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A systemic approach to the psychology of racial bias within individuals and society

Allison L. Skinner-Dorkenoo 🖗 1 🖂, Meghan George 🖗 2, James E. Wages III 🕲 3, Sirenia Sánchez 🖗 2 & Sylvia P. Perry 🕲 24.5 🖂

Abstract

Historically, the field of psychology has focused on racial biases at an individual level, considering the effects of various stimuli on individual racial attitudes and biases. This approach has provided valuable information, but not enough focus has been placed on the systemic nature of racial biases. In this Review, we examine the bidirectional relation between individual-level racial biases and broader societal systems through a systemic lens. We argue that systemic factors operating across levels – from the interpersonal to the cultural – contribute to the production and reinforcement of racial biases in children and adults. We consider the effects of five systemic factors on racial biases in the USA: power and privilege disparities, cultural narratives and values, segregated communities, shared stereotypes and nonverbal messages. We discuss evidence that these factors shape individual-level racial biases, and that individuallevel biases shape systems and institutions to reproduce systemic racial biases and inequalities. We conclude with suggestions for interventions that could limit the effects of these influences and discuss future directions for the field.

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¹Department of Psychology, University of Georgia, Athens, GA, USA. ²Department of Psychology, Northwestern University, Evanston, IL, USA. ³Department of Psychology and Counseling, University of Central Arkansas, Conway, AR, USA. ⁴Institute for Policy Research, Northwestern University, Evanston, IL, USA. ⁵Center for Advanced Study in the Behavioral Sciences, Stanford University, Stanford, CA, USA. ^{Ce}-mail: allison.skinner@uga.edu; sylvia.perry@ northwestern.edu

Introduction

The field of psychology so far has primarily focused on racial bias at an individual level, centring the effects of various stimuli on the racial biases of individuals¹⁻¹¹. Racial bias refers to favouring or providing preferential treatment to members of one racial group over another. There is no doubt that the approach of focusing on personally held racial prejudices and discrimination has provided valuable information about the psychology of racial biases. However, this approach largely ignores the systemic nature of racial biases and the ways in which racial biases are shaped by the broader cultural systems in which people live¹²⁻¹⁴. For instance, the focus on individual-level biases has contributed to the burgeoning industry of diversity and implicit bias trainings¹⁵ that aim to address problems such as police brutality against Black people¹⁶. Although potentially useful for changing individual attitudes and/or biases, these interventions seem unlikely to adequately address the underlying causes of bias, which stem from the systems and structures that create and reinforce racial inequality.

The overemphasis on the individual level in research on racial biases seems to have come at the expense of psychological research and theorizing about the impact of broader contextual factors, and how individual-level racial biases reinforce broader systemic patterns of oppression. Models of nested levels of influence in the study of race relations¹⁷, human development¹⁸ and culture^{19,20} can be used to consider the relation between racial bias and broader systemic factors (Fig. 1). Each level of influence influences the innermost level of individual attitudes, and conversely, individual-level attitudes also influence systems²¹.

Five key systemic factors - power and privilege disparities, cultural narratives and values, segregated communities, shared stereotypes, and nonverbal messages - influence racial bias across the nested levels of this framework. Although they are certainly not the only systemic factors that influence racial biases, we focus on these five because we believe them to be particularly relevant to the development of racial biases in the contemporary USA. At the innermost level are the most proximal influences on individual-level racial bias - personal and interpersonal experiences, such as socialization from caregivers and interracial friendships. These experiences are nested within communities and institutions that set the local context for interpersonal experiences, such as the racial diversity in a school or neighbourhood community. Communities are situated within a broader cultural context that shapes the norms, values, and beliefs that structure society. At the outermost level are temporal influences, which capture how past interpersonal, institutional or community, and societal influences continue to influence members of society throughout their lives. Although the primary focus is on how each level of influence affects individual-level attitudes, the levels also influence one another. For instance, culture can shape organizations and interpersonal experiences within that culture, as well as individual-level biases. Likewise, individual-level racial biases can mould interpersonal experiences, which can shape factors at the organizational and community level.

In this Review, we recognize the bidirectional relation between individual-level racial biases and broader societal systems across levels of influence. In some cases, there is clear evidence of the causal chain from system to individual and from individual to system, whereas in others, there might be evidence of an association, but the direction of influence is unclear. In many cases, individual-level biases and broader societal systems might be mutually reinforcing, but for clarity we take the approach of assessing each direction of influence separately. We examine the role of power and privilege, cultural narratives and values, racial segregation, shared cultural stereotypes and nonverbal signals in racial bias. In each section, we first discuss what is known about the contextual factors that produce and reinforce individual-level biases before highlighting how individual-level biases shape institutions and systems. Although our primary focus is on how these systemic factors influence racial biases, we also use the nested levels of influence framework to examine how individual-level racial biases held by the public can contribute to the reinforcement and perpetuation of systemic oppression at the interpersonal, institutional and/or community, societal and temporal levels. We conclude with implications for interventions aimed at reducing racial bias and discuss future directions for research.

To appropriately analyse the factors that perpetuate racial bias at a systemic level, it is critical to contextualize within culture. We focus on the USA because it is the context that we have the cultural knowledge to discuss and where most research on racial bias development has been conducted. The racial context of the USA is distinct in several ways. Notably, white European colonizers violently stole the land that comprises the USA from indigenous inhabitants across multiple centuries²². Furthermore, the enslavement of Black people was legal and common practice for over 200 years in North America^{23,24}. Citizenship was largely restricted to white people for most of the history of the USA, with full citizenship not open to people of all ethnicities until 1952 (ref. 25). Throughout this history, white people have accrued power, wealth, status and numerical majority status through systems that intentionally oppress and marginalize people of colour, including Native Americans, African Americans and members of other ethnic groups. Although modern laws bar racial discrimination, substantial racial inequalities between white people and people of colour persist in the USA, in areas including wealth, education and health²⁶⁻²⁸. Given this history of racism in the USA, the systemic factors that perpetuate racial biases into the present might be somewhat distinct from other contexts. Despite this focus on the USA, this Review could be valuable for understanding similar patterns of bias and oppression outside the USA. Some of these similarities are highlighted in the book Caste: The Origins $Of Our Discontents^{29}$ – which draws parallels between the systems of oppression of Black people in the USA, Jewish people in Nazi Germany and Dalit people in India. Although thoroughly analysing such parallels is beyond the scope of this Review, we briefly discuss systemic factors that perpetuate biases based on socially constructed categories - such as race - in other cultural contexts in the concluding section.

