfere with how the industry handled its phasing-out. By the end of the decade, former President Harry S. Truman had denounced HUAC as the “most un-American thing in the country today,” and congressmen called for its abolition (Whitfield, 1996).³ Based on this historical analysis, we set the time of the beginning of the destigmatization

² The Senate had voted to censure McCarthy in December 1954, but it was after 1957 that the HUAC lost significant credibility.

³ Outside of the film industry, Americans continued to show disapproval of Communist ideas

period for blacklisted artists to 1958.⁴

Hypothesis Test

In the analysis that follows, we defined as “blacklisted” the artists named in the hearings or listed in *Red Channels*, and as “mere associates” (henceforth “associates”) the artists who (1) were not blacklisted themselves and (2) who worked on one or more films with a blacklisted artist before she or he was blacklisted (Pontikes et al., 2010).⁵ We compare outcomes to a control group of “others,” artists who were not affected by stigma who in that they were neither blacklisted nor ever employed on a film with a blacklisted artist. Applied to this context, our hypothesis suggests that, during destigmatization, the blacklist will improve employment more for those directly blacklisted than for mere associates.

Method

Data. We used multiple data sources to identify blacklisted artists, associates, and the non-stigmatized “others,” along with their employment in film. The initial list of blacklisted

and supporters. For our analysis, the relevant aspect is the change in perceptions about the blacklist specifically, and behavior among employers in Hollywood.

⁴ There is some debate about the exact timing of the end of the blacklist. In Table A.2 of the Appendix we present checks using alternate years as the end of the blacklist period. Results are similar.

⁵ The data indicate that the correlation between having documented (alleged) Communist affiliations and being blacklisted was 0.63, significantly positive, whereas the correlation between Communist affiliations and being an associate is 0.01. This suggests that many artists who experienced associative stigma had little “reason” to be discriminated in the labor market.

artists (267 individuals) comprised the witnesses and those named in the congressional hearings and in the Committee's annual reports (U.S. Congress HUAC), and the names included in *Red Channels* (American Business Consultants, 1950). The initial list of associates ($N = 10,960$) included artists who worked on the same films as the blacklisted, but to limit self-selection bias, we excluded a) artists who were themselves already blacklisted, and b) artists in films with artists who had already been blacklisted. Following Pontikes et al. (2010), we defined an artist A as an associate of a blacklisted artist B at time t if A and B had worked on (at least) one film together until time t_{i-1} and B was blacklisted at time t_i . The initial list of others ($N = 67,767$) included artists who were neither blacklisted nor worked with the blacklisted but were in at least one film between 1950 and 1957.

To measure whether an artist was in a film and to identify artists who worked together, we used data from the entries compiled by the American Film Institute Catalog of Motion Pictures (hereafter, "AFI"), which report cast members, production and distribution companies, release date, length, and genre for all motion pictures produced and released in the United States. Our analysis focused on feature films and the four main creative roles: actor, director, writer, and producer (Baker and Faulkner, 1991). We supplemented the AFI entries with data on Academy Award nominations for individual artists (http://awardsdatabase.oscars.org/ampas_awards).

Dependent variable. We examined differences for *the average number of films an artist worked in*. This variable is a basic indicator of employment for artists in the film industry.

Estimation. The main analysis estimated the likelihood of working during the destigmatization period (1958 to 1961), net of each artist's likelihood of working during the stigma period (1950 to 1957). We estimated effects using a counterfactual framework similar to a difference-in-differences estimator (Angrist and Pischke, 2009). With this approach we can

compare employment for the three artist groups in the destigmatization period to the counterfactual of what would be expected if nothing had changed – in our case, if there was no destigmatization of the blacklist. In the absence of destigmatization, employment levels (average films worked) should have been the same for blacklisted and associates. We compare differences in employment to investigate if there is a deviation in these employment levels during destigmatization, such that the directly blacklisted fare better than associates.

The estimation approach is a version of fixed effects estimation using aggregate data, which helps reduce systematic bias in estimation due to both (1) unobserved heterogeneity between units, and (2) biases from comparisons between the groups that could be the result of common trends, such as changes in technology or age (Angrist and Pischke, 2009). The approach we use aggregates yearly observations within each period into one average value and includes units surviving in the second period. This is recommended to avoid the problem of understated standard errors that occurs in estimates on time series data with serially correlated outcomes (Bertrand, Duflo and Mullainathan, 2004).

We estimated a regression model of the difference of the average number of films an artist worked in during the destigmatization period minus the average number of films an artist worked in during the stigma period. We included as predictors two dichotomous variables indicating whether an artist was (1) in the blacklisted group or (2) in the others group (not affected by the blacklist). Associates were the omitted category.

Per our hypothesis, we expected that the coefficients for blacklisted and others would both be positive. A positive coefficient for “blacklisted” would indicate that, as hypothesized, blacklisted artists were employed more than associates during destigmatization. Likewise, a positive coefficient for “others” would indicate that artists unaffected by stigma fared better than

associates during destigmatization. Taken together, these two coefficients test our prediction that associates of blacklisted artists, relative to a control group, would continue to suffer during destigmatization (“others” coefficient) and also that associates of blacklisted artists had worse outcomes than blacklisted artists themselves (“blacklisted” coefficient).

Note that we did not make specific predictions about coefficients for blacklisted vis-à-vis others. That effect depends on how much explicit stigma persists during destigmatization, a question not central to our theorizing.

The counterfactual framework we use addresses many concerns that arise in a standard regression. This framework depends on the assumption that employment for blacklisted and associated artists was parallel before destigmatization. We took two important steps to ensure that this assumption was met. First, we constructed a matched sample to reduce any systematic differences in the composition of the groups. We used “coarsened exact matching” (CEM), a nonparametric method that reduces data covariate imbalance and increases the comparability of the units in the sample (Iacus, King and Porro, 2012). The blacklist period started in 1950, so we implemented the CEM matching process using values of the covariates measured at the end of 1949. To implement CEM, we matched on covariates based on previous research: gender, professional roles, tenure in the industry, previous work in the more common film genres, and recognition from artistic awards (Baker and Faulkner, 1991; Bielby and Bielby, 1999; Zuckerman et al., 2003). Our test used 3,240 observations: 115 blacklisted, 2,459 associates, and 666 others. Details of the matching procedure are included in the appendix.

Second, we investigated whether blacklisted and associates followed parallel employment trends prior to destigmatization. We ran a regression to compare employment trends between blacklisted and associates in the pre-stigma and stigma periods. We found that employment

trends were statistically identical, and both were lower relative to the control group of others (models reported in Table A.3 the Appendix). In other words, before destigmatization, the stigma had a similar adverse effect on both the blacklisted and associates relative to the matched control. These parallel trends bolstered confidence in the validity of our estimation approach.

Hypothesis Test

In Table 1, Model 1 presents the main estimates. The model compares employment of the matched samples of blacklisted artists, associates, and others who were neither blacklisted nor associates. We included one dichotomous variable for blacklisted and one for others, with associates as the omitted category. The estimates used ordinary least squares.

[Insert Table 1 about here]

The coefficient of blacklisted was positive and statistically significant, in support of hypothesis. During the destigmatization of the blacklist, stigma harmed associates more than the blacklisted. The employment change for the blacklisted artists was 0.41 films per year more than for associates. Average pre-blacklist employment was around one film a year, so an additional difference of 0.41 was sizable.

The coefficient of others was also positive and significant, which showed that during destigmatization associates continued to be harmed by stigma relative to the control. The coefficient for blacklisted was not statistically different from that of others (F test = 2.10; $p=0.15$). This suggests that during destigmatization there was a sizable explicit correction for those who had been directly stigmatized. This pattern helps address an alternative explanation for the estimates, regression to the mean, which ought to have similarly affected both groups (Ashenfelter, 1978). A number of additional tests were run to establish the reliability of the effect, reported in the Appendix.

[Insert Figure 1 about here]

In Figure 1 we graphically present the data and the effects. Figure 1 shows the dependent variable (difference in employment) for the blacklisted artists (solid light gray bar), associates (solid dark grey bar), and “others” neither blacklisted nor associates (patterned grey bar). As expected, the difference in employment is negative for each group, as artists work less as they age. The figure shows that the negative effect is largest for the associates, in line with our hypotheses (and reflected in the statistical tests reported above). Employment for the blacklisted is the same as the comparison group of “others.” During destigmatization it is the associates – but not the blacklisted artists – who are hurt by the blacklist.

