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SEEING THE SYSTEM VS SEEING THE INDIVIDUAL: HOW CONTEXTUAL INFORMATION AND FRAMING FACILITATE PERCEPTIONS OF STRUCTURAL INEQUALITY

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SEEING THE SYSTEM VS SEEING THE INDIVIDUAL: HOW CONTEXTUAL
INFORMATION AND FRAMING FACILITATE PERCEPTIONS OF STRUCTURAL
INEQUALITY

THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science in the
College of Arts and Sciences
at the University of Kentucky

By

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Lexington, Kentucky

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2023

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ABSTRACT OF THESIS

SEEING THE SYSTEM VS SEEING THE INDIVIDUAL: HOW CONTEXTUAL INFORMATION AND FRAMING FACILITATE PERCEPTIONS OF STRUCTURAL INEQUALITY

The current study investigates factors that facilitate adolescents' structural attributions. Namely, we focus on two main factors. First, we investigate if contextual information such as intergroup/intragroup comparisons and group/individual level framing of inequalities affects the likelihood of making structural attributions to race-based inequalities in academic achievement. Second, we investigate if the likelihood of making structural attributions differs based on individual characteristics, such as the individuals' race/ethnicity, subjective and objective social status, and belief in meritocracy and a just world. Results and its implications will be discussed in the paper.

KEYWORDS: Discrimination, Meritocracy, Perceptions of Inequality, Resource Redistribution, Racial Inequality, Structural Attributions

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04/17/2023

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DEDICATION

To my parents Hae-Sook Jeon and Sang Kyoung Kahng, and the little boy from Northwood V who wanted to become his parents.

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I am sorry 서울 할머니 for not being next to you when you moved on. Mom and Dad, 사랑합니다.

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CHAPTER 1. INTRODUCTION

Introduction

“The American dream that we were all raised on is a simple but powerful one: If you work hard and play by the rules, you should be given a chance to go as far as your God-given ability will take you.”

- Bill Clinton

The American Dream is built on the tenet of meritocracy (Hochschild, 1995; Sandel, 2020), which asserts the importance of individual agency for one’s successes and failures. This tenet is reflected in the majority of American’s attitudes, in which 77% of Americans believe that hard work leads to success (PEW, 2012) and 69% believe greater individual effort and skill are positively correlated with higher economic rewards (Isaacs, 2016). While aspirational, the assumption that individuals are successful if they work hard ignores the deep and persistent structural inequalities in the U.S. (O’Brien et al., 2009).

1.1 Structural Inequalities

Structural inequalities, defined as a system of privilege towards a certain category of people (Amadeo, 2021), are reinforced by institutions, norms, and policies and can unfairly limit the opportunities of an individual based on their group identities (Dovidio, Hewstone, Glick, & Esses, 2010), such as gender (Homan, 2019), SES (Rowe & Perry, 2020), and race/ethnicity (Currie, 2018; Harper, Dugan, Espeland, Martinez-Borges, & McQuellon, 2008). Structural racial inequalities within education can include lower levels of school funding, fewer qualified teachers, and fewer advanced level courses at

schools with larger proportions of Black and Latinx students relative to White students (Clotfelter, Ladd, & Vigdor, 2005; Edbuild.org, 2019; Rumberger & Palardy, 2005). For example, in the 2015–2016 school year, predominantly Black and Latinx school districts received \$23 billion less than predominantly White school districts, despite having the same number of students (EdBuild, 2019). Given these pernicious structural inequalities, it is not surprising that there are comparable disparities in academic achievement, such that Black and Latinx students have on average lower GPAs and are more likely to drop out of high school compared to their White peers (Aud, Hussar, Planty, Snyder, Bianco, Fox, Frohlich, Kamp, & Drake, 2010; Reardon, Kalogrides, & Shores, 2019).

Despite these documented structural inequalities, an overconfidence in meritocracy (O’Brien, Blodorn, Alsbrooks, Dube, Adams, & Nelson, 2009), and a desire to minimize the unpredictable and unjust aspects of society (Jost & Hunyady, 2005), can lead individuals to overlook or underestimate the importance of structural elements of inequality when explaining disparities in outcomes. To use the previous example, instead of focusing on structural inequalities, such as racial discrepancies in school funding as the reason for the racial achievement gap, people oftentimes focus on individual attributions, such as the students’ lack of hard work or motivation (Reyna, 2000). These individualized explanations can lead to justifications in disparities between different social groups (Sidanius & Pratto, 2001), the perpetuation of prejudice for disadvantaged groups (Kraus & Keltner, 2013), and the lack of structural intervention because they are viewed as ‘unchangeable’ (Lewontin, 1996). Blaming individuals (e.g., “He did poorly in school because he is lazy.”) instead of structural inequalities (e.g., “He did poorly in

school because his school was underfunded, understaffed, overcrowded, and punitive.”) also allows an individual to maintain the belief that “hard work pays off.”