Power and privilege disparities

Power and privilege disparities set the initial conditions within which other factors operate. Systemic inequalities in the distribution of power and privilege serve as the societal backdrop in the USA, directly contributing to individual-level racial biases. Many residents of the USA grow up in an environment in which their doctors, lawyers, teachers, government officials, entrepreneurs, and people occupying other respected roles are white³⁰⁻³³. Thus, to these residents, the USA might look like it 'belongs to' white people.

Children who are socialized in an unequal society, without systemic explanations for why power and privilege have been concentrated among certain people, often internalize that system³⁴. Both children and adults tend to conclude that the way things are structured in society is the way they should be³⁵⁻⁴². For example, experimental evidence suggests that children in the USA tend to prefer people who are relatively more fortunate, even if that good fortune is simply due to luck⁴³, and when given the opportunity to rectify existing resource

inequalities, they often exacerbate inequalities by giving more to the person who already has more resources⁴⁴. These laboratory findings suggest that when children are socialized in an environment in which people in a particular social group have more resources, they will tend to favour people in that social group and distribute resources in ways that perpetuate resource disparities. Thus, in the USA – where racial wealth disparities are large and growing²⁸ - systemic inequalities predispose children to infer that white people are better than and deserve to have more than people of colour⁴⁵. Among adults, markers of structural racial inequalities can also predict racial bias. Attending a university with few faculty members of colour, living in an area that has high poverty rates among Black residents and living in a community with low economic mobility all predict heightened implicit bias against Black people among non-Black American residents^{7,46}. In other words, children and adults are motivated to justify the systems in which they are socialized^{41,42}.

When progressive changes in society challenge ingrained expectations of inequality, racial biases can be heightened. White residents of the USA who were exposed to information about the increasing racial diversity of the USA subsequently exhibited increased bias favouring white people relative to those who were not exposed to this information⁴⁷⁻⁵⁰. Emphasizing the racially historic milestone of Barack Obama being elected as president of the USA also increased implicit pro-white bias among white American residents, relative to those who were not exposed to this information⁵⁰. This research suggests that racial inequalities at various levels of influence – from local communities to the broader cultural context – can lead people to believe that inequality is natural and justified, and that racial progress that challenges those inequalities might further intensify individual-level racial bias.

Next, we turn to the role of individual-level racial biases in perpetuating systemic racial inequalities. Individual-level racial biases have been argued to impact systemic disparities in power and privilege in a variety of domains, including government representation, population health, education, employment, and immigration⁵¹. Perhaps the most direct impact of individual-level racial biases on systemic outcomes can be seen in voting behaviour. Greater individual-level anti-Black bias was associated with a lower likelihood of voting for Barack Obama in the 2008 American presidential election and reduced support for his healthcare reform proposal^{52,53}. With regard to health, white residents of the USA (especially those with higher racial bias) were less supportive of COVID-19 pandemic precautions when they were more aware – based on prior knowledge or experimental exposure to information - that COVID-19 was disproportionately affecting people of colour in the USA⁵⁴⁻⁵⁶. Other work has tied racial disparities in health and healthcare access to the average individual-level bias against Black people held by white residents in their county of residence^{53,57}. In locations where white residents had higher racial biases, Medicaid disability expenditures (which particularly benefit people of colour) were lower, and Black residents had reduced access to healthcare and increased rates of circulatory-disease-related death^{53,57}. Educational disparities have also been linked to individuallevel racial biases. In American counties where the individual-level bias against Black people is stronger, there are larger racial disparities in school disciplinary actions, with Black students being subjected to more suspensions, expulsions, and referrals to law enforcement than white students⁵⁸. These findings suggest that individual-level biases of residents of the USA can influence presidential elections, community health inequalities and school disciplinary actions, reflecting long-term temporal impacts on the privilege and power afforded to people of colour at cultural, community, and interpersonal levels.

In sum, racial disparities in power and privilege have been built into the societal system of the USA, resulting in wide-ranging effects on the life outcomes of residents of the USA. This system also affects the

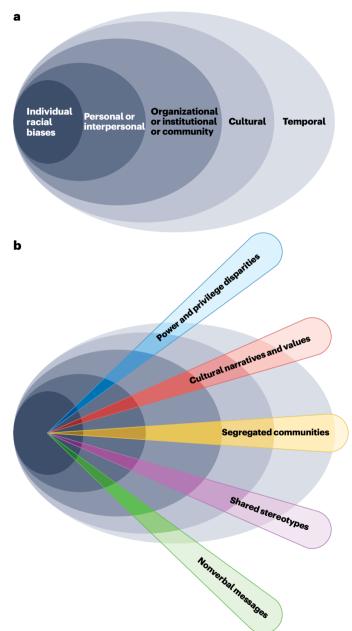


Fig. 1 | **Diagram of nested levels of influence. a**, The nested-levels framework focuses on how each systemic level of influence influences individual-level attitudes, and how individual-level attitudes influence systems. The most proximal influences on racial bias are personal and interpersonal experiences, which are nested within communities and institutions that set the local context for interpersonal experiences. Communities are situated within broader cultural contexts that shape the norms, values and beliefs that structure society. At the outermost level are temporal influences, which capture how past manifestations of these systems continue to influence members of society. **b**, There is a bidirectional influence from each of the systemic levels to the individual level and from the individual level back out to each of the systemic levels, within the five factors discussed in the Review.

attitudes of those living within the system, leading to expectations of inequality and beliefs that inequality is justified. These beliefs and expectations then motivate the individuals that make up the system to behave in ways that maintain the system of inequality, such that individuals' attitudes reinforce the system of inequality that produced them.

Cultural narratives and values

The concentration of power and privilege among white people in the USA means that white people largely write the histories, set the norms and define the values of American society. This centring of white people can be seen in historical narratives, cultural products and cultural beliefs, which can all contribute to the development of individual-level racial biases⁵⁹. Below, we discuss the role of each of these aspects of culture in shaping racial biases.

Historical narratives

Historical narratives can play an important part in how people view themselves and others in society¹⁰. In educational curricula in the USA, national history tends to be taught through a white-affirming lens, such that the attitudes, values and perspectives of white people are implicitly or explicitly justified by the historical narrative^{60,61}. The perspectives and experiences of people of colour are often omitted from curricula entirely. For instance, despite their many historical contributions to the USA⁶², Asian Americans are vastly underrepresented in American textbooks⁶³⁻⁶⁶.