[Insert Table 1 about here]

Study 1 Discussion

Study 1 provided empirical support in a real labor market setting for our hypothesis of destigmatization imbalance. During destigmatization of the Hollywood blacklist, there was a greater negative effects on associates’ career outcomes than those of the direct stigma targets. Ironically, it is the associates, harmed not because of their own actions but by mere happenstance association, who continued to suffer, while the directly stigmatized did not. These results are consistent with our theory.

With a historical study, it is not possible to provide causal evidence for our hypothesis. We therefore designed an experimental study that allowed us to test our causal argument. Because of the passage of time, it was not feasible to experimentally investigate the same stigma. Not only were most of the film artists in our original sample no longer living, but it is likely that the blacklist stigma has reached the end of destigmatization, such that neither targets nor associates would be expected to suffer from its effects. Documenting effects for a different

stigma also bolsters the generalizability of the finding, providing evidence that results are not simply due to the unique institutional setting of the Hollywood film industry.

Study 2 – Experiment: Hirability Assessments During Destigmatization of Physical Disabilities

In preparation for the experimental study, we identified a different social stigma that historically has affected hiring outcomes and that is currently in the process of destigmatization. We theorized that hallmarks of destigmatization include decreasing levels of explicit prejudice (indicating that fewer people are willing to report negative views of persons with the characteristic) and steadier levels of implicit prejudice (indicating that many people still hold, perhaps nonconsciously, negative views of persons with the characteristic). We looked to two sources of data to identify this characteristic: (1) the website Project Implicit, which records from large samples both explicit and implicit levels of prejudice toward a variety of groups, and (2) a pilot test measuring explicit and implicit prejudice using target photographs.

Evidence that the Stigma of Physical Disability is in a Destigmatization Period

Physical disabilities involve impairment and functional limitations to the body itself or its sensory apparatuses. People with physical disabilities experience social exclusion and discrimination, including in the workplace, that limit their opportunities to integrate in community and organizational life (Altman, 1981; Livneh, Chan, and Kaya, 2014; Nagi, McBroom, and Collette, 1972; Raen, Paetzold, and Colella, 2008).

Negative attitudes toward disability persist, but changes in policy, court decisions, and social norms have notably reduced stigmatization of persons with disabilities in the United States. Among the advances brought about by the disability movement is the Americans with

Disabilities Act (ADA) of 1990, a legislative effort promoting – through training and technical assistance – the civil rights for persons with disabilities. The ADA also prohibits discrimination by employers because of a person’s chronic illness or disability. Yet even in the presence of legal protections, social acceptance of disability is not complete. For example, recent psychological research indicates that implicit stereotyping towards persons with disability persists in work contexts (Rohmer and Louvet, 2018).

Project Implicit

Working from these ideas, we conjectured that physical disability was a stigma in the process of destigmatization. We sought to confirm this by gathering data on both explicit and implicit attitudes toward disabled people. Project Implicit, a collaboration of researchers investigating implicit social cognition, provides such data to understand stereotypes and nonconscious biases.⁶ They recruit participants from the general public to take Implicit Association Tests (IATs), which measure implicit attitudes, and also ask participants about their explicit attitudes.

The IAT presents participants with images and words representing two groups, as well as good and bad words, and asks them to identify, as quickly as possible, the group association and whether the word is good or bad. For one set of trials, one group is paired with good words and the other with bad words, and on subsequent sets of trials the pairing is reversed. The IAT measures relative preference for a group based on how quickly individuals can categorize a group when it is paired with good words relative to how quickly they can categorize the same group when it is paired with bad words. A large body of work in psychology shows the validity

⁶ <https://implicit.harvard.edu/implicit/aboutus.html>

of the IAT as a measure of implicit bias (e.g., Banaji and Greenwald, 2013; Greenwald, McGhee, and Schwartz, 1998; Greenwald, Nosek and Banaji, 2003; Nosek et al., 2007; 2009).

Data from Project Implicit indicated that physical disability is a stigmatized trait in a stage of destigmatization. The Disability IAT⁷ measures implicit preference for abled relative to disabled individuals by asking individuals to categorize words and pictures related to disability, such as images of wheelchairs or crutches, when paired with good and bad words. Respondents are asked separately to indicate their relative preference for disabled or abled individuals using a self-report Likert scale, providing a measure of explicit prejudice.

[Insert Figure 2 about here]

Figure 2 shows implicit and explicit preference for abled people over time (2006–16). Positive values for both measures indicated that across the time period there was both implicit and explicit preference for abled people relative to disabled people. Because the measures were different, comparisons between absolute levels of implicit and explicit prejudice are not necessarily meaningful. Instead, we used these data to examine differences in how implicit and explicit preferences have *changed over time*; that is, we compared slopes. As Figure 2 shows, explicit preference has been steadily decreasing, while implicit preferences have been relatively steady.⁸ Thus, the Project Implicit data suggest that explicit prejudice has decreased more rapidly

⁷ <https://implicit.harvard.edu/implicit/selectatest.html>

⁸ In seemingly unrelated regressions of explicit and implicit preferences that control for demographics of the subject pool (gender, race, education, and whether the participant has a disability, available upon request) we found that explicit preferences are decreasing much more rapidly – four times so – in the years covered by the data ($\beta = -.0188 (.0006)$) than are implicit

than implicit prejudice, and implicit prejudice toward the group is ongoing. This pattern is consistent with the criteria required to study destigmatization.

Pilot Study

Data from the Project Implicit website suggested that the disability stigma meets our requirements for destigmatization. We next sought to confirm this evidence with a pilot study that investigated whether these trends toward destigmatization hold in the context of labor market evaluations. In the pilot study, we randomly assigned subjects to an explicit or implicit condition, which allowed us to directly compare explicit and implicit attitudes.

Pilot participants were asked to choose between 2 job candidates, each of whom was pictured seated alone in a waiting room prior to a job interview. Embedded among several filler trials, all with abled targets, was a key trial in which one of the 2 job candidates was physically disabled, indicated by the placement of a quad walking cane next to the candidate's chair (see Figure 3). Three different individuals (all male) were used to represent the disabled target, and four different individuals (all male) were used to represent the abled comparison candidate (between-subjects), reducing the likelihood that results may be attributed to the unique characteristics of any individual.

[Insert Figure 3 about here]

An experimental manipulation aimed at testing both implicit and explicit prejudice varied the instructions to participants. In the Implicit condition, participants were instructed:

preferences ($\beta = -.0043 (.0003)$). The solid lines in Figure 2 show predictions from these regressions. These effects are statistically different at $p < 0.0001$.

“It is important that you make the best decision you can, and that you **use your gut instincts** in your choice of candidate. For this reason, you should **work as quickly as you can** while viewing each pair of job candidates and selecting the one you would most like to hire. We are interested in **snap judgments** and **initial impressions** of job candidates prior to their interviews.”

In contrast, in the Explicit condition, participants were instructed:

“It is important that you make the best decision you can, and that you **be thoughtful and careful** in your choice of candidate. For this reason, you will be asked to **take your time** in viewing each pair of job candidates and to **carefully consider** the pros and cons of each candidate before selecting the one you would most like to hire.”

Moreover, each trial in the Explicit condition asked participants to explain and justify their selection in an open-ended box, and we required they remain on the screen for at least 30 seconds, before proceeding to the next trial.

We hypothesized that, if the disability stigma is associated with decreased explicit prejudice but persistent implicit prejudice, pilot participants should make different candidate choices as a function of the instructions given. Specifically, we expected that any tendency to prefer an abled over a disabled job candidate would be greater in the Implicit condition than in the Explicit condition. We reasoned that this pattern would provide evidence of reduced explicit prejudice, but persistent implicit prejudice, against the disabled.

Pilot data were collected with 129 participants on Mechanical Turk, who were given a small cash reward in exchange for their involvement. Mechanical Turk is a crowdsourcing survey platform that is widely used in the social sciences; it has been shown to yield high-quality data and reasonably diverse samples that are more nationally representative than data sources

such as college students (Buhrmester, Kwang, and Gosling, 2011; Paolacci and Chandler, 2014). As an indication that the experimental manipulation was effective, Explicit participants spent an average of 72 seconds choosing between the disabled and abled job candidates, well beyond the minimum requirement, whereas Implicit participants took less than six seconds to make this choice.

