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Making Reflection Critical: Structural and Historical Attributions for Inequity

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In this chapter we consider the roles of structural and historical thinking in critical consciousness (CC), a key process of sociopolitical development. CC is an important developmental competency that seeds social change by empowering young people to combat injustice and navigate oppression present in their daily lives. In addition to facilitating broader social change, CC also has important consequences for shorter term, individual positive developmental outcomes among youth facing persistent marginalization. Since CC was suggested as an “antidote for oppression” (Watts et al., 1999) two decades ago, a spate of studies has demonstrated links between CC and positive outcomes for Black, Latinx, and low socioeconomic status youth (Heberle et al., 2020). This work has found that CC predicts increased occupational goals and attainment (Diemer & Blustein, 2006; Diemer & Hsieh, 2008; Diemer, 2009; Olle & Fouad, 2015; Heberle et al., 2020; Rapa et al., 2018; Uriostegui et al., 2021) and academic success (El-Amin, et al. 2017; Godfrey et al., 2019; Seider et al., 2020) among low socio-economic status racial/ethnic minority youth, and has linked CC to increased wellbeing (Christens & Peterson, 2012; Zimmerman et al., 1999), collective action (Conlin et al., 2021), and community engagement (Carlson et al., 2006).

CC is a promising paradigm for both short-term thriving and longer-term social change. The construct’s theoretical breadth, however, poses a challenge to researchers’ ability to reach definitive causal conclusions about CC’s impact on positive outcomes and to design interventions to foster CC for the sake of positive youth development. CC is difficult to measure through quantitative assessment. Over the past decade, researchers have confronted this challenge with increasing success (see Rapa, Bolding, & Jamil, 2020 for an excellent review of existing measures and discussion of measurement challenges). Yet, the creation of a

generalizable measure of underlying awareness of social and political attitudes, divorced from political ideology and specific social issues, is a complicated proposition.

CC is typically conceptualized as three interrelated subcomponents of critical reflection, political efficacy, and critical action (Watts et al., 2011; Diemer et al., 2015, Godfrey & Grayman, 2014), although historically there has been debate about the type and number of components present in CC (Jemal, 2017). Critical reflection represents a systemic understanding and moral rejection of social inequity (Watts et al., 2011; Christens et al., 2016). Political efficacy, also referred to as critical motivation, refers to an individual's interest and perceived ability to change social or political inequalities (Rapa, Bolding, & Jamil, 2020). Finally, critical action represents individual or collective action directed at challenging and reforming unjust aspects of society (Diemer et al., 2020). These components were articulated and formalized by Watts et al. (2011) based on Freire's articulation of CC as a praxis of liberation comprising "the action and reflection of men and women upon their world in order to transform it" (Freire, 1970, p. 79), with attention as well to Freire's later discussion (1973) of the role of perceiving possibilities for action (Watts et al., 2011). Watts and colleagues (2011) synthesized these ideas into the reflection, efficacy, and action subcomponents of CC most often studied today.

Current Issues in Measurement

These subcomponents are not simple to measure. For example, there is debate over the value of measuring motivations to make social change versus an individual's perceived ability to do so, and over distinguishing between actions to support general community wellness versus actions aimed specifically at changing an unjust status quo (Diemer et al., 2020). Definitions of critical reflection in particular vary across studies. This lack of clarity presents a challenge in understanding *how* critical consciousness predicts positive developmental outcomes; this

challenge is especially pronounced given that critical reflection is a unique contribution of CC theory (Burson & Godfrey, 2020), whereas the associations between positive developmental outcomes and CC's other components (political efficacy and critical action) are explored to some extent in the literatures on empowerment (Christens et al., 2016; Christens & Peterson, 2012) and collective action and civic engagement (e.g. Van Zomeren et al., 2008), respectively. More definitional clarity and better measurement of critical reflection will help illuminate how this unique aspect of CC manifests in relation to developmental outcomes.

Theoretical Issues: The Need for Structural and Historical Thinking

In measuring critical reflection, it is difficult to distinguish between a general awareness of hot-button social issues and “critical reflection on the root causes of social conditions” (Westheimer & Kahne, 2003). The importance of this distinction is also debated, as scholars continue to explore the definition of critical reflection itself. While all formulations of critical reflection include an awareness of oppression or inequality, scholars place varying levels of emphasis on the need for systemic, structural, and historical thinking as part of this reflection (see Jemal, 2017 for a review). As such, measuring critical reflection faces not only the theoretical challenge of defining the term, but also the empirical challenge of accurate measurement.

In response to these theoretical questions, we argue that an understanding of the historical origins of current inequities, and an analysis of their evolution and enactment over time and through institutional structures, laws, and policies, is key in making reflection truly critical. Freire emphasizes the necessity of these facets of reflection in *Pedagogy of the Oppressed* (1970), emphasizing that “to surmount the situation of oppression, people must first critically recognize its causes” (p. 47). Freire repeatedly discussed how this reflection involves identifying

the “concrete historical dimensions” (p. 99) of an unjust reality, as well as the social structures through which oppression operates. Freire (1970) envisioned both reflection and action to be directed not at individuals, but “at the structures to be transformed” (p. 126), thereby highlighting the need for critical reflection to consider the social structures that perpetuate injustice, rather than focusing exclusively on the injustice itself. Throughout his discussions of critical consciousness, Freire highlighted not just awareness of inequality, but also an understanding of the historical and structural forces that allow it to develop and evolve—that is, a “reading” of the sociohistorical, sociocultural, and sociopolitical realities of the world.

Early developmental and community psychology studies on CC incorporated this focus on the structural and historical aspects of reflection. For example, Watts’ and colleagues’ Young Warriors Program aimed to foster sociopolitical development through critical discussions of rap music, with the hope that these conversations might connect themes present in rap to structural issues of exploitation, such as over-policing of poor Black communities, and their historical roots (Watts, Abdul Adil, & Pratt, 2002; Watts, Griffith, & Abdul Adil, 1999). Subsequent theoretical work has echoed the importance of a structural and historical perspective in critical reflection (Burson & Godfrey, 2020; Christens, Winn, & Duke, 2011). This work argues that critical reflection focuses on an understanding of systemic inequality that is rooted in knowledge of the origins and development of economic, political, and social inequities and the ways they are enforced through policies, laws, cultural norms, and other social institutions (Burson & Godfrey, 2020; Christens et al, 2016; Watts et al., 2011). For reflection to be truly critical, in other words, it requires attributions that acknowledge how systemic, macro level forces, such as government policies and laws, have acted over time to shape both past and present inequity (Christens et al., 2016; Watts et al., 2011).