For much of the history of the USA, when people of colour were discussed in textbooks, they were described with derogatory and dehumanizing stereotypes that justified their marginalization^{60,67}. Moreover, egregious acts perpetrated by white people have often been presented in a sanitized way that minimizes, glosses over, and justifies them⁶⁸⁻⁷⁰. As an example, 'manifest destiny' (the worldview that white people were destined to expand their territory to the west coast of North America) is often presented uncritically as a justification for atrocities that white people committed against the original Native American and Mexican inhabitants of the continent^{60,71}. Similarly. Confederate symbols - which celebrate the southern American states that went to war with northern American states to maintain the institution of slavery – are argued to be a race-neutral representation of Southern pride in some textbooks and by some modern pundits and continue to be displayed at some courthouses⁷²⁻⁷⁴. The way history is usually portrayed in American society therefore obscures the relation between contemporary systems and racial injustices of the past⁶¹. Some states have even created laws explicitly barring the teaching of critical history related to race⁷⁵.

The way history is presented in society shapes individual-level attitudes about race and racism. School curricula can be vital contributors to ethnocentric biases in childhood⁷⁶. Furthermore, adults who have less knowledge of the racial injustices of the past tend to be less aware of present-day racism⁷⁷. Exposure to historical narratives that centre white people and glorify the nation reduce awareness of racial injustices among school children, college students, and adult museum visitors^{70,78}. Furthermore, experimental evidence suggests that exposure to the Confederate flag (versus no exposure to the flag) can increase racial biases and promote racial injustice⁷⁹. Thus, how history is portrayed at a cultural level, in textbooks, and in community schools and institutions (such as museums and memorials) has the potential to influence individual-level racial biases.

Individuals receive and simultaneously reproduce and uphold these historical narratives. For instance, it was argued in 1963 that the individual-level racial biases of historians were to blame for the history of Native Americans being oversimplified, mischaracterized and/or overlooked entirely⁸⁰. Although there have been changes to the framing of the history of the USA over the intervening 60 years, many of the issues identified persist to this day⁸¹. For example, Christopher Columbus is still often credited with and praised for 'discovering' North America, even though it was already inhabited by thriving interconnected societies of millions of people²².

The effects of individual-level biases can also be seen at the community and interpersonal levels. The same history and culture can be represented differently depending on who is curating and constructing the representation 78,82 . As an example, students who reported that being white was central to their identity reported more negative attitudes towards Black History Month representations that were curated and displayed in schools in which the majority of students were Black (versus those that were curated and displayed in schools in which the majority of students were white)⁷⁰. This finding is particularly meaningful because Black History Month representations in schools with a majority of Black students were generally more supportive of antiracism than those in schools with a majority of white students. Another study provided evidence that patrons of the Ellis Island Immigration Museum tended to identify exhibits that painted the USA in a positive light as more important than exhibits highlighting historical injustices⁷⁸. Patrons who reported more assimilationist attitudes - such as believing that to 'be truly American' means speaking English - particularly disliked the exhibits highlighting historical injustices. All of these findings converge to suggest that individual-level biases shape the way people in the USA think about and portray history at personal, community, cultural and temporal levels.

Cultural products

At a societal level, the cultural products - such as art forms, varieties of dress and appearance, and styles of speech - of white people tend to be the most highly regarded. The art, music, and dance that are most culturally valued in the USA are rooted in white European traditions^{83,84}. For instance, professional dance schools largely focus on ballet and modern dance⁸⁵ and music departments primarily emphasize classical music education – marginalizing the study of dance and music traditions developed by artists of colour^{86,87}. Expectations for appropriate dress and communication are also centred around norms established by white Americans. In some cases, schools⁸⁸ and workplaces⁸⁹ have created policies and municipalities have passed laws⁹⁰ prohibiting styles of dress that are culturally linked to people of colour, such as durags, hijabs, and sagging pants. Even when these marginalized styles are not explicitly banned, there might be added scrutiny of individuals who wear them⁹¹. As an example, Black women are often expected to conform to white femininity norms by straightening their hair to be perceived as professional^{90,92,93}. Furthermore, grammatical rules and standard linguistic styles in the USA are based on the language practices of white Americans⁹⁴ and deviations from these norms – such as use of African American Vernacular English (AAVE) - are often cited as evidence of inferiority⁹⁵⁻⁹⁸. Although there can be conditional acceptance and appropriation of elements of the cultures of people of colour such as styles of dress⁹⁹, the typical situation is the prioritization of cultural products of white people.

In summary, the cultural products of people of colour are devalued and stigmatized at a societal level, which results in individual-level biases against those who use and produce these cultural products. This contribution to individual-level racial bias is particularly insidious

because it creates conditions under which people can obliviously perpetuate racial biases, believing their bias to be against the cultural products they perceive as inferior rather than the people associated with the products. In one hypothetical scenario at an interpersonal level, parents might pass along individual-level racial biases to their children when parents conclude that the classmate with dreadlocked hair (a hairstyle with African roots that is common among Black Americans) looks like a troublemaker. In this way, Americans can look down on Black people who engage with Black cultural products – like listening to hip hop music, having dreadlocks or using AAVE – while still believing themselves to be 'not racist'. Devaluing Black cultural products perpetuates racism, because doing so suggests that Black culture is inferior to white culture.

Individual-level biases can also feed back to contribute to the reproduction of biased cultural products. White people are more likely than people of other races to rise to positions of economic power and influence¹⁰⁰, and therefore to enact their individual biases and serve as gatekeepers for the promotion of certain cultural products over others. At the most extreme, individual-level biases of white people in power have resulted in cultural genocide, such as through Native American boarding schools, which systematically destroyed Native American families and communities¹⁰¹. The white people who created and promoted Native American boarding schools argued that Native American communities were dangerous and that Native children needed to be rescued by 'good Christians'¹⁰². These arguments were consistent with widespread beliefs about the cultural inferiority of Native Americans, which allowed racist policies, such as those forcing all Native American children to live in boarding schools that barred them from practising their culture, seem acceptable.

Evidence of the effects of widely held individual-level white-centric biases can also be observed on a cultural level in academic fields, influencing their methods, standards, and knowledge bases (for example, in mathematics^{103,104}, psychology¹⁰⁵, and written composition^{87,94}). As an example, individual-level biases towards white cultural products arguably led to the development of writing standards that privilege white styles of discourse¹⁰⁶. From a historical perspective, although Native Americans had a diverse array of numeric systems that were still in use at the turn of the twentieth century¹⁰⁷, individual-level biases towards white people and culture led 'Western mathematics' to be established as the standard for mathematics education in the USA, marginalizing indigenous knowledge¹⁰³. The effect of individual-level biases among key decision-makers can also be seen in policy decisions, such as whose cultural holidays are officially recognized as public holidays¹⁰⁸ and whose cultural knowledge frames the questions used in standardized testing^{109–111}.