Perceptions of Structural Inequality in Late Adolescence

Unfortunately, ignoring structural inequalities means less public support for structural solutions (e.g., such as changes to the school taxing structure) to overcome those inequalities (Alesina, Glaeser, & Sacerdote, 2001). Thus, to reduce structural inequalities, it is critical that people are able to perceive structural inequalities when present.

Furthermore, it is even more important to understand perceptions of structural inequalities in late adolescence. The United States is a democracy, where change stems from the political participation of its citizens (Dahl, 1998; Krampen, 2000). As neophytes who can vote for policies that address societal inequalities, it is essential to understand how emerging adults understand where inequalities stem from. Yet, little research has examined how different situations and individual difference factors lead individuals to explain disparities by making attributions to structural inequalities rather than individual reasons.

Therefore, in the current study, we investigated if contextual information affects the likelihood of making structural attributions to race-based inequalities in academic achievement among a sample of late adolescents. We also investigated how the likelihood of making structural attributions differs based on the individual’s race/ethnicity, social dominance orientation, belief in meritocracy, and belief in a just world.

Attribution Theory

Previous research suggests that individual and structural explanations about social phenomena can be elucidated by the attribution theory (Graham, 1991; Sahar, 2014). Individuals tend to attribute others' failures to internal causes (such as lack of effort or ability), while attributing others' successes to external causes (such as luck; Jones & Nisbett, 1971). But individuals show the opposite pattern when making attributions about themselves (e.g., giving credit for successes to their hard work and blaming their failures on bad luck or bias; Miller & Ross, 1975). These tendencies (referred to as the self-serving bias) likely have both cognitive and motivational roots (Forsyth, 2008). Individuals are motivated to explain their own successes as factors within their control, and cognitively, they have more knowledge of their own internal processes. Thus, internal causes are salient when describing the self (Bem, 1972). When explaining others' behaviors, individuals seem motivated, perhaps to maintain their own self-esteem (Ross & Sicoly, 1979; Miller, 1976), to attribute others' successes to external factors rather than their (relatively stronger) work ethic or ability; yet, others' failures are often assumed to be due to lower ability or work ethic and external factors are devalued (Reyna, 2000).

Processes Involved in Making Attributions to Structural Inequalities

To make any causal attribution, individuals engage in counterfactual reasoning (Kahneman & Miller, 1986; Lipe, 1991). This means that they mentally change features of the actual world, while leaving other features unchanged, to envision an alternate situation (Woodward, 2011). To illustrate, consider the aforementioned achievement gap between Black and White students. One can consider differences in student achievement to be caused by the disparity in the quality of teachers for Black and White students (teacher quality framed as *c* for cause). Counterfactual reasoning involves mentally

omitting factor *c* while leaving other properties, such as school learning facilities, student funding, and student demographics, unchanged. If removing factor *c* mitigates discrepancies in grades, one can consider the disparity in quality of teachers as a meaningful attribution for the academic achievement gap.

For individuals to make attributions about group-based structural inequalities, counterfactual reasoning must also likely incorporate group-level information. Specifically, one can contextualize information by comparing an individual to an ingroup member (i.e., an *intragroup comparison*) or an outgroup member (i.e., *intergroup comparison*). For example, Hetey and Eberhardt (2018) found that Oakland, CA saw a decrease in crime once they decreased their use of 'tough-on-crime' policies. When other states were able to see the intragroup comparison (i.e., Oakland crime rates before and after the policy change), they adopted a structural explanation and made similar policy changes. Additionally, Brown and Bigler (2004) found that children who were able to make an intergroup comparison, who were able to compare an individual's negative outcome to an outgroup's more positive outcome, were more likely to make an attribution to discrimination ("Mr. Franks almost always gives boys higher grades than girls on their stories").

Although extant research suggests that these counterfactual reasoning methods are conducive to perceiving inequality (Brown & Bigler, 2004; Hetey & Eberhardt, 2018), fewer studies have examined which type of counterfactual comparisons alter peoples' perceptions of structural inequality.