This focus on structural and historical thinking can help transform general awareness of, and interest in, current affairs into action for a more just society (Westheimer & Kahne, 2003). Understanding the structural and historical aspects of oppression helps young people situate inequity in the larger social world, thereby directing blame away from individuals and onto the social systems that drive inequity (Burson & Godfrey, 2020; Watts et al., 2011). This type of reflection can also highlight the intersectionality of oppressions, casting light on the ways different forms of oppression overlap and reinforce each other (Godfrey & Burson, 2018). This process leads to a more comprehensive understanding of oppression as not one single issue affecting one group of people, but rather as a tangle of related issues embedded in larger power structures over time. This conceptualization of critical reflection also points out avenues for intervention and action to increase equity. Ultimately, a structural and historical dimension of reflection is necessary to inform the liberatory praxis Freire (1970) envisioned.

Empirical Issues: Current Measures

Despite the theoretical centrality of structural and historical understandings of inequality, most measures of critical reflection do not explicitly assess structural and historical dimensions. For example, perhaps the most frequently employed measure of critical reflection in developmental research, the Critical Consciousness Scale (CCS; Diemer, Rapa, Park, & Perry, 2017), assesses critical reflection along the dimensions of awareness of inequality and rejection of inequality (also called egalitarianism). To measure awareness of inequality, this scale measures agreement with statements asserting that three specific marginalized populations (women, poor people, and racial/ethnic minority groups) have a harder time in education, the workplace, and generally “getting ahead” in life. One recently validated short version of this

scale (CCS-S, Rapa et al., 2020) similarly assesses egalitarianism and awareness of the existence of challenges for women, racial/ethnic minorities, and poor people.

The CCS is seminal in providing a reliable and valid scale to assess both awareness of inequality and the rejection thereof. As such, it has been widely applied to further our understanding of causes and consequences of youth critical consciousness. Notably, however, this scale does not address broader structural attributions for inequality, nor inequality's historical roots. One limitation to measuring awareness of inequality, as opposed to structures and historical dimensions of oppression, is that the former is confined to assessing inequality faced by specifically named social groups only, thereby omitting discrimination on the basis of other characteristics such as sexual orientation, gender presentation, or disability. Moreover, this approach does not assess attitudes toward, or awareness of, the underlying systemic forces driving group-based inequities, such as sexism, classism, and racism. As we have argued above, for reflection to be truly critical, it must involve recognition of these driving forces and structures, their origins, and their effects—that is, a measure must move beyond assessing endorsement of the statement that individuals face hardship based on membership in a social group to gauging the extent to which the respondent sees these hardships as systemic throughout time. Furthermore, focusing on specific single categories of marginalization precludes the possibility of recognizing inequities existing or experienced as a result of intersecting systems of oppression.

Other less widely adopted measures of critical reflection have attempted to incorporate an intersectional measurement perspective with a broader focus on oppressive systems. For example, the creators of the Contemporary Critical Consciousness Measure (CCCM; Shin et al., 2016) and the CCCMII (Shin et al., 2018) acknowledge the value of measuring intersectional

reflection that considers systems of oppression and their overlaps. The Critical Consciousness Inventory (CCI; Thomas et al., 2014) also aims to measure awareness of oppression and hierarchy, drawing from aspects of sociopolitical development theory. Neither of these scales has been widely adopted, however, and have yet to be replicated or validated among diverse populations (for emerging work refining and applying the CCCM and CCCMII to diverse groups, however, see Chapter X, this volume).

An examination of these scales illustrates the difficulty of measuring an intersectional awareness of structural oppression. The CCCM scale items assess attitudes towards Black, Latinx, Asian, and white people, toward poverty and poor people, and towards LGBTQ people. Items are a mix of individual (e.g. “Overall, whites are the most successful racial group because they work the hardest” (reverse coded) and structural (e.g., “the overrepresentation of Blacks and Latinos in prison is directly related to racist disciplinary policies in public schools”) attributions. Each separate item assesses a single issue, such that intersectional measurement comes from the diversity of topics in the scale as a whole, as opposed to intersectionality represented in any one item. While some items refer to structural issues, there is no broader articulation of structural attributions or systemic thinking because these measures assess specific examples rather than broader thought patterns; it can therefore be difficult to separate whether these scale items assess a critical style of reflection or a more general progressive ideology. If a limitation of the CCCM and the CCCMII is their focus on specific, concrete examples, the CCI is possibly overly general, asking quite broadly about fairness and oppression. These items may not directly activate ideas about specific forces of oppression such as racism or sexism. Furthermore, the unusual format of this measure, which utilizes a Guttman scale, may deter researchers from

employing it. Indeed, a recent adaptation of the CCI eliminated the use of Guttman scaling altogether (Chan, 2022).

Finally, none of these measures of critical reflection explicitly measure structural or historical thinking, perhaps because of the difficulty involved in assessing these types of attributions. Because structural and historical thinking are not usually measured directly in current CC instruments, evidence for the role of *truly critical* “critical reflection” in CC scholarship is lacking, despite its theoretical import.

Challenges in Incorporating Structural and Historical Thinking

Given our opinion that critical reflection must be structurally and historically rooted, we now consider methods to assess the construct in this way. There are several major challenges to the measurement of structural and historical thinking. First, there is the definitional issue of what we mean by structural and historical thinking. In the current chapter, we use the term “thinking” to refer to a range of attributions, cognitions, rationalizations, and understandings of inequality that in some way reference historical and/or structural knowledge or thought patterns. We understand “structural thinking” as attributing inequity to macro-level factors such as laws, policies, institutional norms, and social norms rather than to individual characteristics or decisions. “Historical thinking” refers to an awareness of the historical origins of inequity, its development, and its multiple manifestations over time. Given a lack of agreement and definitional clarity in the CC literature, we use the broader catchall term “thinking” because little is currently known about the nuances and distinctions among these different terms

Second, it is unclear whether structural and historical thinking should be conceptualized as one sub-dimension of critical reflection, or if they are better understood as two separate sub-dimensions, and if so, how each should be defined. Within the CC literature, discussions of the

topic view structural-historical thinking as one combined process. Freire, along with later theorists who emphasize the need for structural and historical thinking, viewed these types of thought as a joint process, such that historical knowledge is nearly always linked to, or conflated with, structural attributions (Burson & Godfrey, 2020). These writings use the terms “structural” and “historical” interchangeably to refer to a type of attribution that is in fact both structural and historical in scope (see Christens et al., 2016; Godfrey & Burson, 2018).