Cultural beliefs

Widely held cultural beliefs and philosophies can shape the way in which individuals make sense of society, contributing to individual level racial biases. In the USA, the 'American dream' – which asserts that anyone can achieve success if they are willing to put in the work – is a dominant philosophy in government, education and the media. The belief that people who merit success will ultimately achieve it can serve as a beacon of hope for those who are striving to raise their social status, while also justifying to people with the highest status that they have rightfully earned their positions. Thus, promoting the American dream reinforces tendencies for people to justify and reinforce the systems of inequality in which they were socialized^{41,42,112,113}. Indeed, priming American residents with messages promoting meritocracy (versus other types of messages) can reduce recognition of unearned

privilege¹¹⁴ and increase blame placed on people disadvantaged by societal systems¹¹⁵. Given the many racial inequalities in American society, teaching children that people who deserve success achieve it conveys the implicit message that most people of colour do not merit the status and success that white people enjoy in the USA⁴⁵ – imparting individual-level racial bias.

Racially colourblind ideology (the idea of disregarding the issue of race) is another cultural philosophy that can contribute to the perpetuation of individual-level racial biases. Polling data from 2020 indicated that approximately 40% of American residents believed that paying less attention to race would improve racial inequalities in society¹¹⁶. Yet, evidence suggests that racially colourblind messages provide a way for racially biased messages to discreetly influence public attitudes. For example, white Americans are much more likely to be persuaded to adopt policy positions through subtle racial appeals referring to Black people - such as references to the 'inner city' or 'culture of poverty' than they are to be persuaded by explicit racial appeals that refer to Black people as lazy and uneducated welfare recipients^{117,118}. Politicians have deliberately used these 'dog whistles' to capitalize on racial stereotypes and gain public support for racist political agendas^{119,120}. Even ostensibly well intentioned colourblind attitudes and policies can perpetuate racial biases¹²¹. For instance, exposing children to the racially colourblind mindset, compared to a diversity mindset, reduced their ability to identify racially biased incidents and appropriately report them to teachers¹²². Promoting racial colourblindness at a societal, institutional or even an interpersonal level can reduce individual-level awareness of systemic racism and increase susceptibility to racially biased messages.

In the reverse direction, individual-level racial biases can also influence cultural beliefs. Americans with higher levels of racial bias tend to report a stronger belief in meritocracy^{123,124}. Moreover, young, white adults with relatively high socio-economic status are more likely than people of other races and lower economic status to believe that the USA is a meritocracy¹²⁵. Individual-level racial biases are also associated with more support for racially colourblind sentiments, such as 'society would be better off if we all stopped talking about race'^{126,127}. Some psychologists have theorized that racial biases can motivate racially colourblind perspectives that help to maintain ignorance of racial injustices¹²⁸. Racially colourblind ideology has also served to perpetuate systemic racism through government policies (Box 1). Taken together, individual-level racial biases have been associated with cultural philosophies that obscure and reinforce racial inequalities across societal levels.

Altogether, historical narratives that exclude people of colour and downplay the history of racism in the USA, cultural norms that devalue the cultural products of people of colour, and cultural beliefs that obscure systems of inequality contribute to the development and maintenance of individual-level racial biases. Once individual-level racial biases have been established, these attitudes cumulatively shape how history is told, what cultural knowledge and products make up the mainstream, and what cultural beliefs are promoted.

Segregated communities

Segregation in neighbourhoods, workplaces, and classrooms is another systemic influence on individual-level racial bias. Segregation in the USA is often a result of the power and privilege disparities and cultural narratives discussed above. For instance, 'redlining' was a mid-twentieth-century policy in which neighbourhoods were graded (from 'desirable' to 'hazardous') according to their supposed risk of decreasing in value. Neighbourhoods populated by people of colour

Box 1

Colourblind ideology

In the USA, there are numerous examples of societal-level colourblind racial ideology being used to uphold systemic racial oppression. For instance, following the Brown v. Board of Education Supreme Court ruling (1954), separate schools for Black and white students were ruled unconstitutional. Consequently, school boards in multiple American states continued to segregate students by race but claimed that school assignments were now based on 'fit' and 'ability', rather than race²⁶⁴. In this example, the colourblind ideology of assignment by ability was a means of perpetuating systemic oppression while also obscuring systemic racism and reinforcing racist stereotypes about intellectual abilities. A similar series of events took place following the Batson v. Kentucky (1986) Supreme Court decision, which ruled that potential jurors could not be removed on the basis of their race. Following the decision, attorneys continued to remove Black potential jurors, but now provided a colourblind rationale^{265,266}. Jurors can be struck for such arbitrary reasons as wearing a hat, being unemployed, or the prosecutor simply having a bad feeling about them²⁶⁶

Perhaps the greatest effect of the use of colourblind ideology emerged as part of the so-called War on Drugs, a federal campaign in the USA that began in 1971 to crack down on the possession and sale of illegal drugs. One of its most notorious policies set a penalty 100 times higher for possession of substances that were disproportionately used by Black American residents than for substances disproportionately used by white American residents²¹⁰. The War on Drugs has been credited with the massive increase in the prison population and dramatic growth of racial disparities in incarceration rates in the USA during the late twentieth century²⁶⁷. As of 2021, Black Americans were incarcerated at roughly five times the rate of white Americans^{268,269}. Overall, racially colourblind ideology has allowed systemic policies that are ostensibly race-neutral to remain racially biased in effect.

were assigned the lowest scores (demarcated by a red border on a map), which both reduced the value of these homes and prevented homebuyers from accessing federally backed and insured loans^{129,130}. The enduring impact of this policy is that families of colour have not been able to build the generational wealth through homeownership that white people have^{28,131}. To this day, homeowners in neighbourhoods that were deemed hazardous have dramatically less home equity than homeowners in areas that were deemed desirable¹³². Thus, residents of the USA see that nice homes and other symbols of wealth are associated with white people, promoting and reinforcing individual-level pro-white biases¹³⁰.

The echoes of this policy also reinforce residential segregation because homebuyers with adequate means (who are more likely to be white) are motivated to avoid redlined neighbourhoods, where homes tend to be devalued and appreciate far less over time¹³². Thus, racial segregation remains commonplace in the USA. For instance, the average white American lives in a neighbourhood whose residents are 75% white¹³³. Similarly, workplace racial segregation was higher in the 2010s than it was in the 1980s and 1990s¹³⁴. Although public school segregation was ruled unconstitutional in 1954 (ref. 135), the last school district only fully integrated in 2017 (ref. 136). Even within racially integrated schools, a biased system of sorting students into different and unequal course tracks results in overrepresentation of white students in the more advanced and better resourced tracks¹³⁷.

