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The Stigma Stability Framework: An Integrated Theory of How and Why Society Transmits Stigma Across History

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ABSTRACT

Psychologists have long treated stigma—the labeling, stereotyping, separation, status loss, and discrimination of social groups—as a static process. Yet recent evidence has shown that, in fact, contemporary indicators of stigma (e.g., racial prejudice, violence against Jewish people) are strongly correlated with historical measures of stigmatization (e.g., slavery, anti-Jewish pogroms, respectively), even over timespans of centuries. What explains this striking persistence? Here, we seek an answer to this question by reviewing the emerging, interdisciplinary body of social science research using big data and computational methods to study long-term historical trends of stigma. We first review perspectives on *why* society is motivated to maintain (vs. change) stigma over history, as well as *how* stigma might be maintained to satisfy such motivations. Specifically, we present an integrated theory, the Stigma Stability Framework, which argues that stigma persists, on average, because society (1) devises new methods to stigmatize the same group (i.e., stigma *reproducibility*) and/or (2) transfers stigma hydraulically between groups (i.e., stigma *replacement*). We use this general framework to organize a diverse set of empirical findings from across the social sciences, which underscore the widespread prevalence of stigma persistence mechanisms. Finally, we close with a discussion of open questions for future research, including how researchers and practitioners can use an historical and multi-level perspective on stigma persistence to design more effective stigma reduction strategies. Indeed, we argue that it is only by shedding light on historical processes that we might hope to durably alter stigmatization in the future.

> *There is no present or future - only the past, happening over and over again—now.*
>
> Eugene O'Neill

> *History doesn't repeat itself, but it often rhymes.*
>
> Mark Twain

It is axiomatic that our society has changed in many ways over history. Practices of sanitation, punishment, building codes, and labor rights are thankfully different today from those of the past. And yet, there are also patterns that seem to persist. Fashion fads return (Apriasz et al. 2016; Belleau 1987), pandemics repeatedly cycle through society (Hsieh et al. 2006), wars recur (Walter 2004) and, most central to the current paper, stigma—the labeling, stereotyping, separation, status loss, and discrimination of social groups (Link and Phelan 2001)—shows striking persistence (Charlesworth et al. 2023; Charlesworth and Hatzenbuehler 2024). Such evidence of "the past happening over and over again" inevitably prompts the question of whether, and if so how, it will ever be possible to durably reduce the stigmatization of social groups.

Motivated by this question, we review an emerging body of interdisciplinary research on stigma across unprecedented timespans. Our review begins in Section 1 with a summary of social science evidence showing correlations between historical and contemporary stigma, as well as an introduction to more recent work using large-scale datasets and computational methods (e.g., natural language processing). Next, in Section 2 we situate these empirical findings within existing theories of *why* society would seek to stigmatize in the first place. Specifically, we highlight that social group stigma is argued to satisfy psychological, sociological, and evolutionary functions (e.g., Hatzenbuehler et al. 2013; Kurzban and Leary 2001; Phelan et al. 2008; Sidanius and Pratto 1999), although these may compete with other functions against stigma such as prosociality (e.g., Zaki and Mitchell 2013). Indeed, we propose that when the reasons for upholding versus mitigating stigma are in competition, the average level of stigma, on aggregate, in society may be strikingly persistent.

Section 3 presents a new integrative theoretical framework for understanding *how* stigma might persist even over long timespans and even when there may seem to be change "on the surface." We outline two broad classes of mechanisms that maintain stigma by (1) developing new means (i.e., the mechanism of reproduction) or (2) finding new targets (the mechanism of replacement) to stigmatize that can create an appearance of change despite deeper persistence. Finally, in Section 4 we discuss the implications of this perspective for guiding future research and informing more effective interventions towards durable reductions in stigma.

1 | Section 1: Does Stigma Repeat Itself?

Over the past few years, psychology (and the social sciences more broadly) have benefited greatly from the Big Data Revolution (Adjerid and Kelley 2018). Researchers now have unprecedented access to massive data, not only about people today but also about people from the recent past (e.g., through archival surveys; Charlesworth, Navon, et al. 2022b) or the much further past of decades or centuries (e.g., through historical texts). In fact, this rise of big historical data has enabled a new subfield of psychology, termed *historical psychology* (Atari and Henrich 2023; Trawalter et al. 2022), and has prompted calls from stigma researchers to increasingly consider the influence of *time* and history (Earnshaw et al. 2022). An emerging body of empirical papers has heeded this call by examining the long-term persistence of stigmatization. Below, we present two different approaches that have been used to explore this question.

1.1 | Social Science Evidence Linking Historical and Contemporary Stigma

While randomized controlled trials and experimental designs are the gold standard for determining causal inference (but see Deaton and Cartwright 2018), they are practically infeasible to study historical stigma processes. As such, the field has begun to exploit the natural variation in history and to draw on methodologies spanning econometrics, sociology, and political science to establish robust inferences about long-term stigma persistence.