Other literatures, such as social psychology, separate these ideas, focusing on structural thinking as an attribution style, while history is treated as either factual knowledge or opinions about how relevant the past is to understanding the present day. This research explores historical and structural thinking in theoretical isolation from each other, despite their conceptual overlaps (Burson & Godfrey, 2020). In the social psychology literature, structural attributions refer to thinking about policies and institutions, either situated in, or devoid of, historical context. One such study found that for white Americans, attributing anti-Black racism to structural and institutional policy as opposed to interpersonal prejudice was associated with greater awareness of anti-Black racism in the wake of Hurricane Katrina (O’Brien, 2009), suggesting that more structural thinking led to greater critical reflection on inequality.

Conversely, this research explores historical thinking in isolation from structural thinking. This work offers multiple ways to measure historical thinking. Two possibilities emerge, first to measure concrete historical knowledge, and second to measure endorsement of the past as relevant to present social issues. As mentioned above, historical knowledge about racism has been linked to an increased ability to identify instances of present-day racism among both Black and white Americans (Adams et al., 2006), indicating that historical knowledge plays a role in awareness of inequality in the present day. Similarly, refusal to endorse the relevance of

historical injustices against the Maori to present day inequalities is associated with opposition to redistributive policies among white New Zealanders (Sibley & Liu, 2012; Sibley et al., 2008). Increased endorsement of history as relevant may therefore facilitate critical reflection's goal of rejecting inequality in favor of liberation. In neither of these approaches, however, does historical thinking require attention to the structural ways policies, laws, and institutions develop and enact inequity over time.

These examples all ultimately illustrate some form of structural or historical thinking driving critical reflection on oppression, even though each of these traditions defines structural and historical thinking differently. In the CC literature, structural-historical thinking is one combined attribution style. In the social psychological literature, however, structural attributions can occur in the absence of historical perspective, while historical thinking is not explicitly linked to structural attributions. Furthermore, historical thinking can be measured with concrete knowledge or endorsing the past as relevant. It is unclear which of these types of structural or historical thinking would be most valuable to incorporate into measures of critical reflection.

Given a lack of definitional clarity around what structural and historical thinking and attributions actually entail, and a paucity of empirical evidence for the roles of these thinking styles in critical reflection, the roles of structural and historical thinking in CC are currently ambiguous. This omission has consequences for both theory and intervention. Arguments for the role of structural and historical thinking in CC are predominately theoretical rather than empirical and, as noted, tend not to distinguish between structural and historical thought. Other literatures, including social psychology, have demonstrated a range of positive individual and intergroup outcomes associated with structural or historical thinking, in isolation, that are in line with the goals of CC. It remains unclear, however, whether structural and historical thinking

have distinct results from each other, or if they exert different effects separately and in tandem. For example, it is possible either to focus on historical thinking alone, without focusing explicitly on the role of policy and institutions; or to think about structural factors such as laws and organizations without historical context; or to focus specifically on the interplay of structural and historical forces in creating present inequities. It is also possible that all these orientations are in fact features of a shared underlying cognitive latent construct. Clarifying how structural and historical thinking manifest and interplay in critical reflection will support the creation of more effective CC measures and, eventually, interventions focused on individual wellbeing or intergroup solidarity, both outcomes that have been linked to structural and historical thinking.

Third, there is the question of what particular structural and historical knowledge we are seeking to measure. Should critical reflection be defined by a general tendency to make attributions that are structural and/or historical in nature, or towards structural attributions and historical knowledge of a specific issue? This question of specificity echoes a larger debate in CC research about the value of treating CC as a domain specific or general construct (e.g., Diemer et al., 2016). Existing measures of critical reflection usually focus on one or more explicitly articulated domains, such as racism or sexism (see the CCS, CCCM, CCCMII). Given both the theoretical arguments for treating CC as a domain specific construct and the empirical difficulty of creating one broad measure that applies to all situations and domains of oppression, we suggest that it may be more practical and useful to measure structural and historical attributions applied to a specific issue than to attempt to capture more general patterns of thought.

A final question in incorporating structural and historical thinking into the measurement of critical reflection is that it is unclear how these theoretical components fit with existing sub-

dimensions of critical reflection. As discussed above, the most commonly applied measure of critical reflection assesses awareness of inequality and egalitarian ideology. It is conceivable that measures of structural and historical thinking would not correlate at all with these sub-dimensions, as assessed through current instrumentation. Conversely, it is possible that there would be complete empirical overlap among one or more of these sub-dimensions, such that adding structural and historical thinking scales would be redundant to currently used scales. Understanding the associations among these constructs will aid in building a more comprehensive measure of critical reflection.

In the following section, we conduct a proof-of-concept empirical study that examines how best to measure orientations to structural and historical thinking and situates these constructs alongside more commonly and successfully measured dimensions of critical reflection. We focus on one major domain of inequality for the purposes of this study. Specifically, we examine racial critical reflection due to its prevalence in CC research and in research on historical thinking. In addition to measuring awareness of inequality and egalitarianism, we pilot new subscales focused on structural attributions, combined structural/historical attributions, and endorsement of historical relevance in an attempt to clarify how these sub-dimensions interact with each other and with previously validated measures of critical reflection.

Empirical Case Study

Thus far, we have argued for the importance of assessing structural and historical thinking styles within critical reflection. We now explore options for adding these measures to current instruments that focus on awareness of inequality and egalitarianism. We aim to empirically explore our theoretical supposition that structural and historical thinking are key sub-

dimensions of critical reflection. We also seek to gain conceptual clarity around the empirical functioning of these sub-dimensions by examining whether structural and historical thinking about inequality are part of the same overarching construct or if they are, in fact, separate sub-dimensions. To explore these questions, we conduct measurement work and compare a series of theoretically driven confirmatory factor analyses. Through these analyses, we investigate whether measures of structural and historical thinking can be added to measures of egalitarianism and awareness of inequality that typically form measures of critical reflection in order to create a more comprehensive measure. We also determine how best to conceptualize the dimensions comprising this new, expanded version of critical reflection. As discussed above, existing measures of critical consciousness often address inequality based on race/ethnicity, gender, and social class. In the interest of both parsimony and theoretical clarity, we focused our preliminary exploration on racial critical reflection.