[Insert Figure 4 about here]

Results showed that overall, there was no particular tendency to prefer the abled candidate; he was chosen 50% of the time, $t(128) = -.088, ns$. This rate strongly differed by condition, however, in line with our hypothesis (see Figure 4). Among participants in the Implicit condition, 60% chose the abled candidate (and 40% chose the disabled candidate), whereas among participants in the Explicit condition, 39% chose the abled candidate (and 61% chose the disabled candidate). These rates differed significantly, $X^2(1, N = 129) = 5.66, p = .017$. When making implicit decisions, participants preferred the abled candidate, suggesting that implicit prejudice against the disabled persists. When using more deliberate, explicit decision making, participants did not prefer the abled candidate, suggesting that explicit prejudice against the disabled has diminished. This pattern is consistent with that of the Project Implicit data described previously.

It is notable that Explicit participants showed a reversed effect, choosing the disabled candidate *more* often than the abled candidate. This suggests that not only may people not have (or at least not acknowledge) explicit, conscious biases against people with disabilities, but they may view the disabled candidate in a positive light. Perhaps our pilot participants – at least those who took the time to think in a careful, more deliberate fashion – viewed the disabled job

candidate as needing the job more (Taylor, 1998) or as having thrived despite adversity, indicating a strong character (Ryan, Anas, and Grunier, 2006).

Regardless, the combined results of these two initial tests provide converging evidence that physical disability is in the process of destigmatization. Evidence that disability stigma is weakening was found in decreasing explicit prejudice among a large national sample, via the IAT data, and in an absence of explicit prejudice among pilot participants. At the same time, there also is evidence that the destigmatization of disability is incomplete; we saw persisting implicit prejudice in the IAT, combined with continued implicit prejudice among pilot participants. Based on this evidence of decreasing explicit prejudice and persisting implicit prejudice against people with disabilities, we can conclude that the stigma of physical disability is in the midst of destigmatization. As such, this stigma provides a suitable setting for further testing the imbalance argument – that as a stigma weakens, associates of the stigmatized will be penalized more than will stigmatized individuals themselves.

Hypothesis Test

The aim of Study 2 was to provide causal evidence for the argument that during destigmatization, stigma will lead to more detrimental consequences for associates than for stigmatized individuals themselves. Study 1 provided historical evidence for this phenomenon, using the stigma of the Communist blacklist. The current study sought to replicate this pattern and demonstrate a causal pathway via an experimental methodology.

The hypothesis of the current study is that in the present day, the negative effect of a physical disability will be greater for individuals who are merely associated with a disabled person than it will be for disabled individuals themselves. Our hypothesis suggests that even while perceivers are avoiding negative reactions to disabled individuals, the disability stigma still

spreads to mere associates of the disabled individual, outside of the perceiver's conscious awareness (Walther, 2002). Because the perceiver is unaware of this stigma spread, he or she does not consciously correct for it. As a result, we expect, the presence of a disability will hurt evaluations of associates to a greater degree than for the disabled.

In Study 2, we tested this hypothesis with a scenario experiment involving two job candidates who were waiting together for a job interview, but had no other acquaintance or association. The two candidates were “mere” associates. As previously described, past research (Pryor et al., 2012) suggests that perceivers are conscious of stigma spread in cases when a stigmatized target and an associate have a meaningful, intentional relationship (such as spouses or friends), but are not conscious of stigma spread when the relationship is non-meaningful or arbitrary (such as two unacquainted co-workers, or two people waiting together in a line). As such, we were careful to specify that the two job candidates in the current study were not acquainted.

The experimental design was a 2 (Target's Disability Status: Disabled vs. Able) x 2 (Person Rated: Target vs. Associate), with Target's Disability Status manipulated between subjects and Person Rated manipulated within subjects. We measured participants' desire to hire each candidate, along with related evaluations.

Our primary hypothesis was an interaction between the two independent variables, such that the negative effect of targets' physical disability on hireability would be greater for associates than for the targets themselves. An effect of physical disability on the disabled target alone would be evidence of direct stigma, whereas an effect of physical disability on the associate alone would be evidence of stigma by association. Both processes have been previously

demonstrated. Our novel prediction is the interaction test showing the effect of the disability stigma on the associate relative to the target, additional evidence to that provided in study 1.

Method

Participants

The sample comprised 301 U.S. adults (51% female, $M_{age} = 34.6$) recruited through Mechanical Turk. Participants were paid \$1 for their study involvement. The majority (75%) of participants were White, 9% were Black, 6% were Asian American, 4% were Latino/a, and the remainder were of a mixed or other ethnic background. Most participants (60%) had a bachelor's degree or higher, and a slight majority (55%) had paid employment outside the home.

Materials

Stimuli. The stimuli consisted of 2 photographs each of 2 pairs of young men in professional dress, seated in a waiting-room area (see Figure 5). In one photo, a quad walking cane was placed in front of one of the men's chairs; in the other photo, there was no cane.

[Insert Figure 5 about here]

Dependent variables. Participants rated both job candidates on 4 dependent variables, all on Likert scales that ranged from 1 ("Disagree") to 5 ("Agree"). The main dependent variable, *hireability*, comprised 4 items: "In my opinion, he should be hired," "He seems like a very promising job candidate," "He seems dedicated and committed to the job," and "He should probably not get the job" (reversed scored). The next 2 dependent variables were *competence* and *warmth*, reflecting the 2 primary dimensions of social evaluation (Fiske, Cuddy, and Glick, 2007). Competence was measured with the adjectives "Competent," "Intelligent," "Confident," "Competitive," and "Independent"; warmth was measured with the adjectives "Sincere," "Good-natured," "Warm," "Tolerant," and "Likeable." Items for both scales were adapted from Fiske,

Cuddy, Glick, and Xu (2002). Last, we included a dependent variable measuring *desired closeness*, because stigma scholars argue that a central consequence of stigma is the desire to avoid and exclude a person with a stigmatizing characteristic (Goffman, 1963; Kurzban and Leary, 2001). Desired closeness was measured with 4 items: “He would be a good person to work closely with,” “I would be OK working on a project or team with him,” “I would be concerned about working too closely with him” (reverse scored), and “I would not want to share an office with him” (reverse scored).

Procedure

Participants completed the study, described as exploring first impressions of job candidates, online. After being randomly assigned to a disability condition, they viewed a photograph in which the target (the person on the left) either had a cane (Disabled condition) or did not (Able condition). They were next asked several multiple-choice questions to ensure comprehension of the instructions including the target’s name, what the people in the photograph were doing, and the relationship between the two people. The latter question was especially important to ensure that participants understood that the photographed individuals did not know each other. Next, participants were asked to document their initial impressions of each candidate in a text box, similar to the explicit condition in the pilot study.

Participants then rated the associate (i.e., the individual who was never pictured with a disability) on the dependent variables of hireability, competence, warmth, and desired closeness, and subsequently rated the target (i.e., the individual who was pictured with a disability in the Disabled condition) on those same variables. The instructions specified that the candidates were interviewing for a number of possible job openings, so participants should not feel obliged to

choose between the two candidates but instead should evaluate each independently. Last, participants provided demographic information and submitted the study.

Results

Scale reliabilities were sufficiently high for items measuring hireability ($\alpha_{\text{target}} = .82$, $\alpha_{\text{associate}} = .84$), competence ($\alpha_{\text{target}} = .84$, $\alpha_{\text{associate}} = .81$), warmth ($\alpha_{\text{target}} = .90$, $\alpha_{\text{associate}} = .88$), and desired closeness ($\alpha_{\text{target}} = .84$, $\alpha_{\text{associate}} = .82$). As a result, responses for all scales were collapsed to create the 4 dependent variables. Descriptive analyses of the comprehension-check items revealed that >99% (all but 1) of participants correctly recalled the target's name (out of a list of 3 choices), 100% of participants correctly recalled that the individuals were waiting for a job interview (and not for a dentist appointment or a research study), and >99% (all but 1) of participants correctly recalled that the individuals were unacquainted (and not friends or family members), which reinforces that they understood the non-meaningful relationship between target and associate. All participants were therefore retained in the analyses.