Ongoing segregation also limits intergroup contact¹³⁸ – contact between people belonging to different racial or ethnic groups – one of the most reliable and best studied predictors of reduced individual-level bias¹³⁹. Close contact between groups has been argued to reduce prejudice when those groups share common goals, hold equal status, cooperate with each other and are supported by the broader societal system¹³⁸. Systemic racism in the USA reduces the likelihood of these conditions being met, but the bulk of the evidence indicates that even when optimal conditions are not met, positive intergroup contact reduces prejudice^{140–142}. Thus, the fact that so many social environments – including communities, institutions and interpersonal experiences – in the USA remain racially segregated probably contributes to the persistence of individual-level racial biases.

Limited opportunities for close contact might be particularly detrimental when groups share the same geographic space but lack close contact with one another. A 2015 study found that racial biases among white residents of the USA were highest in states where the Black population was largest¹⁴³. A follow-up study examined how this pattern relates to intergroup contact, finding that living in a state with more Black residents was only associated with increased racial bias among white residents who had limited close contact with Black people¹⁴⁴. Thus, when white people live alongside people of colour in their communities without forming close relationships, racial bias might increase. As such, racial segregation in racially diverse regions and states seems particularly likely to engender individual-level racial biases because intergroup exposure can elicit group threat¹⁴⁵, without the psychological benefits provided by meaningful emotional connections developed through close intergroup contact.

Individual-level racial biases can also reinforce segregated communities and systems. Black communities in the USA are stereotyped as being impoverished, crime-ridden, rundown, dangerous, dirty, and 'ghetto'^{146,147}. If key decision-makers or a critical mass of members of the public hold these biases, devaluation of physical spaces associated with people of colour (such as schools and neighbourhoods) can result¹⁴⁸⁻¹⁵¹. There is experimental evidence that homes in predominantly Black neighbourhoods and homes owned by Black (versus white) people tend to be devalued. When white residents of the USA were asked to assign value to a home, they thought the home was worth less if an image of a Black (relative to white) family appeared in front of the home, even though all other factors were the same¹⁴⁶. The same patterns emerge in actual housing data¹⁵². Schools in predominantly Black neighbourhoods are undervalued, receiving less funding per student than schools in predominantly white neighbourhoods¹⁵³.

This disregard for neighbourhoods populated by people of colour can also be seen in decisions about infrastructure, such as where to place hazardous waste dumps and what communities to displace when new amenities such as freeways and railroads are introduced into communities. Eminent domain – a legal power that forces private citizens to sell land to the government for public projects – is more likely to be used in communities of colour^{154,155} and has myriad negative consequences, including loss of wealth and disruption of community ties and stability^{156,157}. Experimental evidence has indicated that white Americans are less likely to oppose placing a hypothetical chemical

plant next to a Black neighbourhood than next to a white neighbourhood¹⁴⁶. Real-world data are consistent with this hypothetical scenario: the highest polluting industries and sites for toxic waste disposal in the USA tend to be in areas with large populations of Black people^{158,159}. By contrast, experimental evidence indicates that landmarks that are of interest to white people (such as their workplaces, schools, pools, golf clubs and tennis clubs) tend to be placed relatively far from communities of colour¹⁶⁰. Furthermore, analyses of existing institutional policies show that recreation facilities that are closer to communities of colour have more exclusionary barriers – such as fees or dress codes^{160,161}. The history of practices of this kind explain the relatively low swimming rates among Black Americans and dramatically higher drowning rates among Black (relative to white) American residents¹⁶²⁻¹⁶⁴.

Overall, individual-level racial biases can contribute to the devaluation and negative stereotyping of physical spaces occupied by people of colour, which make those spaces less desirable to white people– reinforcing racial segregation. These racial biases might ultimately contribute to a host of systemic and structural racial inequalities within domains ranging from health and wealth to education, which adversely impact people of colour for generations.

Shared stereotypes

Shared stereotypes can spread cultural narratives and justify oppressive systems. Propaganda campaigns have been used to spread stereotypes about people of colour throughout the history of the USA. For instance, nineteenth-century media stereotypes of men of Chinese descent as weak and effeminate^{165,166} were used to marginalize these men, painting them as poorly suited for traditionally masculine jobs and undesirable as husbands¹⁶⁷. Propaganda about intellect, criminality, and sexuality has been used by the media, politicians, industries, and scientists to exercise social control over Black Americans and justify their enslavement and subordination for centuries^{23,168,169} (and see a preprint¹⁷⁰).

Stereotypical representations of people of colour continue in the contemporary media³⁴. On television, people of colour tend to be depicted in negative and stereotypical ways¹⁷¹⁻¹⁷³, as outside mainstream contemporary society¹⁷⁴ or not represented at all¹⁷⁵. News coverage also tends to depict people of colour in a negative light¹⁷⁶⁻¹⁷⁸ and Black criminal suspects are often overrepresented in news media – perpetuating stereotypes that Black people are 'criminal' and 'reckless'^{179,180}. These stereotypes represent only a few of the many ways people of colour are negatively stereotyped in the USA. Meanwhile, white people are overrepresented in media coverage of crime victims^{174,181,182}.

Societal stereotypes are also shared in more subtle ways. Shared cultural stereotypes can develop through the selection and transmission of specific pieces of information about social groups^{183,184} and consequently stereotypes that have no connection to actual traits can form and spread widely. A variety of linguistic biases have been identified as ways in which stereotypes are subtly spread through social groups¹⁸⁵⁻¹⁸⁷. For instance, more specific and trivial wording – such as 'stole a pack of gum' - might be used to describe the theft behaviours of white people, whereas more abstract and dramatic terms such as 'shoplifted' – might be used for Black people¹⁸⁸. There is also a noted tendency for media to use the passive voice when reporting on structural and systemic harms perpetrated against people of colour reporting, for instance, that 'Black Lives Matter protesters were teargassed' as opposed to the more active phrasing 'police teargassed Black Lives Matter protesters'¹⁸⁹. Knowledge of these shared stereotypes can lead to individual-level biases^{190,191}. White residents of the USA with more exposure to stereotypical portrayals of people of colour tend to report more racial-stereotype-consistent perceptions^{177,192,193} and greater bias against people of colour¹⁷⁵. More time spent watching local news – often containing stereotypical representations of people of colour – has been associated with increased bias against members of marginalized groups¹⁹⁴⁻¹⁹⁶. Thus, shared stereotypes at several of the nested levels of influence, from interpersonal interactions to the societal level through media, can shape individual-level racial biases.