Participants

Following the precedent of earlier measure validation in critical consciousness (McWhirter & McWhirter, 2016), we recruited 329 English-speaking US-based Latinx participants via Amazon Mechanical Turk (N=140) and Prolific.ac (N=189). Measures were identical on both platforms. After eligibility checks to confirm ethnicity, age, and nationality we retained a sample of 292 (173 male, 96 female, 2 “other”). Participants ranged in age from 18 to 35 (M=24.39, SD=3.37). All participants identified as both U.S. American and Latinx. This group was chosen for its inclusion in the CC literatures as a group that faces discrimination in education, employment, and wealth. We recognize that this group faces specific challenges around language and immigration that are not addressed in the current study, which may affect the generalizability of findings.

Procedure

Participants completed a battery of items designed to assess awareness of inequality, egalitarianism, structural attributions, historical relevance, and combined structural/historical thinking. These three types of structural and historical thinking were chosen to reflect CC theory and current research on structural and historical thinking, as discussed above. All items focused on racial inequality in the United States. Participants then responded to questions assessing basic demographic information.

Measures

All measures are discussed below and can also be found in the appendix. We included measures from the validated and widely used Critical Consciousness Scale (CCS; Diemer et al., 2017) as well as new measures we created to capture the three different types of structural and historical thinking discussed above.

Awareness of Inequality

Awareness of inequality was measured with six items from the Critical Reflection Subscale of the Critical Consciousness Scale (CCS; Diemer et al., 2017). This subscale is often used in CC research to assess awareness of inequality and has been validated for use with racial/ethnic minority youth (sample item: “Certain racial or ethnic groups have fewer chances to get good jobs”). More specifically, we utilized the three items of the CCS Perceived Inequality subscale that focused on racial inequality, excluding items asking about gender and class-based inequality. For each item used, we slightly adapted it so that respondents were asked about racism directed at both Latinx and Black people in the US (e.g. “Latinx people have fewer chances to get a good high school education than white people,” and “Black people have fewer chances to get a good high school education than white people”), for a total of six items.

Response options ranged from 1 (*Very Untrue*) to 5 (*Very True*). Cronbach's alpha for this scale was $\alpha = .95$.

Egalitarianism

We measured the second major component of critical reflection, egalitarian ideology, with the Egalitarianism Subscale of the CCS (Diemer et al., 2017). This five-item subscale assesses the extent to which an individual supports social hierarchies (sample item: "All social groups should be given an equal chance in life"). No specific groups or types of inequality are mentioned in this subscale. Response options ranged from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Cronbach's alpha for this scale was $\alpha = .82$.

Structural Attributions

A measure of structural attributions was created with items drawn from the social psychological literature intended to measure awareness of structural versus interpersonal attributions for inequality (Cortland et al., 2017; Craig et al., 2020). Additional items were adapted from the CCS (Diemer et al., 2017) to highlight the structural nature of inequality. Two items adapted from Cortland et al. (2017) ask the extent to which discrimination is structural in nature (sample item: "Most of the inequality that Latinx people face stems from policies that disproportionately disadvantage Latinx people"). Two further items were inspired by the types of inequality mentioned in the CCS (Diemer et al., 2017), which asks about contexts for inequality (e.g. work, school; sample item: "Many businesses intentionally keep Black people from gaining positions of power"). Each item was repeated to in regard to both anti-Black and anti-Latinx racism, for a total of 8 items assessing structural thinking. Response options ranged from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Cronbach's alpha for this scale was $\alpha = .92$.

Structural-Historical Thinking

Combined structural/historical thinking was measured with 6 items asking about the historical roots of structural inequality. These items were generated based on themes from the CCS (Diemer et al., 2017) and measures of historical knowledge and structural attributions from the social psychological literature on historical thinking (Nelson et al., 2013; Bonam et al, 2017). These items aimed to assess combined structural and historical thinking about inequality (sample item: “Years of slavery followed by Jim Crow laws—which legally enforced segregation, limited job opportunities, and kept Black Americans from voting—have created a racial wealth gap in the United States”). Three items concerned Black history and three focused on Latinx history in the US. Cronbach’s alpha for this scale was $\alpha = .88$. Response options ranged from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*).

Historical Relevance

The extent to which history is seen as important to understanding current events was measured with two items following the structural and historical questions. These items asked, “How relevant are events like these to issues [Black, Latinx] people face today?” Response options ranged from 1 (*Not at all Relevant*) to 5 (*Extremely Relevant*). These two items were correlated at $r = .62, p < .01$.

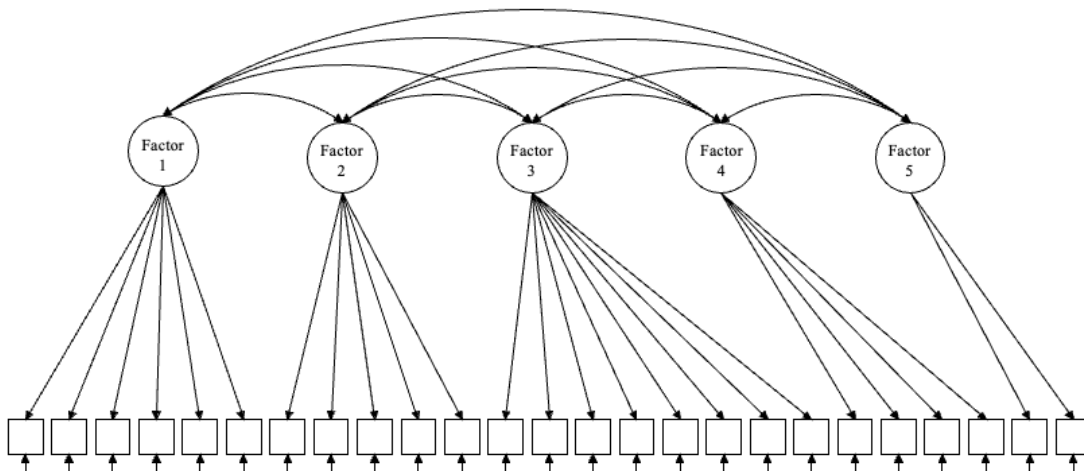
Analytic Plan

We conducted a series of theoretically-driven confirmatory factor analyses examining the factor structure that best represented interrelations between these items and scales. We used the Maximum Likelihood estimator and used Bayesian Information Criterion (BIC) values to compare fit among models. For factor analyses, $N=50$ is suggested as appropriate for a model with over 6 indicator variables per factor, and $N=100$ for models with 3-4 indicators per factor