One early example of such papers comes from Payne et al. (2019), who combined historical data on U.S. Black slavery in 1860 with contemporary Project Implicit data on anti-Black/pro-White attitudes. The authors found that Southern U.S. counties with higher rates of Black slavery in 1860 had higher anti-Black/pro-White bias among White respondents 150 years later in the 2010s (Payne et al. 2019). Similar correlations have now been shown within Northern U.S. counties: higher rates of Black immigration during the Great Migration in 1900–1950 correlate with greater contemporary anti-Black bias (Vuletich et al. 2023). Additionally, U.S. counties with higher rates of Black slavery in the 1860s have higher contemporary Black-White racial disparities in arrests for drug and violent crime offenses (Ward 2022). Within the U.S. context, contemporary anti-Black attitudes and discrimination thus appear to have deep roots, repeating historical patterns from anti-Black slavery.

Deep roots of stigmatization also exist outside the U.S. For instance, Nunn and Wantchekon (2011) assessed the link between the transatlantic African slave trade (1400–1900) and contemporary levels of (mis)trust within Africa. Individuals who had ancestors in locations raided during the slave trade were found to be less trusting of other groups today (see also Nunn 2008). Additionally, looking at historical stigma persistence over a similar timeframe of nearly 600 years, Voigtländer and Voth (2012) showed that stigma and violence against Jewish people in Germany of the 1920s–40s can be traced back to the medieval ages (1348–50) when Jewish people were blamed for the Black Death plague. That is, German cities with plague-era pogroms in 1348–50 had higher rates of antisemitism in the 1920s–40s, including violence against Jewish people, votes for the Nazi party, and letters to Nazi newspapers (Voigtländer and Voth 2012).

Of course, skeptics may ask whether these big data analyses are merely spurious correlations. But this does not appear to be the case. Rather, most papers test robustness including: (1) ruling out potential third-variable relationships (e.g., showing that both slavery and prejudice could not be explained by the presence of a larger Black population; Payne et al. 2019); and (2) using negative control analyses (e.g., showing rates of slavery in the U.S. South were not associated with current measures of gender or body weight bias; Payne et al. 2019). A third strategy to ensure robust conclusions is testing identification strategies of plausible mechanisms. For instance, in the study by Voigtländer and Voth (2012), one hypothesized mechanism enabling stigma transmission was that many German cities had relatively static populations and could therefore pass down cultural biases through generations and local stories. The authors thus identified that historical transmission should *fail* if there were more movement (trade and immigration) in and out of that location. Indeed, various (relatively) exogenous indicators of this increased "mixing" of people in the intervening years between 1300–1900 correlated with less persistence of anti-Semitism (Voigtländer and Voth 2012).

1.2 | A New Approach to Studying Stigma Over History

This first set of studies examined the long-term transmission of stigma by documenting correlations between indicators of stigmatization across relatively discrete time points (e.g., 1860 and then 2010). Although these approaches have merit, historical transmission of stigma is assumed to be a more continuous and complex process. Consequently, the field requires methods that continuously quantify multiple indicators of stigma across multiple social groups over time.

Acknowledging this need for more continuous data on stigma over time, a new line of research has begun to use natural language processing (NLP) to study indicators of stigma in centuries of text from books and newspapers (Bhatia and Bhatia 2021; Charlesworth, Caliskan, et al. 2022; Garg et al. 2018; for a review Charlesworth and Banaji 2022c). For instance, one NLP tool—word embeddings—uses the patterns of word-to-word co-occurrences to identify relationships among words. This approach enables researchers to use word embeddings to test relationships between stigmatized groups and stereotypic traits (e.g., associations of Black, or Poor, with traits such as "weak," or "helpless"). Moreover, researchers can look at the latent meanings and valence of those traits (e.g., "weak" refers to incompetence and is negative), yielding a more complex and complete understanding of stigmatized group representations. Most excitingly, word embeddings and NLP tools can be trained on any text, even texts from long ago: we and others have now used word embeddings to study stigma continuously back to the 1800s (e.g., Charlesworth, Caliskan et al., 2022).

In recent work, we took a more comprehensive approach to studying stigma transmission across *multiple* groups, which was critical for exploring possible cross-group dynamics of how stigma may manifest and persist, on aggregate, in society (Charlesworth and Hatzenbuehler 2024). We compared the negativity of stereotypes ascribed to 58 diverse stigmatized groups across 100 years of English book text (~500 million fiction and nonfiction books archived on Google books). At least three possible trends in stigmatization were possible in these historical data (as displayed in Figure 1): an average decrease (i.e., towards more positive attitudes across social groups), an average increase (i.e., towards more negative attitudes across social groups), or a net persistence (i.e., stability in negative attitudes across groups). When averaging the trends across the 58 groups, we observed the latter: these negative stereotypes were strikingly stable, with no meaningful statistical evidence of change. And yet we also noted subtle changes in the actual traits used (e.g., referring to a group as "lazy" in 1900 but "helpless" in 2000), as well as in the stigmatized targets receiving the most negativity. These observations mark a turning point in understanding the long-run persistence of stigma over history: they underscore that stigma may not just repeat itself verbatim but, instead, may reappear and reproduce through new means.