There were no significant effects involving the specific pairing of men that participants viewed. Thus, all subsequent analyses were collapsed across the two pairings.

Hypothesis Test

Our central prediction was an interaction between the disability status of the target and the person being rated, such that any stigmatizing effects of the disability would be greater for the associate (who was never shown as disabled himself) than for the target. We conducted mixed-model analyses of variance, with Target's Disability Status as the between-subjects variable and Person Rated as the within-subjects variable, on each of the 4 dependent variables. Means and standard deviations are presented in Table 7.

[Insert Table 7 and Figure 6 about here]

Results supported our hypotheses for all 4 variables. The interaction effect was significant for hireability, $F(1, 299) = 5.20, p = .023, \eta^2 = .017$; competence, $F(1, 299) = 22.31, p < .0005, \eta^2 = .070$; warmth, $F(1, 299) = 7.11, p = .008, \eta^2 = .023$; and desired closeness, $F(1, 299) = 9.46, p = .002, \eta^2 = .031$. An inspection of the means in Table 7 reveals a consistent pattern such that for targets, there was no negative effect of the disability stigma – if anything, the target was evaluated more positively when he was shown as disabled than when he was not, consistent with our pilot data. For the associate, however, the pattern was reversed – he was consistently evaluated more negatively when seated next to a disabled job candidate than an abled job candidate. In other words, the stigma of disability had negative consequences for mere associates, but not for disabled individuals themselves.

Study 2 Discussion

The results of Study 2 demonstrated causal support for our hypothesized pathway. We found that the negative effects of the stigma of physical disability – a stigma associated with decreased explicit prejudice and ongoing implicit prejudice – are currently greater for mere associates of disabled individuals than for disabled individuals themselves. Participants in Study 2 were just as willing (if not more willing) to hire and work closely with a job candidate who was presented as disabled, compared to when when he was presented as abled, and viewed him as just as competent and warm. Yet this effect was reversed for job candidates who simply sat next to a person with a disability – this mere association led participations to be less willing to hire and work closely with the associate, and to see him as less competent and warm.

Note that in the present study, we do not disentangle participants' motives to present a socially desirable response from their actual absence of explicit prejudice against the disabled. It

is possible that the Study 2 participants simply did not want to admit that they were reticent to hire a disabled job candidate. Both “sincere” and “politically correct” desires to avoid explicit prejudice are consistent with our hypothesized mechanism. As a stigma begins to fade, individuals will vary in the degree to which, and the speed with which, they embrace new social norms. While some individuals will achieve a real absence of explicit prejudice against the stigmatized, others may initially only recognize that such expressions are counternormative, and avoid making them publicly (Plant and Devine, 1998). Both processes yield the same outcome of reduced explicit prejudice and discrimination toward a previously stigmatized group. For our theory, what is relevant is that, in both cases, perceivers correct for explicit prejudice against the formerly stigmatized – but that they reliably fail to make the same correction when it comes to associates. As such, associates will continue to suffer from stigma even when the stigmatized do not.

General Discussion

How stigma spreads and its effects have been well studied in psychological and sociological literatures. But there is little understanding about destigmatization (Lamont, 2018). Here, we investigate employment outcomes during periods of destigmatization. We propose an *imbalance* in how destigmatization benefits those who were directly stigmatized as compared to those with stigma by association. Counterintuitively, it is associates who experience enduring harm during these periods.

In Figure 6, we graphically illustrate this paradoxical effect, which emerges in both studies, showing consistent support for our hypotheses. In the top panel, from Study 1, the left bar represents the effect of stigma on blacklisted (vs. control) artists’ likelihood of working, and the right bar represents the effect of stigma on mere-associated (vs. control) artists’ likelihood of

working. In the bottom panel, from Study 2, the left bar represents the effect of stigma on disabled (vs. control) job candidates' perceived hireability, whereas the right bar represents the effect of stigma on mere-associated (vs. control) job candidates' perceived hireability. Across both studies, each of which captured a stigma during its period of destigmatization, stigma damaged the career outcomes of associates *relative to* stigmatized individuals.

We suggest that during destigmatization, people make a conscious effort to change their reactions toward the stigmatized, influenced by evolving social norms. This will yield more positive evaluations and improved social outcomes for stigmatized people. But this does not mean that destigmatization processes are a straightforward reversal of stigma. We propose that an imbalance in destigmatization occurs, such that people who are stigmatized by association will not as readily rebound, compared to those stigmatized directly. This is because during destigmatization, social norms have changed enough to affect deliberate, or explicit, prejudice, but not enough to eliminate automatic, or implicit, prejudice. Because implicit prejudice will initially persist even when explicit prejudice has largely disappeared, individuals explicitly affected by stigma (direct targets of stigma) will realize improved social outcomes earlier than will those who are indirectly affected (mere associates).

We present consistent observational and experimental evidence that supports this argument. After the Red Scare in Hollywood, the stigma of the Communist blacklist continued to negatively affect the careers of associates more strongly than it did those of the blacklisted. We identified a second stigma, disability, that evidence suggests is experiencing destigmatization. A subsequent experimental study showed that disability harmed the likelihood of hiring a job candidate with mere spatial proximity to a stigmatized job candidate more than for the stigmatized job candidate himself.

These parallel findings are consistent with the idea that this destigmatization imbalance is due to perceivers not being aware of – and therefore not correcting for – negative effects of stigma by association, which operates partly through automatic processes. They show that this imbalance can have material effects on outcomes, here leading to the paradoxical situation where people who were *less* associated with a stigma suffer *more* (at least for a period of time).

These findings also complement previous research suggesting that stigma-related processes evolve in stages. A first stage involves the emergence of stigma and its diffusion to persons carrying discrediting marks, as well as persons associated with them, either intentionally or unintentionally. The second stage is destigmatization, in which groups organize to change public opinion and rules to remove stigma and its discriminating effects. At this point, stigma is “officially” lifted. As we show, this means it is lifted only for direct targets, but not their mere associates. Results provide evidence that in this stage, deliberate negative reactions and conscious prejudice will be reduced, whereas automatic, nonconscious prejudice is likely to persist. Finally, the third stage of complete destigmatization involves the waning of all prejudice, both conscious and nonconscious. If the process completes, the effects of stigma ought to disappear.

Two questions relevant for future research involve exploring differences in how stigmas evolve. First, it is likely that implicit attitudes will not change at the same rate as explicit attitudes. Previous research shows that explicit attitudes tend to change when people learn new information verbally, via logic and cultural symbols (Rydell and McConnell, 2006). Change in implicit attitudes, on the other hand, requires a slow accumulation of nonverbal, unconscious information that modifies associations in memory (Gawronski and LeBel, 2008). The transition from partial to full destigmatization seems to depend on people not only taking into account

logical explanations for eliminating the stigma, but also slowly processing and acting on new information about the stigmatized that counters initial perceptions.

Second, destigmatization can operate quickly or slowly, depending on the context in which the stigma occurs, and perhaps on the type of stigma. For example, the stigma of the blacklist during the Red Scare subsided faster than the disability stigma. Contextual factors including the size of the stigmatized group, or resources available to allies and opponents, likely shape the duration of destigmatization. Larger stigmatized groups are more likely to have contact with outsiders and these contacts may initiate changes in attitudes. Similarly, groups that can mobilize more resources in their support can disseminate more information and knowledge about the stigmatized that can help reduce prejudice. Last, attributes of the stigma may also affect the rate at which destigmatization evolves. The stigma of Communism stems from what Goffman would call “character” blemishes, which are perceived as being difficult but not impossible to change. The stigma associated with physical disabilities and chronic illnesses relates to physical attributes (what Goffman defined as “abominations of the body”), which tend to be viewed as uncontrollable and irreversible; changing reactions to these characteristics may take more effort and time. For physical-attribute stigmas, targets and their allies may need to marshal scientific research and evidence that demonstrates the illegitimacy of the bias to achieve lasting reductions in prejudice.

The process of destigmatization has received limited scientific attention, but is becoming more important as policy changes and public education seek to change the social standing of discredited groups in society (Pescosolido and Martin, 2015). The findings reported here suggest that the social harm created by stigma is difficult to correct; the wide reach of stigma is not counteracted by a similar breadth when it comes to reversing it.