Beyond the types of counterfactual information presented, the ways the comparisons are situationally framed may also facilitate perceptions of structural

inequality. Specifically, if the situation is framed around the individual (e.g., “Why is Kevin failing his class?”), an observer may be inclined to focus on individual attributions. However, if the situation is framed around the group (e.g., “Why is the graduation rate of Black students lower than White students?”), an observer may more readily see group-level reasons for the disparities. This is consistent with the personal/group discrimination discrepancy (Crosby, 1984), in which individuals tend to perceive more discrimination when it is asked about the group level (e.g., “Have women ever been discriminated against?”) than when asked about personal experiences (e.g., “As a woman, have you ever been discriminated against?”). It is theorized that attributions about individual-level outcomes are more informationally complex than group-level outcomes, as there are many salient reasons an individual person may have a certain outcome (Quinn, Roese, Pennington, & Olson, 1999). In contrast, group-based inequalities embedded within structures may be easier to perceive when thinking about group-level disparities.

Individual Differences That May Influence Perceptions of Structural Inequalities

Individuals’ differing backgrounds and beliefs also likely contribute to differences in their tendency to make attributions to structural inequalities. Specifically, their beliefs in meritocracy, social dominance orientation, procedural and distributive justice world beliefs, racial attitudes, as well as their own ethnicity and socioeconomic background, may facilitate their attributions.

A structural understanding of inequality undermines the notion of individual responsibility that is emphasized in meritocracy (O’Brien, Blodorn, Alsbrooks, Dube, Adams, & Nelson, 2009). Since the core tenet of meritocracy lies in individual agency for social success (Major, Kaiser, O’Brien, & McCoy, 2007), adolescents who highly

endorse meritocracy, which is the belief that individual effort and ability predicts personal success, may be inclined to deny structural inequality (Jost et al., 2003).

Similarly, adolescents who have higher endorsement of just world beliefs, which is the belief that an individual's outcome is what they deserve, may be more likely to provide individual attributions for grade disparities (Lerner, 1980; Lucas et al., 2007). Because endorsement of just world beliefs is undergirded by the notion the world is a fair place, previous literature suggests that higher endorsement of BJW leads to negative perceptions of the underperforming individual (Digidiki et al., 2016). Thus, higher orientation of just world beliefs can lead people to overlook structural attributions to academic disparities.

Additionally, adolescents who endorse a social dominance orientation (SDO), which is the desire to legitimize preexisting orders of hierarchy, have a greater tendency to exhibit hierarchy-enhancing legitimizing myths to maintain the social system that undergirds the current group hierarchy (Sidanius, Pratto, & Rabinowitz, 1994). Extant literature suggests individuals' higher endorsement of SDO was negatively correlated with structural policies aimed at decreasing inequality, such as social welfare programs and affirmative action (Pratto, 1994). Hence, youth with a higher endorsement of SDO may be less likely to endorse structural attributions to academic disparities.

Lastly, individuals who endorse egalitarian racial attitudes to a lesser extent may overlook structural attributions. Previous research suggests that participants who had a more sensitive cognitive racial attitude attributed poverty to structural reasons (Toporek et al., 2005). Similarly, participants who highly endorse egalitarian racial attitudes may attribute disparities in grades to structural reasons over individual reasons.

Thus, individuals who believe that the world is just, that merit is rewarded with success, and believe that the existing hierarchies in society are legitimate may be disinclined to make attributions to structural inequalities (instead perceiving individual reasons, such as lack of ability or effort, to be the reason for negative outcomes) (Kteily et al., 2017).

The race/ethnicity of the individual may also inform their attributions to structural inequality. For example, previous studies have shown that White Americans in particular tend to endorse meritocratic beliefs compared to their Black and Latinx counterparts (Kluegel & Smith, 1986; O'Brien & Major, 2005). Such ideological asymmetry may stem from the vested interest of the dominant group to legitimize the current societal hierarchy (Levin, Sidanius, Rabinowitz, & Federico, 1998). White Americans also have less exposure and experiences with racial and class discrimination, including structural and systemic racism (Myrdal, Rose, & Sterner, 1944). As such, they may be less aware of structural inequalities as an explanation for racial disparities.

Current Study and Hypotheses

The current study investigates how counterfactual reasoning (namely intergroup comparisons or intragroup comparisons) and group/individual level framing alters individuals' attributions to structural inequalities rather than individual explanations. In a 2 X 2 between-subjects design, participants will read one of four short vignettes about racial achievement gap. Half of the participants will then see an *intergroup comparison* in which a Black student (Darius) at a poorly funded school is contrasted with a White student (Will) at a well-funded school; the other half of participants will see an *intragroup comparison* in which a Black student (Darius) at a poorly funded school is

contrasted with a different Black student (Will) at a well-funded school. Following each vignette, half of the participants will be asked about the individual performance of the student Darius (i.e., *individual framing*), the other participants will be asked about the performance of the students from Darius' school in general (i.e., *group framing*).