2 | Section 2: *When* and *Why* Does Stigma Persist?

For decades, social science research has considered the countervailing reasons that push for upholding versus mitigating stigmatization in society (see Figures 1 and 2). On the one hand, society uses stigma to uphold existing hierarchies, enforce norms, and ensure social cohesion. On the other hand, society seeks to reduce stigma, both for internal (e.g., prosociality) and external (e.g., avoiding sanctions) reasons. Of note, we use the term "reasons," rather than "motivations," to avoid any misconception that these need to be intentional or explicit motivations that are held by individual actors. Rather, these reasons are often implicit, not always accessible to introspection, and can even be misrecognized (Bourdieu 1987).

Moreover, these reasons can unfold at the level of societies, rather than only within individual minds. These societal-level reasons upholding/mitigating stigma could arise in at least two ways. First, individuals hold reasons (e.g., to avoid diseases) and, when aggregated, these become the default reasons for upholding/mitigating stigma in society. Second, society could have emergent reasons beyond mere aggregation of individuals: motives can be embedded in systems, institutions, structures that exist beyond any single individual's personal endorsement or control (e.g., Jones 2000). Emergent motivations could also arise because of pluralistic ignorance, whereby no individual really endorses the belief, but the perception of group-level psychology leads them to conform to a norm, nonetheless. Ultimately, by allowing for the possibility of implicit (alongside explicit) reasons, and by focusing on societal-level (vs. individual-level) reasons upholding versus mitigating stigma, we can offer a new window into when, why, and how stigma might persist.

2.1 | Reasons to Uphold Stigma

So-called "functional perspectives" on stigmatization propose that stigma helps satisfy at least three basic functions in society, summarized as "keeping people in, down, and away" (Phelan et al. 2008, 362). "Keeping people in" uses stigmatization to force others to conform with norms in society, and it is especially likely when a stigmatized status or condition is perceived to be relatively controllable or voluntary (e.g., drug use, body weight; Hinman et al. 2015). "Keeping people down" serves the desire for control over, and exploitation of, resources, as emphasized in social dominance theory (Sidanius and Pratto 1999) and system justification theory (Jost and Banaji 1994). For example, stigma against women and Black people in the U.S. helps exploit and legitimate wealth inequalities based on gender and race. Finally, "keeping people away" serves fears of contagious diseases or pathogens and is often directed towards conditions with physical or mental "marks" (e.g., scars, behavioral abnormalities). This last function is argued to be borne from overgeneralizations of historical, evolutionarily-driven benefits of avoiding illness (Kurzban and Leary 2001; Schaller and Neuberg 2012; Schaller and Park 2011).

2.2 | Reasons to Mitigate Stigma

Yet we are not doomed to stigmatize. First, social actors are motivated towards prosociality, which is argued to be so engrained, and to have so many immediate and long-run benefits (e.g., Jordan et al. 2015), that it is automatic and intuitive