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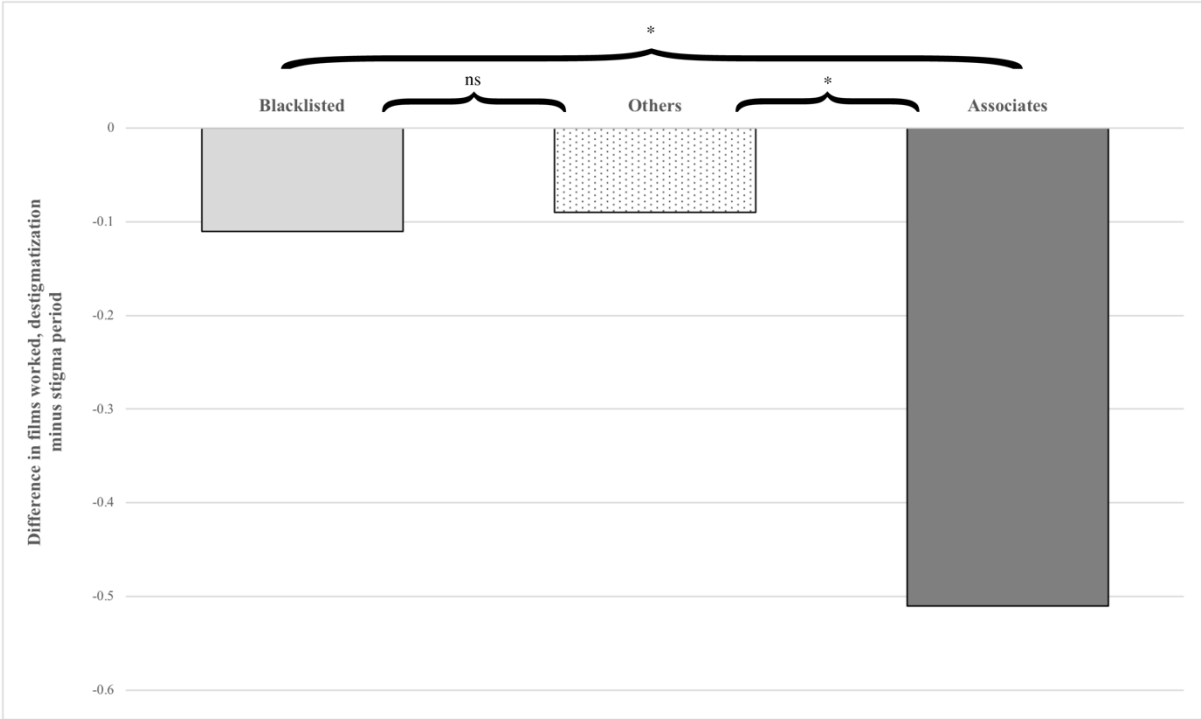
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Table 1. OLS Regression of Difference in Average Number of Films Worked for Blacklisted Artists, Associates, and Others - Blacklist and Post-Blacklist Period, Study 1.

<i>Model 1</i>	
<i>Matched Sample: Blacklisted + Associates + Others</i>	
Blacklisted	0.406* (0.044)
Others	0.470* (0.029)
Constant	-0.556* (0.020)
R²	0.05
N	3,240

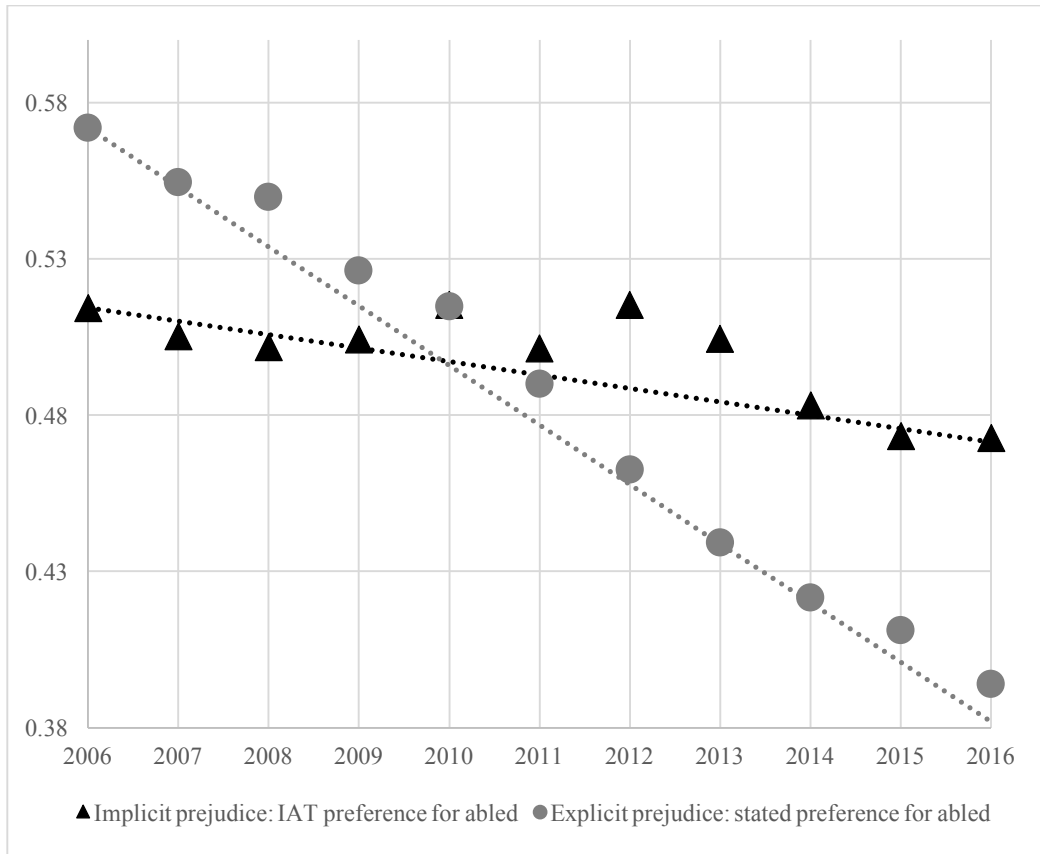
Notes: Standard errors in parentheses. * $p < 0.05$ (two-tailed). Control group is Associates. Time periods are: 1958-1961 vs. 1950-1957.

Figure 1. Employment in Film for Blacklisted and Associate Artists During Destigmatization, Study 1.



Notes: Brackets indicate statistical significance for tests of equality of means between groups.
* $p < 0.05$ (two-tailed).

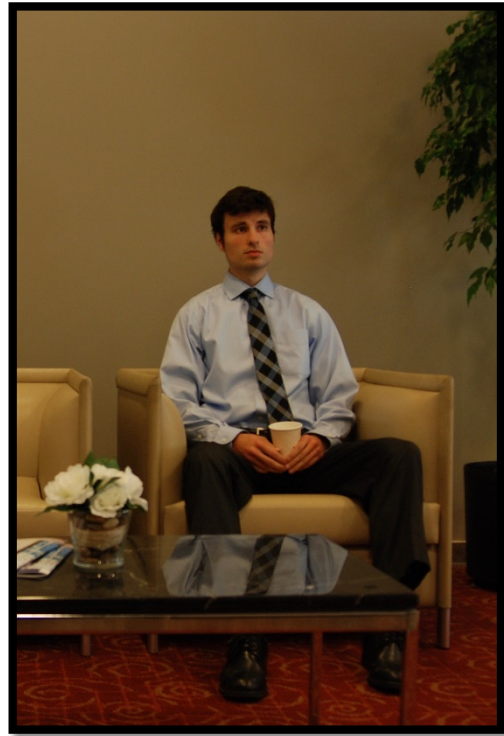
Figure 2: Implicit and Explicit Preference for Abled Relative to Disabled, 2006-2016.



Notes: This graph shows the mean IAT score and mean explicit prejudice score (centered at 0) each year for subjects that took the Disability Implicit Attitude Test (IAT) from Project Implicit. Lines represent estimated year effects from seemingly unrelated regressions that control for individual demographic characteristics. The IAT preference score measures differences in response latencies when abled images are paired with good words (and disabled images with bad words), relative to the reverse pairing. The explicit measure is a 7– point scale asking whether the subject prefers abled or disabled people. Data collection began in 2004 but the explicit preference scale changed in 2006. We exclude subjects with high error rates and high latencies, those for whom there is no IAT score or explicit preference score, and those for whom there is no demographic information. Data in the graph and regressions are based on 227,213 responses: between 15,000 and 34,000 responses for each year presented except 2006 where there were 5,356 responses.