Individual-level racial biases also have the potential to shape shared stereotypes at various levels. For example, a white individual's racial biases might lead them to perceive a Black man walking in their neighbourhood as suspicious. The white individual might share their concerns with their neighbours (in person or through online message boards), spreading associations between Black people and criminality. After being primed by this message, another neighbour might call the police on a Black man in the neighbourhood. Neighbours who see the police treating the man as a suspect might infer that he is a criminal, further reinforcing inaccurate stereotypes of Black people as criminals. Given widespread anti-Black biases in the USA¹⁹⁷ and known tendencies to associate Black people with crime^{198,199}, scenarios like this are not unlikely. Indeed, Black men in the USA are more likely than white men to be stopped, searched, handcuffed, and arrested by police²⁰⁰⁻²⁰³. Racial biases can also result in much graver outcomes. White American residents with stronger anti-Black biases also tend to be stronger supporters of gun rights 204,205 (though less so if they are primed to think about Black gun owners^{206,207}), and in another study white residents of the USA were less concerned about gun deaths when the victims are Black than when they are white²⁰⁸. Moreover, where residents had greater implicit biases against Black people, there was more disproportionate police lethal force directed towards Black residents²⁰⁹.

The fact that most people in the USA have individual-level racial biases¹⁴⁴ also limits support for policy change and allows systemic racial inequalities in the criminal justice system to be overlooked^{8,210,211}. Perceiving Black men as threatening is associated with increased fear of crime and reduced support for system-level reform, such as police body cameras and matching the demographics of a police force to their community²¹². Individual-level racial bias might also lead the public to reify racial inequalities when faced with evidence of racial disparities in the American criminal justice system^{213,214}. For instance, Americans who were told about more extreme racial disparities in the prison population of the USA were less willing to support system-level reforms²¹⁵. Overall, individual-level racial biases can lead to behaviours that transmit racial stereotypes at interpersonal and community levels, which ultimately have the potential to reinforce systemic racial inequalities in communities and in broader society with long-term ramifications.

Nonverbal messages

People are constantly exposed to nonverbal messages, such as facial expressions and body language, in contexts from workplaces and schools²¹⁶ to depictions in the media²¹⁷. These nonverbal signals can often convey societal messages, such as racial biases and cultural messages about race. For example, for most of the history of the USA, especially in the southern states, Black people were expected to demean themselves to white people through nonverbal behaviours, for instance by stepping off the sidewalk and removing their hats when a white person passed by²¹⁸. These nonverbal signals were choreographed to communicate white superiority, and failure to adhere to this racial choreography could have violent – even deadly – consequences for Black people^{24,218}. These racialized expectations for respect persist.

For instance, analyses of recorded police interactions with the public from within the past five years indicated that officers spoke less respectfully and had less friendliness and respect in their tone of voice when interacting with Black men than with white men^{219,220}.

Nonverbal racial biases have also been documented in American media. For example, white characters on primetime television often receive more warm, positive nonverbal signals, such as smiles, than do Black characters²¹⁷. Exposure to nonverbal biases of this kind can influence the attitudes of children and adults^{216,221-223}, increasing negative attitudes towards Black people^{217,224-226}. Even exposure to nonverbal bias towards a single member of a group has the potential to produce group biases. For instance, adults and children who observed a series of brief interactions in which one person systematically received more warm, friendly nonverbal signals than another person subsequently favoured the person who received the more positive nonverbal signals, and also favoured others of their fictitious nationality^{222,227}. Thus, if a sufficient number of people in a community or society – especially people with social influence, such as teachers or community leaders display nonverbal biases favouring white people, other individuals in that context will also develop the same biases. For instance, if children observe a systematic pattern of white role models seeming more anxious when passing Black people on the street, that will shape their attitudes and emotions about who they feel safe around.

Individual-level biases can also shape people, communities, and culture. Individuals with more racially biased attitudes tend to show more racially biased nonverbal behaviour in interracial interactions²²⁸⁻²³¹. Thus, individual-level attitudes seem to shape nonverbal behaviour in interpersonal interactions. Exposure to this nonverbal manifestation of individual-level bias can also influence the behaviours of others. Children who are exposed to biased nonverbal signals in social interactions often adopt the biased behaviours they observe^{221,222}. For instance, preschool children who observed a member of one group receive more nonverbal warmth than a member of another group were subsequently more likely to choose their playmates from the former group²²². Furthermore, 40% of preschool children who were exposed to biased nonverbal signals in a study mimicked the biased nonverbal signals in a study more likely to choose their playmates from the former group signals in a study mimicked the biased nonverbal signals in a study mimicked the biased nonverbal signals they observed²³².

If biased nonverbal signals and the attitudes they convey are easily transmitted and adopted by an individual, it follows that they will propagate beyond the individual to their social network. Thus, nonverbal biases can be thought of as an expanding system of transmission wherein exposure to nonverbal biases contributes to the development of racially biased attitudes; those attitudes then manifest as biased nonverbal signals, which others within the social network will then see, leading them to develop biases, and so on²³³.

The tendency to transmit racial biases nonverbally might be exacerbated by the fact that people tend to justify the nonverbal biases they observe. Even when the targets of (positively or negatively) biased nonverbal signals displayed identical behaviours, observers were more likely to report that the targets' behaviour (57%), rather than how the target was treated (30%), influenced their attitudes towards the targets' were treated by others, observers still justified their own attitudes by attributing them to the targets' actions.

Taken together, if the majority of individuals making up a social system hold the same individual racial biases, repeated exposure and reinforcement of those racial biases through nonverbal behaviours can potentially shape attitudes and reinforce systemic oppression at interpersonal, institutional (classrooms) and societal (media) levels. Moreover, when nonverbal messages propagate racial biases to children, they spread racial biases temporally, to future generations.

Implications for psychological interventions

Given our thesis that systemic factors strongly contribute to the development and perpetuation of racist attitudes and beliefs, the importance of changing these systemic factors (including systems, policies, and practices) cannot be overstated. However, we focus our discussion here on psychological interventions (Table 1). We frame our discussion of interventions in terms of what can be done at a psychological level to interrupt or limit the effects of the systemic influences and feedback cycles identified above.

One potential lever with which to reduce the spread of individual racial biases is for white parents to teach their children directly about the importance of race and racism (as parents of colour do), a process called racial socialization. With the proliferation of colourblind racial ideology, many white American residents believe that disregarding race would help to minimize racism²³⁴, and white parents have feared that acknowledging race could facilitate the development of racial biases in their children^{234,235}. Although some scholars have cautioned that there might be pitfalls to white parents talking to their children about race and racism, such as ill-equipped parents being ineffectual or producing counterproductive effects²³⁶, many scholars agree that racial socialization in white American families is a step in the right direction^{139,237-239}.