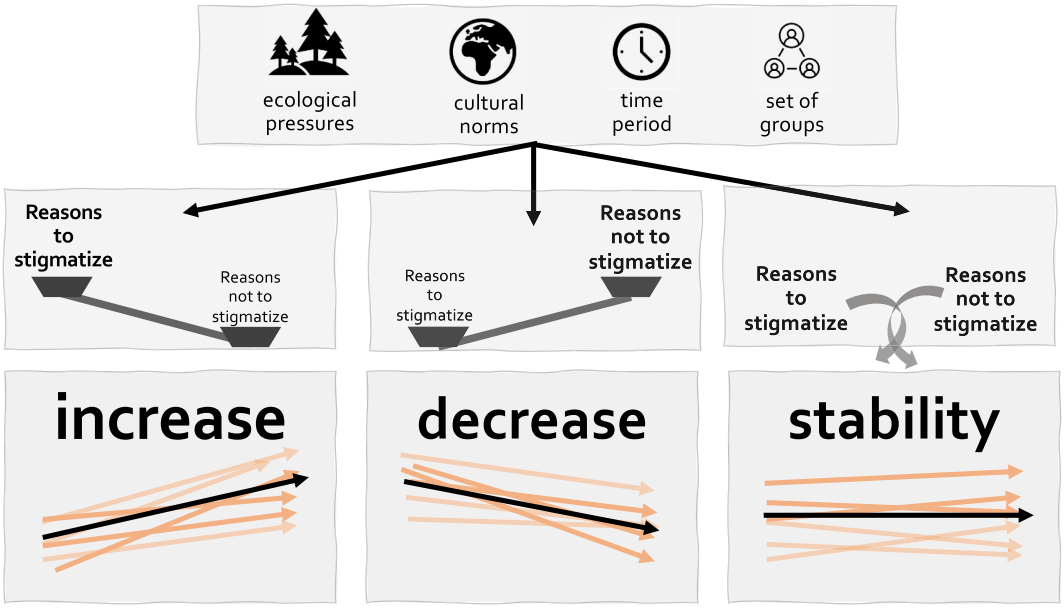

FIGURE 1 | Possible patterns of stigma across history. The top row of the figure illustrates the moderators that could lead to different pressures for upholding versus mitigating stigma, including different ecological pressures (e.g., high vs. low scarcity, pathogen prevalence), cultural norms (e.g., tightness/looseness, collectivism), time periods (e.g., 20th century vs. medieval ages), and sets of groups (e.g., stigmas related to the body vs. to threat). The second row illustrates how the reasons for upholding versus mitigating stigma may be in competition. The third row illustrates how those competing reasons will manifest in different observed patterns of aggregate change in the average level of stigma in society across groups. For example, when reasons for stigma outweigh reasons not to stigmatize, the aggregate pattern would show a general increase in stigma across time. Our focus is on the third pattern of stability and the reasons underlying this persistence.

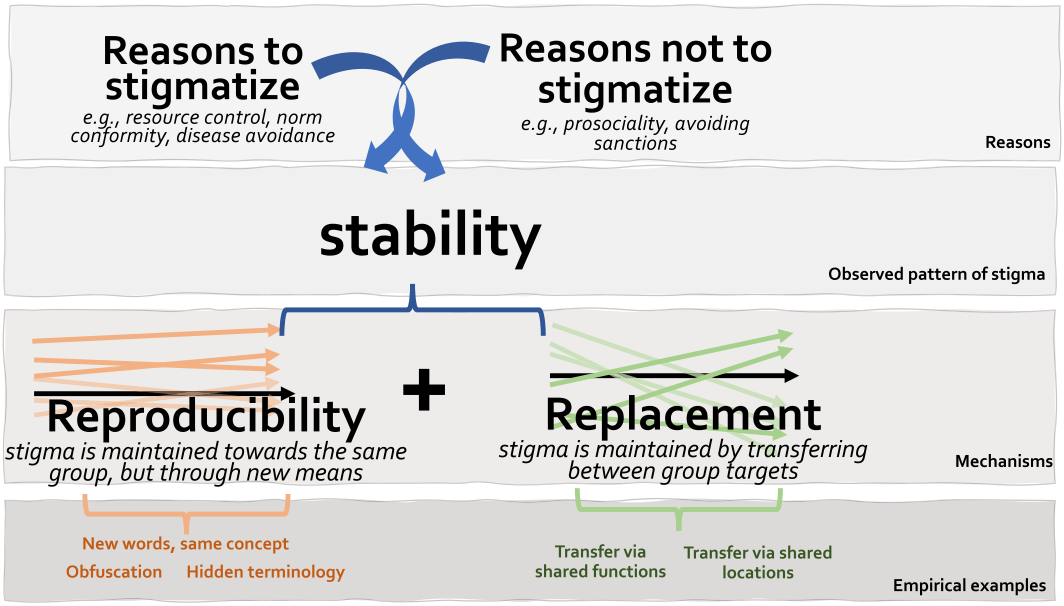

FIGURE 2 | The stigma stability framework: Explaining mechanisms and empirical findings of stigma stability across history. The top row echoes Figure 1 but further elaborates on examples of reasons for upholding stigmatization (e.g., exploitation and resource control) and for minimizing stigmatization (e.g., prosociality). When these two pressures are countervailing (i.e., in relatively equal measure and in competition), then the observed pattern of aggregate stigma will be stability over history (second row). The third row outlines two broad classes of mechanisms—reproducibility within groups and replacement across groups—that help explain how society can both continue to stigmatize but also appear to change in subtle ways. The fourth row provides a few illustrative empirical examples of these mechanisms.

(Zaki and Mitchell 2013). A second, more externally-derived reason not to stigmatize is to avoid sanctions or punishment. For example, as new laws and policies were introduced prohibiting anti-gay bullying in schools (Hatzenbuehler et al. 2022; Hatzenbuehler and Keyes 2013) and sexuality discrimination in the workplace (Webster et al. 2018), the path to stigma of LGBT persons was effectively "blocked." However, these external reasons may end up backfiring and even lead to increased

prejudice (Legault et al. 2011) if they are not accompanied by internal motivations (Devine et al. 2002).