Data are from Project Implicit, available at <https://osf.io/tx5fi/wiki/home/>.

Figure 3. Sample Stimulus Photographs from Pilot Study



Notes: participants were asked to choose either quickly (Implicit condition) or slowly (Explicit condition) between a disabled or an abled job candidate.

Figure 4. Selection Rates of Disabled vs. Abled Job Candidate from Pilot Study.

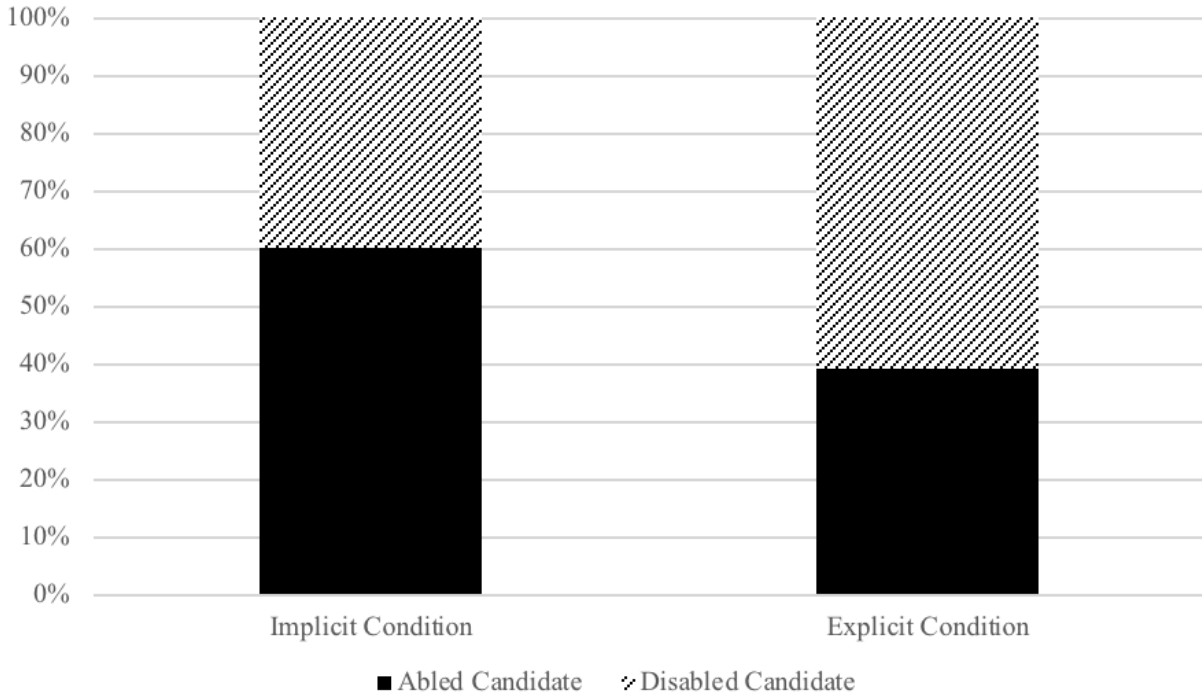


Figure 5. Sample Stimulus Photographs, Study 2.

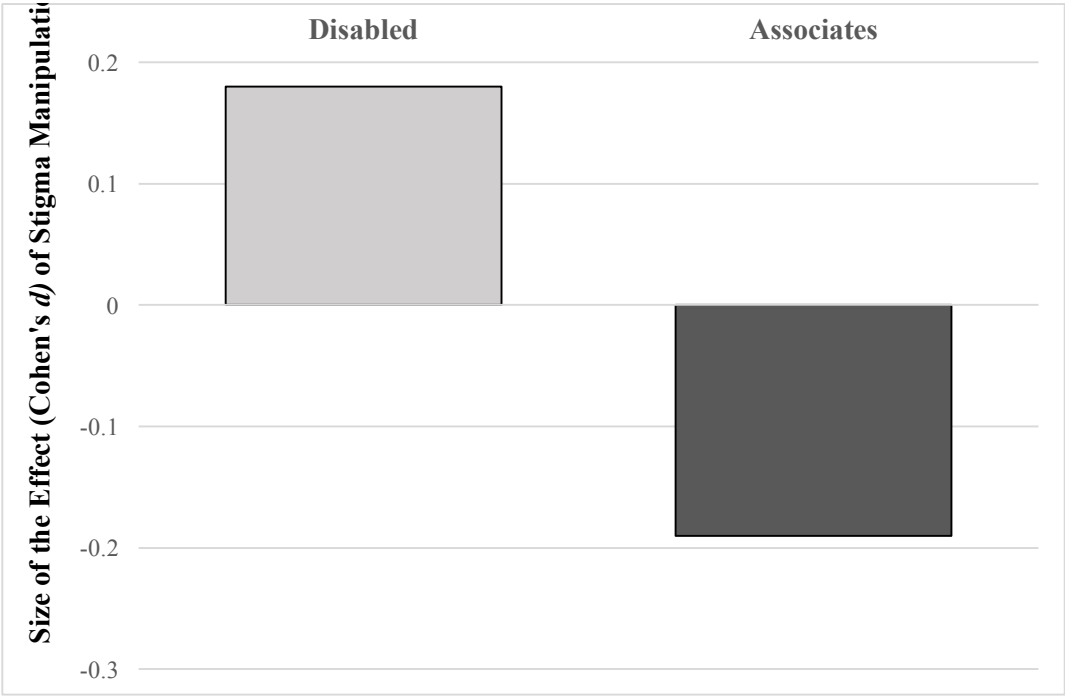
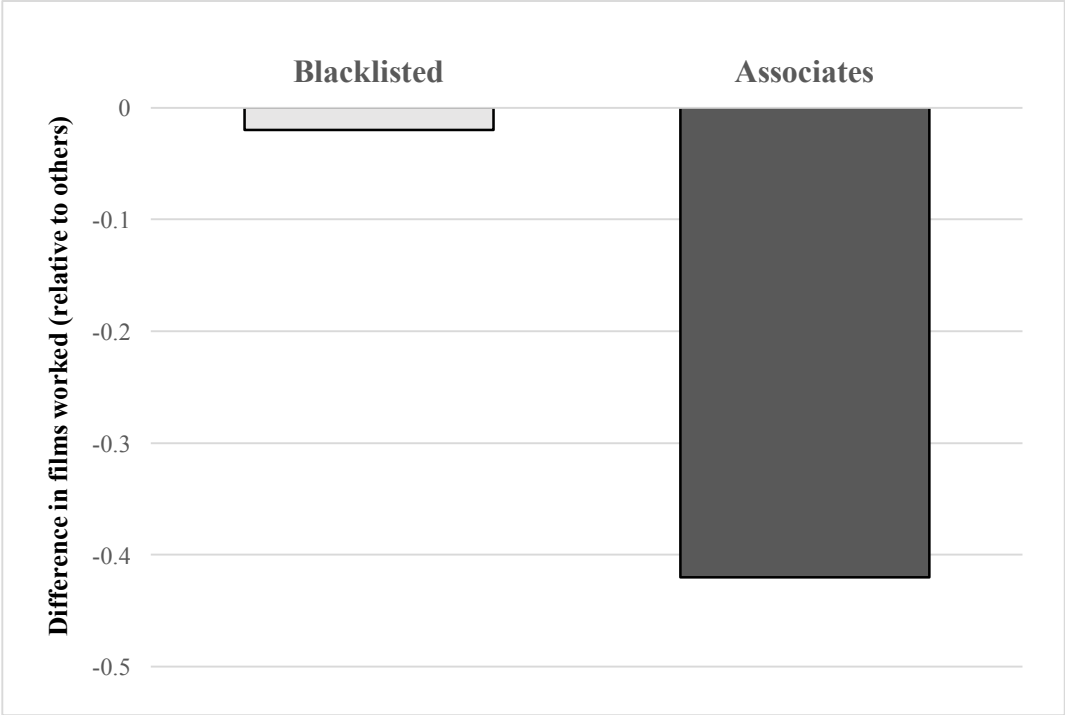


Notes: Participants in the Disabled condition saw the upper photograph; participants in the Able condition saw the lower photograph. The target is on the left and the associate is on the right.