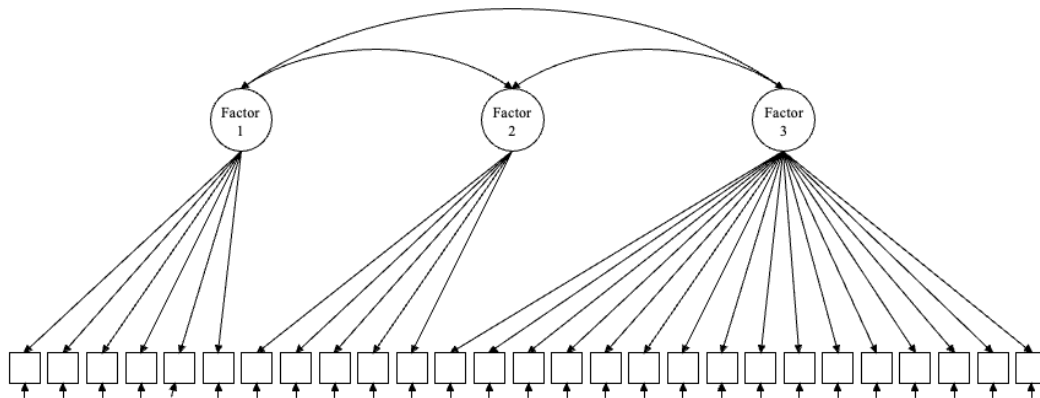
(Wang & Wang, 2012). Our sample was N=292 for proposed factors ranging from 5-13 indicators, giving us confidence in the power and precision of our estimates.

We hypothesized four theoretically likely factor structures for our model of structural and historical racial critical reflection. Factor structures for each model are displayed in Figure 1. We first estimated a five-factor model (model 1) in which all items were specified to load onto constructs representing their respective scales, leading to factors of awareness of inequality, egalitarianism, structural attributions, structural-historical thinking, and historical relevance. We then explored a three-factor model (model 2) with the traditionally employed factors of awareness of inequality and egalitarianism alongside a third factor composed of all newly introduced items: structural attributions, structural-historical thinking, and historical relevance. We next estimated a one-factor model (model 3) in which all items were specified to load onto only one factor. Finally, we estimated a second-order latent factor model (model 4) with higher order factors of awareness of inequality, egalitarianism, and a factor composed of latent factors of structural attributions, structural-historical thinking, and historical relevance. Latent factors were allowed to correlate in all models with more than one latent factor.

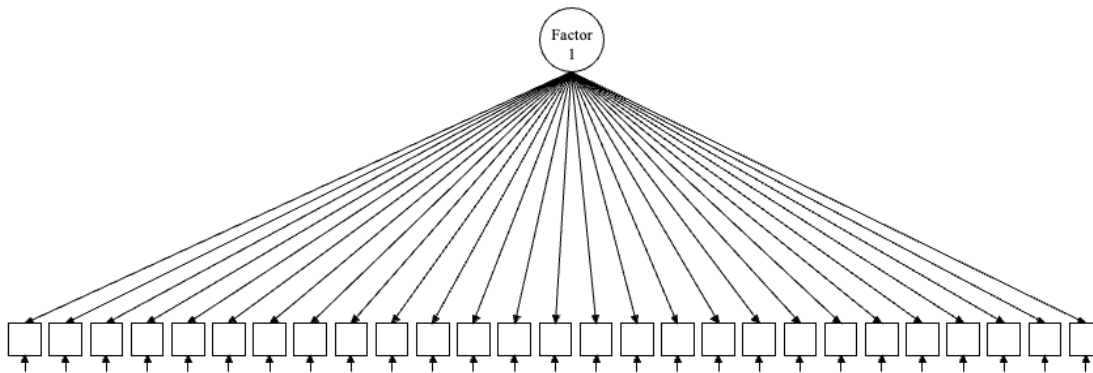
Figure 1. CFA models



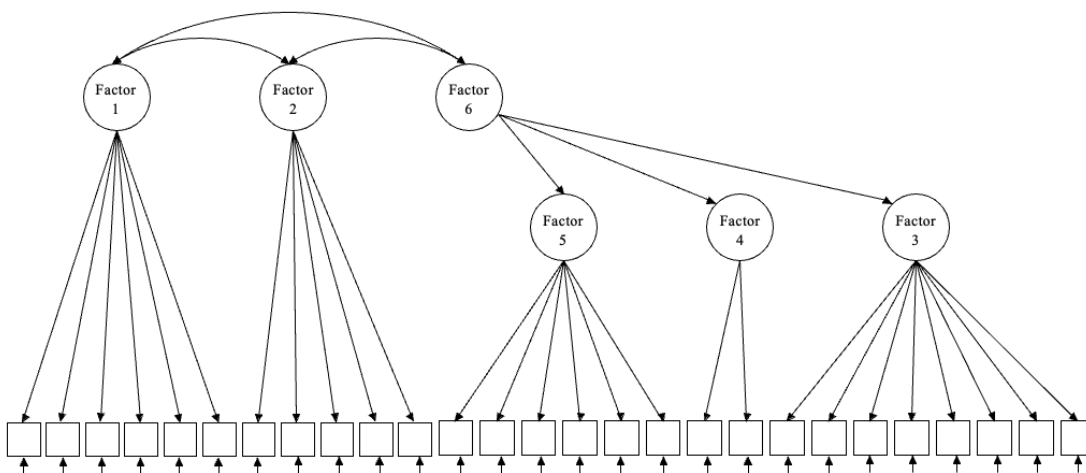
Model 1. Five factors (factor 1=awareness of inequality, factor 2=Egalitarianism, factor 3= structural attributions, factor 4=structural-historical thinking, factor 5= historical relevance).



Model 2. Three-factor model with factors of awareness of inequality (factor 1), egalitarianism (factor 2), and all structural and historical items (factor 3).