Parental racial socialization has the potential to provide children with a new lens through which they can interpret the societal system in which they are immersed and help them to recognize systemic racism^{240,241}. Consequently, it can provide a counternarrative to the systemic factors reviewed here that perpetuate systemic racism. Racial socialization of children can prevent them from accepting, internalizing, and justifying the existing system of power and privilege, and instead enable them to see it as unjust and in need of reform. Initial evidence suggests that racial socialization in white American families can reduce racial biases among children^{239,242,243}. In a preprint that has not yet undergone peer review, 8-12-year-old white American children who engaged in a semi-structured conversation about race and interpersonal racism with a parent showed a statistically significant decrease in implicit anti-Black racial bias from after the conversation compared to before²³⁹. As noted in the section on segregation, direct interracial contact – which is known to reduce racial biases¹³⁸⁻¹⁴² – is often limited by social and residential segregation. Thus, when direct contact with children of colour is not an option, parents can use books, films and other media to help children to understand the varied lived experiences of children in other racial and ethnic groups and ultimately to reduce their prejudices^{244–250}.

Alongside the socialization of children, another valuable intervention effort is to develop bias awareness among adults. Greater awareness of one's own biases is associated with less racially biased attitudes and intentions to engage in less racially biased behaviour²⁵¹⁻²⁵³. White Americans who are more aware of their own racial biases are more willing to accept feedback on their racial biases and are more likely to detect evidence of subtle racial biases in themselves and others²⁵³. Thus, people who are more bias-aware might also be more likely to recognize systemic racial biases. When white Americans are presented with blatantly racist messages and are aware of the bias in the message, they tend to resist the influence of the message^{117,254,255}. As such, helping people to recognize the subtle biases communicated through cultural narratives, nonverbal signals, and shared stereotypes across various

Table 1| Systemic influences and associated intervention opportunities

Systemic influence	System→individual	Individual→system	Intervention opportunities
Power and privilege	Children and adults tend to conclude that the way things are (such as racial wealth disparities) is the way they should be ³⁵⁻⁴² Increased exposure to structural racial inequalities is associated with increased racial bias ⁷⁴⁶ Racial progress that challenges inequalities can intensify individual-level racial bias ⁴⁷⁻⁵⁰	Racial biases seem to promote systemic disparities in power and privilege in a variety of domains ⁵¹ , including government representation ^{52,53} , healthcare ⁵³⁻⁵⁷ and education ⁵⁸	Parental racial socialization can help children to develop a critical understanding of the systemic biases in societal systems, undermining the tendency to perceive the way things are as the way they should be ^{239,242,243} Teaching children about the systemic and interpersonal racism faced by historical figures can reduce racial biases and increase the value placed on racial fairness ²⁵⁹
Cultural narratives and values	The attitudes, values and perspectives of white people tend to be implicitly justified by dominant historical narratives ^{60,61} , which probably contributes to individual biases favouring white people ^{70,74,76-79} Cultural products of white people — such as art forms ^{83–87} , dress and appearance ^{88-90,92} , and styles of speech ⁹⁴ — tend to be the most highly valued, resulting in individual-level biases against people who deviate from these styles ⁹⁵⁻⁹⁸ Colourblind ideologies and the message that people who deserve success achieve it implicitly convey that people of colour do not merit the same status and success as white people ⁴⁵	Individual-level biases influence how historical events are represented in society ^{70,78,82} The impact of white-centric biases can be observed in the methods, standards, and knowledge bases used in the fields of psychology ¹⁰⁵ , mathematics ^{103,104} and written composition ^{94,106} Americans with stronger racial biases tend to report a stronger belief in meritocracy ^{123,124} and greater support for racially colourblind ideology ^{125,127}	Parental racial socialization can facilitate children's awareness and understanding of racial biases and systemic racism ^{238,240-243} Racial-bias awareness might help people to identify the subtle racial biases embedded in historical narratives, cultural products, and cultural beliefs ²⁵⁶ Increasing awareness of the systemic injustices of the past can increase empathy towards marginalized groups ²⁶⁰
Segregation	Persistent racial segregation ^{133,134} limits opportunities for positive intergroup contact, which is known to reduce racial biases ¹³⁸⁻¹⁴² Limited positive cross-race contact in racially diverse areas might be particularly likely to engender individual-level racial biases ¹⁴⁴	Individual-level racial biases can lead to stereotypes about physical spaces ¹⁴⁶⁻¹⁵¹ Biases against predominantly Black spaces can result in devaluation of these spaces through property appraisals, use of eminent domain, or placement of toxic waste disposal sites ¹⁵²⁻¹⁵⁹	Racial socialization can provide white children with extended contact with people of colour, even if their local community is largely homogeneous ^{139,244-250} Education about the structural factors that led to current patterns of residential segregation can help to increase awareness of systemic racism and the policies that perpetuate it ²⁵⁸
Shared stereotypes	Shared racial stereotypes are spread through word of mouth ^{183,184} , linguistic biases ¹⁸⁵⁻¹⁸⁷ , media biases ¹⁷¹⁻¹⁷³ and propaganda ^{23,165,166,168,169,176-178} , resulting in individual-level racial biases ^{175,172,190-195}	Individual-level racial biases can lead to racially biased responses and behaviour (such as reporting a Black man as 'suspicious' to police) that further reinforces racial stereotypes, disparities and systemic racial inequalities ^{209,212,213,215}	Educating children and adults about historical racial injustices can reduce racial stereotyping ^{258,259} Teaching people about the historical construction of racial stereotypes might help them to detect and reject racially biased messages ^{258,259}
Nonverbal biases	Nonverbal biases that represent shared cultural biases and/or are transmitted through media can systematically impact racial attitudes ^{217,233}	Individual-level implicit racial biases predict racially biased nonverbal signals ²²⁸⁻²³¹ Biased attitudes can lead to biased nonverbal signals and behaviour ^{221,222,232}	Historical education can frame nonverbal biases against people of colour as unjust ²²⁷ Promoting racial bias awareness might increase awareness of subtle biases (such as nonverbal signals)

levels of influence – such as racial 'dog whistles' – could reduce the effects of these biases. Consistent with the notion that racial bias awareness increases awareness of systemic racism, white American parents with greater bias awareness indicated that they were more likely to discuss racial current events reflective of systemic racism with their 8–12-year-old children²⁵⁶.