Table 2. Means and Standard Deviations (in Parentheses), Study 2.

Dependent Variable	Target's Disability Status	Person Rated	
		<i>Target</i>	<i>Associate</i>
Hireability	Disabled	3.75 (0.73)	3.37 (0.80)
	Abled	3.61 (0.83)	3.52 (0.77)
Competence	Disabled	3.74 (0.76)	3.38 (0.74)
	Abled	3.46 (0.80)	3.68 (0.76)
Warmth	Disabled	3.65 (0.75)	3.41 (0.78)
	Abled	3.41 (0.78)	3.46 (0.72)
Desired Closeness	Disabled	3.80 (0.78)	3.55 (0.81)
	Abled	3.57 (0.88)	3.67 (0.78)

Figure 6. Effect of Stigma on Employment of Blacklisted Artists compared to Associates, Study 1 (top panel), and on Perceived Hireability of Stigma Targets compared to Associates, Study 2 (bottom panel).



Appendix for “Destigmatization and Its Imbalanced Effects”

Study 1. Methodological Note

CEM Matching

We describe how we implemented the CEM matching procedure (Iacus, King, and Porro, 2012) to create matched samples of the three groups: blacklisted, associates and others (neither blacklisted nor associates).

From the group of 267 blacklisted artists in the data, we retained 257 who had at least one film role after 1945, to avoid including inactive artists. Of these, 7 artists were excluded because they worked in their first feature film after 1957. Of the remaining 250, we retained 216 who worked in one of the four main roles that we focus on (actor, director, producer, and writer). We wished to reduce attrition bias and compare artists alive at the end of the post-blacklist period, excluding artists who died before 1962. Death dates for the blacklisted artists were determined from online and print resources, particularly imdb.com, AFI and the bibliographic references cited in the main text. We also created mutually exclusive groups and excluded artists who entered the data as associates and became blacklisted (the associate group is defined in such a way that prevents the transition from blacklisted to associate). We applied CEM on the remaining set of 129 artists. The reduction from 216 to 129 seems substantial, but our primary concern was to enhance internal validity by limiting the bias from self-selection into the two groups.

We matched on covariates based on previous research: gender, professional roles, tenure in the industry, previous work in the more common film genres, and recognition from artistic awards. Table A.1 provides details about these covariates.

Table A1. Description of Covariates Included in the CEM Matching Procedure, Study 1.

Covariate	Definition	Source
Gender	Dichotomous indicator equal to 0 for female and 1 for male.	Online dictionaries of baby names, and manual verification by independent coder using artist searches on imdb.com.
Professional role	Count of jobs as actor, writer, director, producer and hyphenates.	Film entries in American Film Institute catalog (AFI)
Tenure in the industry	Count of years since first film job.	AFI
Artistic track record	Count of Academy Award (Oscar) nominations including wins.	http://awardsdatabase.oscars.org/ampas_awards/BasicSearchInput.jsp
Previous employment in film genres	Count of films in each of the 4 more common genres: Comedy; Crime; Drama; Western.	AFI

To improve the covariate balance, we identified cut-points for each covariate. The CEM procedure matches units in the two groups that are within the cut-points for every covariate, and so ensures that matched units have similar values. Implementing CEM found matches for 115 of the 129 blacklisted artists in the final set. From the initial set of associates, CEM searched for matches among artists who worked in at least one feature film after 1945 in one of the four roles that we examine, and with available biographical information.

To substantiate the quality of the matching process, Table A.1 presents summary statistics for the two groups of the covariates used in the matching procedure before implementing the matching and after. Visual inspection and tests of means indicates that the distance between the two groups for the covariates decreases after the matching. The matching process helped to also achieve balance between the units for unobservables. The reduction in bias can also be observed when comparing variables *not* included in the CEM that we can measure with our data. In the lower part of Table A.1 we report the post-matching summary statistics and t-tests of the mean differences of one additional covariate that could be calculated from our data, the specialization index of film jobs across all genres. The data ranges and t-tests

for this covariate indicates significant similarity between the matched groups of artists.

Table A1. Descriptive Statistics of Covariates Included or Compared in CEM Matching Procedure, Study 1.

Before matching

	Blacklisted		Associates		Others		Blacklisted vs. Associates	Blacklisted vs. Others	Associates vs. Others
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	Mean ≠ 0 (p-value)	Mean ≠ 0 (p-value)	Mean ≠ 0 (p-value)
Gender (Female = 0)	0.249	0.460	0.333	0.534	0.448	0.642	(0.00)	(0.00)	(0.00)
Role (A/D/W/P/Hyphenates)	3.834	3.568	2.167	2.841	1.703	1.886	(0.00)	(0.00)	(0.00)
Tenure	16.054	9.121	17.458	9.779	7.462	6.843	(0.00)	(0.00)	(0.00)
Oscar nominations	0.293	0.716	0.061	0.418	0.006	0.094	(0.00)	(0.00)	(0.00)
Films in comedy	0.643	1.256	1.498	3.230	0.168	0.572	(0.00)	(0.00)	(0.00)
Films in crime	1.483	2.349	2.195	3.825	0.504	1.050	(0.00)	(0.00)	(0.00)
Films in drama	0.418	0.918	1.015	2.461	0.045	0.242	(0.00)	(0.00)	(0.00)
Films in western	0.575	1.508	2.644	10.010	0.202	1.146	(0.00)	(0.00)	(0.00)
Work for major studio	0.755	0.430	0.849	0.358	0.337	0.473	(0.00)	(0.00)	(0.00)
Genre specialization	0.351	0.308	0.311	0.289	0.593	0.430	(0.01)	(0.00)	(0.00)

After matching

		Blacklisted		Associates		Others		Blacklisted vs. Associates	Blacklisted vs. Others	Associates vs. Others
		Mean	SD	Mean	SD	Mean	SD	Mean \neq 0 (p-value)	Mean \neq 0 (p-value)	Mean \neq 0 (p-value)
<u>CEM Matched</u>	Gender (Female = 0)	0.261	0.441	0.264	0.443	0.167	0.389	(0.97)	(0.48)	(0.47)
	Role (A/D/W/P/Hyphenates)	3.360	3.065	3.308	2.520	4.166	4.064	(0.90)	(0.40)	(0.31)
	Tenure	7.469	5.738	8.912	6.280	6.500	9.395	(0.09)	(0.61)	(0.24)
	Oscar nominations	0.199	0.501	0.286	0.860	0.010	0.411	(0.37)	(0.18)	(0.26)
	Films in comedy	0.532	1.094	0.681	0.129	0.250	0.452	(0.36)	(0.38)	(0.23)
	Films in crime	0.351	0.652	0.363	0.062	0.250	0.452	(0.90)	(0.60)	(0.52)
	Films in drama	0.550	1.166	0.593	1.308	0.333	0.651	(0.80)	(0.53)	(0.50)
	Films in western	0.360	1.150	0.473	1.302	0.583	1.084	(0.52)	(0.06)	(0.02)
<u>Non-Matched</u>										
	Genre specialization	0.259	0.326	0.201	0.239	0.290	0.382	(0.40)	(0.76)	(0.26)

The CEM procedure uses maximal information and returns all matched units. This can result in strata that may include different numbers of treated and control units, as in the case of our data where the number of blacklisted was smaller than the number of associates or others. The CEM algorithm includes an option for a ‘k-to-k’ solution. This solution randomly drops observations from a CEM output within each stratum until the number of treated and control units is the same in all strata. In Table A.2 we replicated the model specification of Table 1 in the paper using the k-to-k solution, which used 115 observations each for the blacklisted, associates, and others group. The coefficient of blacklisted remains positive and statistically significant, suggesting that the effect shown in Table 1 is not an artifact of a larger sample size.

Table A.2. OLS Regression of Difference in Average Number of Films Worked for Blacklisted Artists and Associates, Study 1. Sample Size Obtained with K-to-K Matching.

	<i>Difference in Avg. Number of Films</i>
Blacklisted	0.462* (0.115)
Others	0.562* (0.116)
Constant	-0.612* (0.108)
R²	0.10

Notes: Standard errors in parentheses. * p < 0.05 (two-tailed). Control group is Associates. N = 345. Difference is calculated between two periods: 1958-1961 vs. 1950-1957.