It is hypothesized that participants who read intragroup comparisons at the group-level of framing will be the most likely to make an attribution to structural inequalities compared to participants who read an intergroup comparison at the individual-level of framing. It is also hypothesized that making structural attributions will have implications for resource allocation. Specifically, it is hypothesized that participants who make attributions to structural inequalities will be more likely to endorse a redistributive resource allocation, such that underfunded schools will be allocated more resources than well-funded schools.

Finally, it is predicted that there will be individual differences in attributions. Specifically, it is hypothesized that White participants will make fewer attributions to structural inequalities than participants of color. It is also hypothesized that, over and above biased racial attitudes, individuals who hold a strong belief in meritocracy, a just world, and social dominance orientation will make fewer structural attributions than individuals who do not believe in meritocracy and a just world.

CHAPTER 2. METHODS

Participants

Participants for the current study included 500 undergraduate students (117 men, 365 women, 7 non-binary, 1 preferring a different term) recruited from an introductory

psychology course student pool from a large predominantly White public university in the Southeastern United States. Of the participants, 17.9% of students were African American/Black, 66.4% were Caucasian/White, and 15.7% of students were from other races. African American/Black students were purposefully oversampled relative to the student population to facilitate data analyses. Regarding household/parent socioeconomic status (SES), 2.6% of students came from a family that made less than \$10,000, 1.4% of students came from a household that made \$10,000 to \$15,000, 4.4% from \$15,001 to \$25,000, 8.2% from \$25,001 to \$50,000, 13.6% from \$50,001 to \$75,000, 19.6% from \$75,001 to \$100,000, 19.0% from \$100,001 to \$150,000, 14.8% from \$150,001 to \$200,000 and 14.0% from a household that made more than \$200,000 annually.

Study Design and Materials

The current study utilized a 2 (intergroup comparison vs. intragroup comparison) X 2 (individual-level framing vs. group-level framing) between-subjects design. Participants were randomly assigned to one of four conditions. Half of the participants saw an *intergroup comparison* in which a Black student (Darius) at a poorly funded school was contrasted with a White student (Will) at a well-funded school; the other half of participants saw an *intragroup comparison* in which a Black student (Darius) at a poorly funded school was contrasted with a different Black student (Will) at a well-funded school. Both vignettes provided visual aids to make the story more engaging. Participants in both groups were told that Darius and his peers are receiving lower grades in the National Assessment of Educational Progress exam compared to Will. Following each vignette, half of the participants were asked about the individual performance of the student Darius (i.e., *individual framing*), the other participants will be

asked about the performance of students from Darius' school in general (i.e., *group framing*).

Student images (Darius and Will) used in the vignettes were pilot tested by research assistants to standardize expression, attractiveness, and likeability prior to the analyses. Furthermore, school images were also cross coded to ensure they portrayed key facilities clearly. A subsequent pilot test of the stimuli was conducted.

The current study also employed a mixed methods design by using quantitative measures for individual difference measurements and structural attributions, and qualitative measures for reasoning about structural inequality and solutions on how Darius can improve his grades. A synthesis of both measures allowed us to analyze late adolescents' perceptions of structural inequality more broadly using quantitative measures and provided a more nuanced understanding in the types of reasoning youth used to reason inequalities about educational disparities.

2.1.1 Perception of Structural Inequality

After reading the vignettes, all participants completed qualitative measures that assessed their perception of structural inequality. First, they were asked, "Why do you think Will received higher grades than Darius?" Next, they were asked "How do you think Darius can improve his grades for the next National Aptitude Test?"

Subsequently, participants completed quantitative measures to assess their endorsement of individual or structural explanations for the students' performances and intelligence. Drawing from attribution theory (Prins & Schafft, 2009), three questions focused on individual attributions (ability, effort, individual values), while two questions focused on structural attributions (teachers, general resources). Specifically, participants

rated their agreement, on a 4-point Likert scale, ranging from 1 (“strongly disagree”) to 4 (“strongly agree”), with five experimenter-provided explanations: (1) “Adam had higher grades than Darius because he is smarter than Darius,” (2) “Adam had higher grades than Darius because he worked harder at school than Darius,” (3) “Adam had higher grades than Darius because he values education more than Darius,” (4) “Adam had higher grades than Darius because his teachers are more qualified than Darius’ teachers,” (5) “Adam had higher grades than Darius because his school had more student resources than Darius’ school.”