Our final intervention recommendation is education about the history and systems that led to current racial injustices and inequalities. People who are more knowledgeable about the racial injustices of the past tend to be more aware of the systemic racism that persists in the present^{77,257}. There is also growing evidence that educating children and adults about historical racial injustices can improve racial attitudes, increase empathy, and raise awareness of systemic racism^{258–260}. For instance, white American children who learned about the accomplishments of Black historical figures – and the systemic and interpersonal racism they faced – showed less racial stereotyping and more positive attitudes towards Black people, and placed greater value on

racial fairness than children who learned only about the historical figures' accomplishments²⁵⁹. A preprint that has not yet undergone peer review also suggests that simply informing people of a group's history of being treated unjustly can help to buffer the spread of nonverbal biases about that group²²⁷. Historical education can challenge people's tendencies to infer that power and privilege disparities are justified and further call into question the cultural narratives that elevate white people and white culture.

These recommendations for intervention are overlapping and complementary. It is important to identify multiple ways to intervene in the nested levels of influence that shape attitudes and the ways that attitudes contribute to the perpetuation of systemic issues. By encouraging racial socialization, bias awareness, and accurate historical education, Americans can make new meaning of societal systems, understand better how the country got here, and begin to chip away at the racism so deeply ingrained in their society. These interventions would be particularly effective if implemented at a systemic level,

for example, by revising the teaching of history and incorporating critical racial education into public school curricula.

Summary and future directions

In this Review, we approached the question of how racial biases develop, observing through a systemic lens how influences at the interpersonal, community, societal and temporal levels interact with racial biases. We considered the effects of five cross-cutting systemic factors on racial biases: unequal distributions of power and privilege, historical narratives and cultural products, racial segregation, shared cultural stereotypes, and nonverbal signals. We provided evidence that each of these five systemic factors shapes individual-level racial biases, and that individual-level racial biases shape systems and inequalities at each of the nested levels. Similar arguments about individuals and systems mutually reinforcing one another have been made in the context of organizations and the workplace¹¹. We also reviewed interventions that could buffer the effects of the systemic influences we identified. Specifically, we reviewed the literature on racial socialization in white

Box 2

Systemic bias outside the USA

Many of the factors reviewed here also apply in other cultural contexts. For instance, power and privilege disparities, cultural narratives, segregation and shared stereotypes have been identified as contributors to individual-level racial biases in South Africa^{270,271}. Power and privilege disparities in South Africa are stark; in 2017 white people held 67% of the top management positions but accounted for less than 8% of the country's population²⁷². Such dramatic status disparities have been identified as a key contributor to racial biases among South African children, across races²⁷³. Furthermore, media sources in South Africa have been criticized for promoting societal narratives that justify racial oppression and reinforce negative stereotypes about Black South Africans²⁷¹.

Turning to a different cultural context, the extreme power and privilege disparities inherent in the statuses assigned to groups within the Hindu caste system have been identified as important contributors to the perpetuation of caste-based biases among Indian children²⁷⁴. Likewise, power and privilege disparities, cultural narratives, segregation, shared stereotypes and nonverbal biases have been identified as contributors to Israeli Jewish children's biases against Arab people²⁷⁵⁻²⁷⁹.

Some aspects of social bias development are not shared across cultures. For instance, in the contemporary USA, norms of egalitarianism and laws prohibiting discrimination limit the extent to which members of society are explicitly socialized to favour white people and disparage people of colour. Thus, racial biases tend to be transmitted in implicit, coded and plausibly deniable ways. In cultural contexts in which openly expressing biased and discriminatory views is socially acceptable, as was the case in earlier periods of American history, more explicit socialization of bias often takes place. For instance, within the Jewish population in Israel, people tend to be relatively accepting of anti-Arab biases, so children might be deliberately socialized to avoid and distrust Arab people^{276,277,279}. families, racial bias awareness and historical education – highlighting the promise of each.

The psychological study of racial attitudes has largely focused on individual-level biases, dedicating relatively little research to the systemic forces that shape racial biases. However, psychological scholars should seek opportunities to understand better how systems influence racial biases. Given the public availability of large-scale surveys and polling data indexing racial attitudes, there is great potential for scholars to use changes in state-level policies or practices as opportunities to examine the influence of systemic factors on racial attitudes.

Although many of the processes we describe here might generalize to other cultural and national contexts, the most relevant factors and how they manifest might vary considerably across contexts. In Box 2, we briefly discuss literature from non-USA contexts and the ways in which it converges and diverges from patterns observed in the USA. However, we by no means provide a comprehensive review. Ultimately, much more research on prejudice and racism needs to be conducted outside the USA and other nations with a majority of white residents²⁶¹⁻²⁶³. Research across a variety of cultural contexts is essential to the development of a comprehensive understanding of the societal systems that produce and reinforce racial (and other) biases, and the psychological processes that contribute to the reproduction of societal inequalities.

Although there is a growing body of literature tying systemic influences to individual-level biases, the literature in this area is still relatively sparse. For instance, it has yet to be experimentally tested how exposure to cultural products influences racial attitudes. There is also much work to be done regarding the development of interventions. For instance, it is important to identify optimal strategies for approaching racial socialization in white families and determining its impact on children's racial attitudes. As an example, it is unknown whether the effects of parental racial socialization vary as a function of whether it involves teaching about interpersonal versus systemic racism. There is also still much to be learned about how often these conversations should take place and how long their effects persist. Racial bias awareness seems to be helpful for recognizing interpersonal biases, but it remains to be seen whether racial bias awareness facilitates recognition of systemic racism. Perhaps most importantly, it is unclear whether interventions aimed at developing racial bias awareness can be effective. We posit that interventions that integrate efforts to increase bias awareness, conversations about systemic and interpersonal racism, and education about historical injustices would pack the most powerful punch - but work that empirically tests the efficacy of such interventions is still needed. Moreover, applied interventions that examine how these factors operate in systemic contexts - such as schools - will be an important future step.

To fully interrupt the processes we have described, interventions will need to target organizations, policies, institutions and systems, as well as how individuals interact with each of these areas of influence. For interventions to truly be successful, they will need to cut across the nested levels of influence, lest any progress at one level be washed out by the continuing biases present at other levels. Large systemic changes of this kind require buy-in from key stakeholders and the public, and because change can take time, developing strategies to target how the public understands and makes sense of systems – and whether they are seen as just – might be a key step on the path towards an equitable society.

Published online: 18 May 2023

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Acknowledgements

The authors thank K. G. Rogbeer, J. Tran and B. MacDonald for assistance in proofreading and formatting earlier drafts of this manuscript.

Author contributions

A.L.S.-D. researched data for the article. All authors wrote the article. All authors reviewed and/or edited the manuscript before submission.

Competing interests

The authors declare no competing interests.

Additional information

Peer review information Nature Reviews Psychology thanks Boaz Hameiri, Keith Payne and the other, anonymous, reviewer(s) for their contribution to the peer review of this work.

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