Parallel Trends

An assumption of our estimation approach is that the employment trends for the blacklisted and associates would have been the same in the counterfactual where destigmatization had not occurred. To test this parallel trend assumption, we compared employment outcomes prior to the analysis period, in Table A.3. If blacklisted and associates are comparable we would expect to observe similar employment outcomes during the blacklist compared to the pre-blacklist years. We estimated a regression that compared the differences between the average number of films worked each year during the blacklist period and during the period *before* the blacklist (1945-1949). The estimates were obtained using ordinary least squares using the matched data. The regression model is estimated including as covariates the dichotomous variables equal to 1 for blacklisted artists (and 0 otherwise), and 1 for other artists (and 0 otherwise). Associate artists are the omitted category. In these estimates the coefficient for blacklisted had no statistical significance, suggesting that there was not already a different employment trend between the two groups, supporting the parallel trends assumption. The coefficient for the others group is positive and significant, showing that compared to the pre-blacklist period, in the stigma period blacklisted and associates experienced lower employment compared to those unaffected by stigma.

Table A3. OLS Regression of Difference in Average Number of Films Worked for Blacklisted Artists and Associates, Blacklist and Pre-Blacklist Period, Study 1.

	<i>Difference in Avg. Number of Films</i>
Blacklisted	-0.159 (0.192)
Others	0.399* (0.066)
Constant	-0.572* (0.034)
R²	0.02

Notes: Standard errors in parentheses. * $p < 0.05$ (two-tailed). $N = 940$. Control group is Associates. Periods are: 1950-1957 vs. 1945-1949.

Additional Tests

We provide additional tests to establish the reliability of the destigmatization effect. First, we examined the sensitivity of the estimates to alternative definitions of the pre- and post-blacklist periods, and the duration of the destigmatization period. The estimates are presented in Table A.4 below. The dependent variable is of average number of films worked. In Model 1-2 we moved the end of the blacklist period backward and forward by one year. In Model 3-5 we repeated the same procedure also start the post-blacklist period in 1959. The estimates show similar patterns to Table 1 in the paper.

Table A.4. OLS Regression of Difference Average Number of Films Worked, Study 1.

	<i>Difference in Avg. Number of Films:</i>				
	<i>(1958-60) – (1950-57)</i>	<i>(1958-62) – (1950-57)</i>	<i>(1959-60) – (1950-57)</i>	<i>(1959-61) – (1950-57)</i>	<i>(1959-62) – (1950-57)</i>
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>
Blacklisted	0.394* (0.046)	0.426* (0.042)	0.420* (0.048)	0.428* (0.046)	0.449* (0.044)
Others	0.431* (0.029)	0.487* (0.030)	0.458* (0.032)	0.502* (0.032)	0.515* (0.032)
Constant	-0.518* (0.020)	-0.578* (0.021)	-0.568* (0.021)	-0.601* (0.022)	-0.618* (0.022)
R²	0.04	0.05	0.04	0.04	0.05

Notes: Standard errors in parentheses. * $p < 0.05$ (two-tailed). N = 3240. Control group is Associates.

Next, we report alternative measurements and additional tests of the effect presented in Table 1 in the paper. First, despite the matching procedure, the estimates may be sensitive to a few remaining outliers. In Table A.5 we replaced the dependent variable measuring difference in number of films worked with another measure less affected by outliers, *the average number of*

years an artist worked in at least one film. In this model the blacklisted variable also shows a positive and significant coefficient. There is also a question whether the results in Table 1 of the paper are because the stigmatized have a greater absolute disadvantage to rebound from. To test this, in Model 2 we re-estimated the specification of Model 1 in Table 1 using a logarithmic transformation of the outcome variable. Using the difference of the log-transformed variable allowed to interpret changes for each group between the two periods in terms of percent and not absolute changes. The estimates in Table A.5 show a pattern similar to that reported in the paper.

Table A.5. OLS Regression of Difference in Average Number of Films Worked for Blacklisted Artists and Associates, and Working in Film, Study 1. Alternative Measurement.

	<i>Difference in Working in Film</i>	<i>Difference in Avg. Number of Films - Log Transformation</i>
	<i>Model 1</i>	<i>Model 2</i>
Blacklisted	0.083* (0.024)	0.150* (0.032)
Others	0.138* (0.011)	0.217* (0.16)
Constant	-0.153* (0.006)	-0.263* (0.013)
R²	0.04	0.03

Notes: Standard errors in parentheses. * $p < 0.05$ (two-tailed). $N = 3240$. Control group is Associates. Difference is calculated across two periods: 1958-1961 vs. 1950-1957.

Another concern involves omitted interaction bias, in that some artists may have worked under a pseudonym or fronts during the blacklist period, which could affect results. Some writers worked in a “black market” for film scripts. For example, Dalton Trumbo worked for Monogram

during the blacklist years, writing films (including *Gun Crazy*) that were credited to Millard Kaufman. AFI provides information for screen credits obtained through pseudonyms, so the estimates obtain net of these corrections. We further tested against this concern, taking advantage of the fact that working in the black market was a strategy only available to writers, as the other roles are visible to the audience. In Table A.6 Model 1 replicates the model specification of Table 1 in the paper but excludes artists working exclusively in writing jobs. The blacklisted effect remains positive and statistically significant.

In Model 2 we tested whether the effect of destigmatization was due not to changes in public perceptions toward the blacklisted artists but to some artists pursuing distinctive strategies to improve their reputation and distance themselves from the blacklist and its stigma. One way to achieve that would be to seek jobs during the blacklist period in projects whose content includes anti-Communist messages. Two lists of anti-Communist films that were released in this time period are documented in Cogley (1956) and Combs (1990). We coded a dichotomous variable for whether the artists were in one or more of these anti-Communist films. The effect of blacklisted holds after controlling for the anti-Communist film variable. This variable has a negative and significant coefficient. Perhaps anti-Communist films were propaganda vehicles with limited box-office appeal and starring in them could hurt rather than help careers.

In Model 3 we examined heterogeneity of the destigmatization effect among blacklisted artists. Observing differences within the treatment group can provide additional evidence about the direction of the hypothesized differences and indicate bounds for the possible effects. In the aftermath of the Red Scare, blacklisted artists were viewed as victims of political propaganda. In this context, friendly witnesses who cooperated with the HUAC by informing on other artists could be viewed as less deserving of rehabilitation because they collaborated with a morally

questionable cause (even if to protect their careers and lives). Unfriendly witnesses who did not cooperate ought to deserve greater recognition after the end of the blacklist period. We coded the public informing events during the HUAC hearings from the Annual Report of the Committee on Un-American Activities, which was released yearly to the public. The report listed those who testified and whom informed on whom. Based on these data we coded separately dummies for friendly and unfriendly blacklisted artists. In Model 3 we included the two dummies in the regression. The estimates indicate that the significant effects of destigmatization mainly benefited the unfriendly blacklisted artists. This suggests that artists who cooperated in support of the blacklist were not seen as victims and therefore did not benefit when social perceptions changed in the destigmatization period.

Table A.6. OLS Regression of Difference in Average Number of Films Worked for Blacklisted Artists and Associates, and Working in Film, Study 1.

	<i>Difference in Avg. Number of Films:</i>		
	<i>Matched Sample: Blacklisted + Associates + Others. Writers Excluded</i>	<i>Matched Sample: Blacklisted+ Associates + Others</i>	<i>Matched Sample: Blacklisted + Associates + Others</i>
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
Blacklisted	0.359* (0.068)	0.324* (0.044)	
In Anti-Communist Films		-0.869* (0.085)	
Blacklisted Unfriendly			0.434* (0.043)
Blacklisted Friendly			-0.034 (0.172)
Others	0.481* (0.031)	0.401* (0.029)	0.470* (0.030)
Constant	-0.569* (0.021)	-0.451* (0.019)	-0.556* (0.020)
R²	0.04	0.12	0.05

Notes: Standard errors in parentheses. * $p < 0.05$ (two-tailed). Control group is Associates. N=3024 (Model 1); N=3240 (Model 2); N=3240 (Model 3). Difference is calculated across two periods: 1958-1961 vs. 1950-1957.

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