To be clear, these reasons for upholding versus mitigating stigma in society are in conflict, and whether stigma is increasing, decreasing, or stable will likely depend on the culture, time period, and other moderators (e.g., ecological pressures; Figure 1). For instance, in conditions of extreme scarcity or economic conflict, the reasons for enacting stigma may outweigh the reasons against it, thus leading to a general increase in stigma across history. In contrast, in conditions of relative abundance and liberalized cultural norms, the reasons underlying stigma may be lessened, leading to a general decrease of stigma across history. Future research is needed to better understand the dynamics that give rise to these historical patterns of change, in which one direction "wins out." Here, we focus instead on the unique situation where the reasons upholding versus mitigating stigma are countervailing (i.e., actively competing), creating "gridlock" or persistence of stigma across history.

3 | Section 3: *How* Does Stigma Persist?

We previously introduced a new, integrative conceptualization, which we call the *Stigma Stability Framework (SSF)*, to help organize an understanding of *how* society might show the unique pattern of persistent stigma over history (Charlesworth and Hatzenbuehler 2024). The SSF builds on theories that have also proposed long-term stigma persistence, such as Fundamental Cause theory (Link and Phelan 1995; Hatzenbuehler et al. 2013). What is critical, however, is that past theories did not explicitly outline (or offer falsifiable empirical hypotheses about) the mechanisms that might enact such stigma persistence. One of the primary contributions of the SSF is that it proposes two complementary classes of mechanisms—(1) reproducibility within groups and (2) replacement across groups (the third row of Figure 2)—that maintain stigma on aggregate. By aggregate, we refer to the average level of stigma (e.g., stereotype negativity) in society, averaging trends across a diverse sample of stigmatized groups. Here, we refine and further elaborate on the SSF. We use this updated framework to organize a diverse set of empirical findings from across the social sciences (the fourth row of Figure 2) that together illustrate the scope and prevalence of mechanisms of stigma persistence over both short- and long-term history.

3.1 | Reproducibility of Stigma

Broadly, the mechanism of *reproducibility* refers to any instance in which the *same* group is stigmatized over time but the means of doing are altered, disguised, or misrecognized (Bourdieu 1987). Here, we describe three empirical examples of reproducibility, where society uses: (1) new words but the same concepts; (2) complexity and ambiguity; and (3) hidden terminology (e.g., so-called "dog whistles"), to maintain stigma towards the same group but through new means.

3.1.1 | Reproduce Stigma Through New Words

The *Princeton Trilogy* (Gilbert 1951; Karlins et al. 1969; Katz and Braly 1933) is foundational reading for any social psychologist. These three papers documented the traits that three generations of Princeton students attributed to stigmatized racial and ethnic groups (e.g., German, Black, Japanese). Results are often interpreted as showing that racial/ethnic stereotypes have weakened: for instance, comparing students in the 1930s and 1960s, the percentage associating Black Americans with "superstitious" and with "lazy" dropped from 84% to 13% and from 75% to 26%, respectively. However, re-examining these data, Devine and Elliot (1995) highlighted that, despite the ascription of new words to groups, there remains a persistent undercurrent of negativity. For example, although the "superstitious" stereotype faded, new negative stereotypes emerged, such as associations with "low in intelligence" and "criminal."

Since those initial analyses, similar dynamics of persistent negativity despite changes in the associated traits have been documented for many other groups, such as repackaging gendered stereotypes of "hysteria" (Trimble and Reynolds 2016) into stereotypes of women as "emotional" (Plant et al. 2000). Indeed, in two papers, using NLP applied to over a century of English fiction and non-fiction books revealing stigma towards as many as 72 group targets, we have shown that reproducing stigma negativity through new words is the rule rather than the exception (Charlesworth et al. 2023; Charlesworth and Hatzenbuehler 2024). We found that, while many of the top-associated traits changed, the latent negativity, warmth, and competence of those stereotypes were generally much more stable over history.

3.1.2 | Reproduce Stigma Through Complexity and Ambiguity

Complexity around the outcomes of stigma can act as another disguise to reproduce stigma over history. Consider, for instance, the rise of "black box" algorithms now used in resume screening, security screening, criminal judgments, and more. The inherent complexities of these algorithms mean that users often do not understand the training data or process that gives rise to a decision (Bonezzi and Melzner 2022). In using the algorithm, a hiring manager, sentencing judge, or security consultant may simply trust the seemingly-objective algorithmic decisions and argue that they themselves are not accountable for the outcome (Burrell 2016; Martin 2019). Yet audits of these algorithms show that they reflect, and even amplify, biased training data (Caliskan et al. 2022; O'Neil 2017). By adding complexity through algorithms, society both seemingly changes (progresses towards seemingly sophisticated technology) while also maintaining stigma hidden in data.

While hiding stigma through complex algorithms is relatively recent, the general practice has a long history. Research on aversive racism (Dovidio and Gaertner 2004; Pearson et al. 2009) showed that anti-Black stigma was most likely to reveal itself in moments of ambiguity (e.g., when potential job candidates have

more ambiguous qualifications; Dovidio and Gaertner 2000). In these instances, perceivers use the ambiguous situation to appeal to other reasons for their decisions rather than to stigma, thus avoiding sanctions against prejudice and, ultimately, circumventing change.