Model 3. All indicators load onto one single factor.



Model 4. Latent factor model with higher order factors of awareness of inequality (factor 1), egalitarianism (factor 2), and a higher order factor (factor 6) composed of latent factors of structural attributions (factor 3), historical relevance (factor 4), and structural-historical thinking (factor 5).

We followed established guidelines to evaluate model fit, specifically: (1) Root Mean Square Error of Approximation (RMSEA) below .05 (a higher RMSEA may be acceptable as long as it does not exceed .10 and if all other fit statistics are good); (2) the Benton Comparative Fit (CFI) above .95, and (3) the Standardized Root Mean Square Residual (SRMR) below .08 (Kline, 2011). BIC can be used to compare non-nested models using the same observed variables. In the present case, BIC was necessary to compare the latent factor model to the single order models, and can be applied to nested models as well (Muthen, 2012). A difference in BIC of greater than 10 is considered “very strong” evidence that the model with the lower BIC is a better fit to the data (Kass & Raftery, 1995; Muthen, 2012; Raftery, 1995). After establishing the best fitting factor structure for our data, we examined correlations among the factors in our best fitting model to determine if there are associations among these scales. Medium correlations ($.25 < r < .75$) would suggest associations without complete conceptual overlap.

Results

We conducted the four theoretically driven confirmatory factor analyses described above in Mplus to test the hypothesized relations among structural and historical thinking and related sub-dimensions of critical reflection. Model fit statistics are presented in Table 1 and factor structures in Figure 1. BIC comparisons provided strong evidence that Model 1 (five factor, higher order model) was the best model for our data. After selecting this five-factor model as the best fitting factor structure, we explored the factor structure in greater detail. We began by calculating item loadings onto factors (see the Appendix, Table A.1). All items loaded onto their specified factor at or above .68, with the exception of one reverse coded item that loaded onto the specified factor at .47.

Table 1

Fit Statistics for Main Models

Variable	CFI	RMSEA	SRMR	$\chi^2 (df)$	BIC
Five Factor Model	0.91	0.07	0.06	727.47(314)**	15679.80
Three Factor Model	0.87	0.08	0.07	900.80(321)**	15813.76
One Factor Model	0.74	0.11	0.09	1478.74(324)**	16081.29
Latent Factor Model	0.90	0.07	0.06	761.63(318)**	15691.47

* $p < .05$, ** $p < .01$

We then calculated the correlations among these five factors (Table 2). Correlations between factors ranged from $r = .46$ to $r = .82$ (Table 2). Notably, structural attributions were highly correlated with awareness of inequality ($r = .82$) and structural-historical thinking ($r = .81$).

Table 2

Standardized Factor Correlations

	1	2	3	4
1. Awareness of Inequality				
2. Egalitarianism	.50***			
3. Structural Attributions	.82***	.59***		
4. Historical Relevance	.66***	.46***	.75***	
5. Structural-Historical Thinking	.72***	.76***	.81***	.76***

Notes: Standardized correlations presented; all items were significant at $p < .001$.

Discussion

In this chapter, we discussed the rationale for incorporating structural and historical thinking into the ways we understand and measure critical reflection. Structural and historical thinking are key to theory on critical reflection as liberatory practice. These patterns of thinking can facilitate an understanding of the ways systems of oppression evolve over time, interact with each other, and manifest in the lives of individuals and communities. This awareness may better empower youth to fight inequality and shed light on key points of intervention.

Through our empirical analyses, we demonstrated that structural and historical thinking can be operationalized as sub-dimensions of racial critical reflection. We added new measures of

structural attributions for inequality, structural-historical thinking about current inequality, and endorsement of the past as relevant to present inequity to a measure of critical reflection. After testing several theoretically driven factor structures, we obtained a well-fitting model that included each of these new subscales as separate factors alongside currently employed factors of awareness of inequality and egalitarianism. The best fitting model specified five separate factors based on each subscale. A latent factor model in which all structural and historical thinking items loaded onto one higher order factor displayed meaningfully worse model fit, suggesting that these new factors represent fundamentally different constructs. Factor loadings were all high on their respective factors, suggesting that our indicators meaningfully represent their factors. The resultant factor structure suggested that we can think of structural attributions, structural historical thinking, and historical relevance as distinct, individual sub-dimensions of critical reflection rather than as components of the same higher-order sub-dimension.

The suggestion that egalitarianism, awareness of inequality, structural attributions, structural-historical thinking, and endorsement of historical relevance all form discrete dimensions of critical reflection is complicated by high correlations among some of these subscales, as all of the specified factors in the five-factor model were meaningfully correlated (see Table 2). However, strong correlations ($r > .75$) between structural-historical thinking and egalitarianism, structural attributions, and historical relevance suggest there may be some theoretical overlap among these constructs. Similarly, structural attributions and awareness of inequality were highly correlated ($r = .82$), also suggesting some possible redundancy among awareness of inequality, structural attributions, historical relevance, and structural-historical thinking—despite factor analytic results indicating that these measures form separate factors.

The high correlation between awareness of inequality and structural attributions suggests that the awareness of inequality scale does perhaps capture a degree of structural thinking. For general measurement, therefore, the widely used CCS may sufficiently capture the structural thinking inherent in critical reflection. Given the popularity of this measure, it is a good sign for the field that the CCS may implicitly tap into structural attributions. That said, depending on the goals of a particular study, researchers may well wish to include more nuanced measures of structural and historical thinking, and will likely want to do more work to distinguish between its different types. Studies with predictors or outcomes that have a theoretical link to structural or historical thinking should still consider measurement approaches that more explicitly prioritize these ideas. For example, an understanding of structural manifestations and historical roots of oppression may be central to research that considers systemic change and liberation.

Our finding of high correlations between constructs, despite factor analytic results suggesting that these scales represent discrete concepts, may reflect an inherent difficulty in operationalizing or measuring these complicated constructs, which often overlap in the real world. It may be impossible to completely separate these constructs. For instance, traditional measures of awareness of inequality may pick up on some structural attributions. Indeed, while awareness of inequality items have not necessarily been framed to highlight structural thinking explicitly, it seems that structural attributions would lead to an endorsement of these items. For example, items that ask about educational or occupational success (e.g. “Black people have fewer chances to get good jobs than white people”) could tap into a range of interpersonal, situational, and structural attributions about job candidates, employers, and industries. It would not be surprising if structural and historical attributions for inequality underpin an awareness of inequality or endorsement of egalitarian ideology. Similarly, awareness of inequality may drive

youth to seek a range of explanations for a social issue, leading to a higher awareness of structural and historical factors.

Many of these constructs are difficult to operationalize and measure in their own right, and may be inherently or tangentially connected. Different types of structural and historical thinking in particular are difficult to disentangle. It is difficult to imagine historical knowledge of inequality that does not rely on awareness of past laws, policies, and institutions. Conversely, structural attributions often entail an awareness of the origin of unjust social structures. Measuring these constructs presents a further difficulty, as awareness of structural and historical factors driving inequity must necessarily be specific to the instance of inequity in question, posing a problem in the creation of consistent measurement. Compare this need for domain specific measurement to constructs of endorsement of historical relevance and egalitarianism, which may be uniformly assessed across situations.

Limitations

We explored how to define structural and historical thinking and how to incorporate these ideas into a measure of critical reflection. We did not, however, explore what outcomes these types of thinking are important *for*, or how they might be differentially important in a range of contexts. It remains unclear from our empirical exploration whether structural and historical thinking in racial critical reflection indeed add necessary sub-domains to existing measures. While confirmatory factor analysis suggested that structural attributions, historical awareness, and combined structural historical thinking form discrete sub-dimensions of critical reflection, alongside traditional measures of awareness of inequality and egalitarianism, the correlations among these subscales may limit the unique added value these new subscales might provide. One source of this limitation may be the omission of outcomes from our data collection. Without

linking our newly generated sub-dimensions of racial critical reflection to outcomes of interest, it is unclear what these factors add to our understanding of processes related to critical reflection. Future work should explore how these measures relate to a range of predictors and outcomes of CC.

It is also worth noting that our empirical sample was predominately male (59%), which may impact generalizability. Furthermore, this study explored racial critical reflection items only among a young Latinx sample. There is theoretical and empirical precedence for validating CC scales in this way (McWhirter & McWhirter, 2016), but it is important to assess this new, expanded racial critical reflection instrument's validity with other demographic groups. The current study did not account for diversity of race, language, and immigration status—all potentially important factors with a Latinx sample.

Closing Thoughts

In this chapter we developed and tested a new, expanded racial critical reflection measure that more closely embodies the theoretical aims of critical reflection by emphasizing structural and historical thinking about racial inequity. The addition of these sub-dimensions may enable us to better assess the extent to which reflection considers the ways power and hegemony shape past and current inequities. We developed a five-factor model in which egalitarianism, awareness of inequality, structural attributions, endorsement of historical relevance, and structural-historical thinking served as distinct sub-dimensions of racial critical reflection. While correlations among some factors were high, confirmatory factor analyses suggested the existence of distinct factors.

Conceiving of critical reflection as a construct that comprises these new subcomponents has implications for wellbeing, social change, and intervention. First, structural and historical reflection may affect mental health. The association between CC and mental health is

complicated. Critical reflection is not always associated with positive mental health outcomes (Godfrey et al., 2019). An awareness of inequality in general can evoke negative emotions. Focusing on the structural factors driving inequality in particular may make inequity seem intractable. In this way, structural thinking could be overwhelming and ultimately disempowering for youth. A nuanced understanding of structural forces of inequality that points to areas for intervention may help disrupt this process. Relatedly, understanding these structures as situated in history may give youth a better sense of the process of social change over time. This knowledge may buffer negative mental health outcomes associated with awareness of inequality by reassuring youth that social change does happen, even if it is a slow process, and by normalizing both setbacks and victories as part of this process.

Structural and historical attributions may also motivate social change, a key goal of critical consciousness. A structural understanding of inequality may drive a sense of moral outrage and provide a target for this anger, such that frustration is aimed at structures and systems to be reformed instead of at individuals or social groups. A historical understanding of how inequality has been enforced over time may give youth perspective on how social change has been achieved in the past, and how it can continue to evolve in the future. Furthermore, a deeper understanding of the history of different social groups and how similar structures of inequality have affected different groups over time may increase intersectional awareness, thereby stoking solidarity among diverse groups to work together for increased equity.

Taken together, these suppositions have consequences for intervention and future research. They suggest that structural and historical thinking may have benefits for mental health and social change. Freire and later scholars of sociopolitical development emphasized the importance of structural and historical knowledge about inequality, and some early interventions

emphasized these discussions. It is still unclear, however, how these factors empirically relate to wellbeing or social change, or even compose aspects of critical reflection itself. Our empirical case study found high correlations among awareness of inequality and both structural attributions and structural-historical thinking. Future research should assess potential causal connections among these constructs in order to determine the most effective interventions targeting CC development. More evidence is needed to better understand potential causal links between structural and historical thinking and awareness of inequality and egalitarianism, and among these sub-dimensions of racial critical reflection and positive outcomes for youth facing oppression. A better understanding of the unique contribution of each of these sub-dimensions of racial critical reflection will highlight the most meaningful directions for future intervention work.

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APPENDIX

MEASURES

The Critical Consciousness Scale (CCS; Diemer et al., 2017)

Response options range from 1 (Strongly Disagree) to 6 (Strongly Agree).

1. Certain racial or ethnic groups have fewer chances to get a good high school education
2. Poor children have fewer chances to get a good high school education
3. Certain racial or ethnic groups have fewer chances to get good jobs
4. Women have fewer chances to get good jobs
5. Poor people have fewer chances to get good jobs
6. Certain racial or ethnic groups have fewer chances to get ahead
7. Women have fewer chances to get ahead
8. Poor people have fewer chances to get ahead
9. It is a good thing that certain groups are at the top and other groups are at the bottom (reversed)
10. It would be good if groups could be equal
11. Group equality should be our ideal
12. All groups should be given an equal chance in life
13. We would have fewer problems if we treated people more equally

Awareness of Inequality Scale, adapted from Critical Reflection Subscale of the Critical Consciousness Scale (Diemer et al., 2017)

How true are the following statements?

Response options range from 1 (Strongly Disagree) to 5 (Strongly Agree).

1. Black people have fewer chances to get a good high school education than White people
2. Black people have fewer chances to get good jobs than White people
3. Black people have fewer chances to get ahead than White people
4. Latinx people have fewer chances to get a good high school education than White people
5. Latinx people have fewer chances to get good jobs than White people
6. Latinx people have fewer chances to get ahead than White people

Egalitarianism scale, from Critical Reflection Subscale of the Critical Consciousness Scale (Diemer et al., 2017)

How much do you agree with the following statements?