3.1.3 | Reproduce Stigma Through Hidden Terminology

Finally, stigma can be reproduced through hidden terminology, or so-called "dog whistles," which "repackage" bias in forms that only those "in the know" can detect and use for advantage (Haney-Lopez 2018). For example, as norms, policies, and laws around hiring discrimination have evolved, companies have been required to change. But inequities in hiring endure, with women remaining underrepresented in leadership or tech roles in STEM (Charlesworth and Banaji 2019a). Nichols et al. (2023) showed that one reason for such stigma persistence is the "dog whistle" of appealing to "fit" during the hiring process. While "fit" provides, on the surface, a seemingly legitimate criterion, it nevertheless allows subjectivity (e.g., stigma against some groups) to shape decisions.

A recent investigation of racialized dog whistles drives this point home: Al-Kire et al. (2024) examined how comments of anti-Christian bias are actually dog whistles for anti-White bias. That is, perceivers recognize that they can no longer openly express pro-White/anti-Black attitudes but can still express pro-Christian attitudes. Because these pro-Christian attitudes contain cues to pro-White sentiments, they serve as a "dog whistle" to disguise pro-White sentiments in seemingly more legitimate forms. Notably, this last example also begins to incorporate the complementary mechanism of stigma *replacement*, because it includes stigmatization *across* groups (e.g., White to Christian). We turn to this mechanism next.

3.2 | Replacement of Stigma

In some cases, the social climate changes in such a rapid and widespread way that stigmatizing the same target group (even in disguised, reproduced means) is no longer possible (e.g., norms, policies, and laws against lesbian and gay stigma in the U.S.; Kumar et al. 2023). Rather than seek to reproduce stigma towards the same target, society may instead seek out altogether new groups to stigmatize. That is, perhaps the average stigma in society operates in a hydraulic fashion: as stigma towards one group decreases and becomes "blocked," a new group, or set of groups, may come to bear the brunt of the old stigma.

An interesting question, then, is predicting *which* new group target(s) may become stigmatized. Here, we review empirical evidence suggesting at least three strategies for stigma transfer between groups: (1) selecting a new group that is related to the formerly stigmatized group (e.g., has a similar meaning or that serves the same function); (2) creating a new subtype within the group; or (3) choosing a new group located in the same geographic location. As in the case of stigma reproducibility, these three strategies are not mutually exclusive, and more than one can operate simultaneously.

3.2.1 | Transfer of Stigma Through Shared Functions

Over the same period that anti-gay attitudes have declined, policies and hate crimes targeting transgender people have skyrocketed. In 2023, the number of bills targeting transgender people (e.g., bills limiting access to sports, gender-affirming care, or bathrooms) increased by 900% (Human Rights Campaign 2023). The pairing of both decreasing anti-gay attitudes and increasing anti-trans policies raises the hypothesis that there could be a "transfer" of prejudice between gay and transgender targets (Charlesworth and Banaji 2019b). Indeed, reviewing anti-transgender stigma in the U.K. today, Mclean (2021) explicitly notes the historical transfer between these targets, wherein the arguments of anti-transgender lobbyists "are reminiscent of accusations made against gay schoolteachers in the 1980s" (p. 475). This transfer may arise because both groups refer to minority sexual orientation/gender identity and both are conceptualized as serving similar functions of norm conformity and pathogen avoidance (van Leeuwen et al. 2022).

There is relatively more evidence suggesting stigma transfer between race and gender targets, such that White women are threatened by racism, and racial minorities are threatened by sexism (Chaney et al. 2021; Sanchez et al. 2017). These two highly-discussed stigmas of gender and race are both motivated by resource control functions and may therefore become yoked to one another. Perhaps, then, as negative racial attitudes have declined in the U.S. alongside rising norms against the expression of anti-Black prejudice (Bobo et al. 2012; Charlesworth and Banaji 2022a), deeper entrenchment of gender stigma (including anti-transgender stigma) may come to take its place. Although plausible theoretically, empirical evidence on whether stigma shifts between group targets remains weak, and our own research suggests that it may be relatively rare (Charlesworth and Hatzenbuehler 2024). These predictions thus remain to be tested (and possibly falsified) in future work.

3.2.2 | Transfer of Stigma Through Subtyping

So far, we have discussed group-based stigmas with reference to large (superordinate) categories such as gender, race, or sexuality. But group categories also contain subtypes, such as "businesswomen" or "dark-skinned Hispanic people," that are perceived to deviate from the prototypical group member of the superordinate group stereotype (e.g., from "the average woman"; Richards and Hewstone 2001; Wade and Brewer 2006). For decades, subtyping has been studied as a means for individual perceivers to resist stereotype change in their superordinate stereotypes because it allows them to maintain their superordinate stereotype (e.g., "women belong in the home") and simply set aside counter-examples (e.g., of a working woman) as rare, deviant instances (Gershman and Cikara 2021; Maurer et al. 1995). Similar processes of subtyping

could operate to resist stigma change at the macro, societal level, when perceivers consensually agree that counter-stereotypic individuals are sufficiently deviant and should be subtyped.

However, considering the evidence that many superordinate stereotypes are changing, such as stereotypes about women or Black people in the U.S. (Charlesworth and Banaji 2022a, 2022b), we suggest another way that society may now be using subtyping to transfer stigma. Specifically, society may *create* new subtypes, such as "working women" (Saad 2021) or intersectional groups of Black or poor women (e.g., Boustan and Collins 2013; Coles and Pasek 2020), that can bear the brunt of the old stigma. Subtypes inherit the negative stigma and thus allow change towards the superordinate group through transfer of stigmatization to the new subgroup. Similar dynamics might explain why society creates increasingly fine-grained distinctions of *dark-skinned* Black or Hispanic individuals, who receive strong stigmatization (Noe-Bustamante et al. 2021; Uhlmann et al. 2002), even as broader racial bias decreases (Charlesworth and Banaji 2022a).

3.2.3 | Transfer of Stigma Through Geographic Proximity

Stigma replacement could also occur because new targets are, in essence, in "the wrong place at the wrong time," and thus linked through shared geographic location. The history of the Lower East Side (LES) in New York City provides such a case study (Jackson 2010). Over the 19th and 20th centuries, the LES saw waves of successive immigration from Germans, Italians, Eastern European Jews, Eastern Europeans more generally (e.g., Polish, Hungarians, Greeks) and, most recently, from East and South Asian populations. After each wave, earlier-arriving groups (e.g., German, Polish) became less stigmatized (even being incorporated into "Whiteness"; Warren and Twine 1997). However, this decreasing stigma was seemingly at the cost of increasing stigma towards later-arriving populations. Recently, Cikara et al. (2022) showed that, as minority ethnic/racial groups increase in relative population (e.g., as Asian people become more prevalent relative to Black people in a U.S. county), stigma transfers to the group with the highest relative population. Thus, stigma transfer can happen via the chance occurrence of shared location. Of course, what begins as mere happenstance could later evolve into a "functional" mechanism (e.g., when groups increase in relative size they may be perceived as threatening, and thereby leverage stigmatization to enforce norms).

Although we review three predictable processes of stigma transfer (via shared meaning, subtypes, or shared location), it is of course also possible that the next target of stigma may represent a stochastic process. Much like the game "whack-a-mole," it is possible that the transfer of stigma between groups has some degree of unpredictability. Future work could use tools from agent-based modeling and complexity science (Flood and Carson 1993) to better model such randomness in cross-group relationships (e.g., Galesic et al. 2021).

4 | Section 4: Is There Hope for Reducing Stigma?

A simple reading of the arguments so far might suggest the pessimistic conclusion that change is impossible. But that would be a misreading of our argument and our framework. First, as outlined in Figure 1, it is possible that other cultures, time periods, or ecological conditions could prompt different aggregate patterns (e.g., of long-term decreases) than what we have observed in predominantly Western, English records over the past century (Charlesworth and Hatzenbuehler 2024). Future research in diverse cultures (e.g., using multi-lingual embeddings; Charlesworth et al. 2024) will be critical for uncovering, and understanding the boundary conditions for, long-term change that could be replicated within Western contexts.

Second, as outlined in Figure 2, underlying the *Stigma Stability Framework* is the idea that society enacts stigma because it is used to satisfy basic psychological and sociological functions (e.g., norm conformity, resource control). The foundation for this idea is a long history of theorizing about the basic motives and opportunities driving stigma in society (Jost and Banaji 1994; Kurzban and Leary 2001; Phelan et al. 2008; Sidanius and Pratto 1999). In these past theories, as in the current framework, the hypothesis is simple: so long as these reasons pushing for stigma remain strong (and stronger than any countervailing reasons against stigma; Figure 1), so too will stigmatization occur in some form(s), towards some target(s). However, if interventions can be designed to address these basic reasons for stigma, and/or to heighten reasons to mitigate it (e.g., through promoting internal motivations to reduce prejudice; Legault et al. 2011), then we are hopeful that stigma will not inevitably reproduce and replace itself forevermore.