Response options range from 1 (Strongly Disagree) to 5 (Strongly Agree).

1. It is a good thing that certain social groups are at the top and other social groups are at the bottom (reversed)
2. It would be good if social groups could be equal
3. Group equality should be our ideal
4. All social groups should be given an equal chance in life
5. We would have fewer problems if we treated people more equally

Structural attribution scale, items 1, 2, 4, and 6 adapted from Craig et al., 2020; items 3, 4, 7, and 8 generated based on Diemer et al., 2017

How much do you agree with the following statements?

Response options range from 1 (Strongly Disagree) to 5 (Strongly Agree).

1. Most of the inequality that Black people face stems from policies that disproportionately disadvantage Black people
2. Anti-Black discrimination is primarily caused by institutional practices that disadvantage Black people
3. Many businesses intentionally keep Black people from gaining positions of power
4. Racism in the educational system limits the success of Black people
5. Most of the inequality that Latinx people face stems from policies that disproportionately disadvantage Latinx people
6. Anti-Latinx discrimination is primarily caused by institutional practices that disadvantage Latinx people.
7. Many businesses intentionally keep Latinx people from gaining positions of power
8. Racism in the educational system limits the success of Latinx people

Structural-historical thinking, inspired by measures from Nelson et al., 2013; Bonam et al., 2017

How useful are the following statements in understanding present-day inequality?

Response options range from 1 (Not at all Useful) to 5 (Very Useful).

1. Years of slavery followed by Jim Crow laws – which legally enforced segregation, limited job opportunities, and kept Black Americans from voting – have created a racial wealth gap in the United States.
2. The United States criminal justice system has historically delivered longer sentences to Black Americans than White Americans who commit the same crimes, leading to high numbers of incarcerated Black Americans.
3. The Supreme Court ruling in Plessy v. Ferguson (1896), namely that separate facilities for Whites and Blacks were constitutional, encouraged discriminatory laws, leading to direct consequences on present day school and residential segregation.
4. A history of redlining and denying home loans to Latinx families has contributed to a racial wealth gap in which White American families have more than eight times that of Hispanic and Latinx families.
5. American foreign policy and CIA involvement in Central America during the Reagan administration led to the rise of state and drug violence in countries including, but not limited to El Salvador, Guatemala, Honduras, and Nicaragua, creating the conditions that cause many Central Americans to seek refugee status in the US today.
6. Despite a treaty guaranteeing full US citizenship to Mexicans living on land that was annexed by the US during the Mexican-American War, the US government did not protect Latinx families from violence and displacement by White settlers, leading to a loss in property and wealth with intergenerational impacts.

Historical relevance

Response options range from 1 (Not at all Relevant) to 5 (Very Relevant).

1. How relevant are events like these [those listed in the preceding measure of structural-historical thinking] to issues Black people face today?
2. How relevant are events like these [those listed in the preceding measure of structural-historical thinking] to issues Latinx people face today?

FACTOR LOADINGS

Table A.1. Standardized *Factor Loadings for Five Factor Model*

Variable	Loading	SE
Awareness of Inequality		
Black people have fewer chances to get a good high school education than White people	0.857	0.019
Black people have fewer chances to get good jobs than White people	0.851	0.019
Black people have fewer chances to get ahead than White people	0.894	0.015
Latinx people have fewer chances to get a good high school education than White people	0.852	0.021
Latinx people have fewer chances to get good jobs than White people	0.868	0.019
Latinx people have fewer chances to get ahead than White people	0.851	0.021
Egalitarianism		
It is a good thing that certain social groups are at the top and other social groups are at the bottom (reverse-coded)	0.472	0.052
It would be good if social groups could be equal	0.779	0.03
Group equality should be our ideal	0.768	0.032
All social groups should be given an equal chance in life	0.677	0.038
We would have fewer problems if we treated people more equally	0.768	0.032
Structural Attributions		
Most of the inequality that Black people face stems from policies that disproportionately disadvantage Black people	0.842	0.021
Anti-Black discrimination is primarily caused by institutional practices that disadvantage Black people	0.772	0.027
Many businesses intentionally keep Black people from gaining positions of power	0.709	0.033
Racism in the educational system limits the success of Black people	0.808	0.024
Most of the inequality that Latinx people face stems from policies that disproportionately disadvantage Latinx people	0.786	0.029
Anti-Latinx discrimination is primarily caused by institutional practices that disadvantage Latinx people	0.753	0.033
Many businesses intentionally keep Latinx people from gaining positions of power	0.688	0.039
Racism in the educational system limits the success of Latinx people	0.741	0.034
Structural-Historical Thinking		
Years of slavery followed by Jim Crow laws – which legally enforced segregation, limited job opportunities, and kept Black Americans from voting – have created a racial wealth gap in the United States	0.725	0.033
The United States criminal justice system has historically delivered longer sentences to Black Americans than White Americans who commit the same crimes, leading to high numbers of incarcerated Black Americans	0.704	0.035

The Supreme Court ruling in Plessy v. Ferguson (1896), namely that separate facilities for Whites and Blacks were constitutional, encouraged discriminatory laws, leading to direct consequences on present day school and residential segregation	0.744	0.032
A history of redlining and denying home loans to Latinx families has contributed to a racial wealth gap in which White American families have more than eight times that of Hispanic and Latinx families	0.75	0.035
American foreign policy and CIA involvement in Central America during the Reagan administration led to the rise of state and drug violence in countries including, but not limited to El Salvador, Guatemala, Honduras, and Nicaragua, creating the conditions that cause many Central Americans to seek refugee status in the US today	0.773	0.032
Despite a treaty guaranteeing full US citizenship to Mexicans living on land that was annexed by the US during the Mexican-American War, the US government did not protect Latinx families from violence and displacement by White settlers, leading to a loss in property and wealth with intergenerational impacts	0.687	0.036
Historical Relevance		
How relevant are events like these [those listed in the preceding measure of structural-historical thinking] to issues Black people face today?	0.763	0.043
How relevant are events like these [those listed in the preceding measure of structural-historical thinking] to issues Latinx people face today?	0.794	0.041

Notes: Standardized loadings presented; all items were significant at $p < .001$.