For instance, consider the possibility of using Universal Basic Income (UBI)—a policy tested over the past few decades in diverse countries including India, Iran, and Canada—to resolve the fundamental need for resource control. Perhaps, in conditions of UBI, society may be less prone to the zero-sum thinking that demands that some group remains "at the bottom," thus limiting the pressures towards stigma reproduction and replacement. In this way, UBI is an indirect intervention: it does not mention stigmatized groups and does not directly target the stereotype content; instead, it targets the basic reasons for stigma in the first place. Given evidence that stigma is enacted to satisfy basic functions, as well as evidence that most direct interventions appear largely ineffective at durably reducing stigma (Paluck et al. 2021; Rao et al. 2019), we suggest that a *combination* of both indirect (e.g., targeting basic functions) and direct (e.g., targeting stigma content) strategies likely provide the best hope for change. Much like a gardener first needs to address the soil before worrying about which plants to grow, it is critical to lay the groundwork for direct interventions to take root.

Ensuring more successful and durable stigma change will require continued research on where, why, and how stigma persists. Table 1 outlines numerous open questions for such pursuits. For instance, as we and others (Link and Phelan 2001) have emphasized, stigma persistence likely relies on multiple, mutually-reinforcing mechanisms. This begs the question of

TABLE 1 | Open questions in studying stigma persistence over history.

Question	Explanation and methodological opportunities
What is the effect of large-scale social events on disrupting stigma and persistence mechanisms?	Past work has shown that social events, such as same-sex marriage legalization (Ofosu et al. 2019), can disrupt stigma. But how enduring are those effects? A few quantitative studies have shown, for example, that the gains of the Civil Rights movement (e.g., reductions in racial health inequities) were short lived (Krieger et al. 2008). The increased availability of historical data will newly enable more systematic tests of whether past societal events (e.g., protests, elections, wars) can durably change stigma, or whether stigma reappears and reproduces after these events.
What is the role for minority groups in shifting the trajectories of societal stigma?	In the current framework, we are largely considering the competing forces for upholding versus mitigating stigma as they play out in those majority groups who hold power to enact stigma (e.g., White people). But minority groups can also influence the trajectories of societal stigma. Future research using texts from minority groups (e.g., Black newspapers) will be critical to uncover whether and how stigma persists or changes in these communities.
How do multiple components of stigma (labeling, stereotyping, discrimination) interact to persist over history?	Stigma is an all-encompassing term that includes multiple components of labeling, negative evaluations/stereotypes, and discriminatory behavior (Link and Phelan 2001). Although most research to date has focused on stereotypes, increasingly large and multi-modality datasets (e.g., including discriminatory behavior in health or hiring outcomes) can address historical dynamics *between* these components of stigma.
How does stigma persistence differ across cultures?	Given differences across cultures in their histories, ecologies, and norms, we might also expect cultural differences in the degree to which they hold motivations to maintain or change stigma. As cross-cultural (and cross-linguistic) datasets become more available, we can consider whether, for example, cultures with tighter norms (e.g., more pressure for conformity) show more evidence of maintaining stigma over time.
Does stigma always disguise itself in more "legitimate" or seemingly acceptable forms?	Most historical evidence of stigma persistence suggests that stigma is often disguised over time to make it seem more legitimate and less discriminatory. Does it always transform into more subtle forms? Or are there also examples in which stigma persists because efforts to uphold it are just as overt but perhaps misrecognized (or open to alternative explanations)?
How does society choose which mechanisms (replacement, reproducibility) to use?	As we emphasized in the main text, we expect that the mechanisms of replacement and reproducibility are complementary and could happen simultaneously or sequentially. How do societies navigate between these strategies? For instance, do societies try one strategy (e.g., hidden terminology) and, if it doesn't work, try another (e.g., adding complexity)?
Can historical measures of stigma help explain health consequences of structural stigma across the life course?	Structural stigma (e.g., laws, social attitudes) is known to shape adverse health outcomes (Hatzenbuehler et al. 2024). However, existing approaches are limited in their ability to measure early-life or intergenerational exposures to structural stigma. For instance, LGBT people born during the pre-Stonewall era (prior to 1969) were exposed to distinct forms of structural stigma not captured with measures of current stigma. Now, historical trajectories of structural stigma, obtained via NLP methods, can be linked to a variety of health datasets and reveal how trajectories of past stigmatization affect health across the lifespan.

how society might choose *which* strategies to use under which contexts. Why do some contexts use hidden terminology and others ambiguity? Does society shift between multiple strategies and, if so, is there a discernible order to the selection of these strategies? And what structural, cultural, and historical factors might disrupt the persistence of stigma over time?

5 | Conclusion

We stand now at a critical moment in the study of stigma change. The unprecedented availability of historical data, alongside increasingly sophisticated computational methods to analyze them, has made it possible to quantify the transmission of stigma across centuries of human history, sometimes showing striking persistence. Equally crucial, however, is a diverse set of empirical findings suggesting the various ways that stigma persists not merely through repetition but, rather, through new disguises that alter the methods or the targets of stigma. Only by uncovering, and testing, these new ideas of stigma persistence across history can we hope to guide more effective and durable interventions to reduce stigma into the future.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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