2.1.2 Resource Allocation Attitudes

To gauge how participants would distribute resources across schools, we adapted standard resource allocation tasks (McGuire et al., 2018). Participants were asked to imagine that they were in charge of passing out \$5000 that could be spent on pencils or notebooks to assess their allocation of basic needs. They were asked to decide how much of \$5000, and why, should be allocated Darius’ school and Adam’s school. Then, to assess their allocation of luxury items, they were told that a new fund has been created with \$5000 to purchase iPads for students. They were asked to decide how much of the \$5000, and why, should be allocated to each school.

2.1.3 Belief in Meritocracy

To measure the participants’ belief in meritocracy, we utilized the four items from the Belief in Meritocracy Ideology Scale (Lalonde, Doan, & Patterson, 2000; Foster & Tsarfati, 2005). Participants were asked how much they agree with the 4 statements, such as “Everybody in this country has equal opportunities” and “Many social barriers prevent people from ‘minority groups’ from getting ahead.” They rated their agreement on a 7-

point Likert scale, ranging from -3 (“strongly disagree”) to 3 (“strongly agree”), with 0 indicating a “neutral” response. Higher average scores indicated a stronger belief in meritocracy. This scale has been shown to high internal reliability ($\alpha=0.79$; Forster & Tsarfati, 2005).

2.1.4 Social Dominance Orientation

Participants then completed the social dominance orientation (SDO7) scale (Ho, Sidanius, Kteily, Sheehy-Skeffington, Pratto, Henkel, Foels, & Steward, 2015).

Participants answered questions that assessed their pro-trait dominance (e.g., “Some people must be kept in their place.”), con-trait dominance (e.g., “Groups at the bottom should not have to stay in their place.”), and pro-trait anti-egalitarianism (e.g., “We should not push for group equality.”). Responses ranged from 1 (“strongly oppose”) to 7 (“strongly favor”), with 4 indicating “neutral.” Higher scores indicated a stronger social dominance orientation. This scale has been shown to high internal reliability ($\alpha=0.90$; Pratto, Sidanius, Stallworth, & Malle, 1994).

2.1.5 Justice Belief

Finally, participants completed the Procedural and Distributive Just World Belief Scale (Lucas, Zhandova, & Alexander, 2011). Participants rated their agreement with 16 statements related to their attitudes of distributive justice (i.e., a belief in a world with fair outcomes), such as “People usually receive the outcomes they deserve”; and procedural justice (i.e., fair procedures and interpersonal treatment), such as “People are generally subjected to processes that are fair.” They rated their agreement on a 7-point Likert scale, ranging from 1 (“strongly disagree”) to 7 (“strongly agree”). Higher average scores indicated stronger belief in a just world as a form of system-justifying beliefs. This scale

has been shown to high internal reliability ($\alpha=0.88$; Lucas, Zhandova, & Alexander, 2011).

2.1.6 Racial Attitudes

To account for racial attitudes, participants completed the four-item measure of racial attitudes, called the FIRE (fear, acknowledgment of institutional racism, and racial empathy; DeSante & Smith, 2020). Participants rated their agreement with each statement: (1) “I am fearful of people of other races,” (2) “White people in the US have certain advantages because of the color of their skin,” (3) “Racial problems in the US are rare, isolated situations,” (4) “I am angry that racism exists.” They rated their agreement on a 4-point Likert scale, ranging from 1 (“strongly disagree”) to 4 (“strongly agree”).

2.1.7 Demographic Information

Finally, all students were asked to provide information about their gender, race/ethnicity, and household/parent socioeconomic status (SES).

CHAPTER 3. RESULTS

Overview of Data Analysis

To examine quantitative data, mixed analyses of variance were analyzed to test for differences across vignettes and hierarchical linear regressions were analyzed to test for moderation. The intercorrelations between all variables are listed in Table 1. The means of all variables are listed in Table 2 and Table 3.

To examine qualitative data, a thematic analysis was conducted. The crux of the analysis was to capture the prominent theme or idea the participant responses provided. There were four main steps to the thematic analysis process. In the first step, three

research assistants read the five open-ended questions and discussed what they felt were recurring topics mentioned throughout. The first author recorded the prominent themes that arose during the three 90-minute meetings. In the second step two, both authors created a coding scheme with approximately seven categories per question, which were then distributed back to the three research assistants. The three research assistants then coded the five open-ended questions independently. In the third step, after a preliminary sweep through the dataset, the two lead researchers condensed the coding scheme to have a more compendious theme. Specifically, both authors utilized Bronfenbrenner's bioecological systems theory to coalesce the overlapping codes. In the final step, two of the three original research assistants categorized responses based on the revised coding scheme. The kappa values of agreement for each code ranged from .81 to .93.

Vignette Condition and Attributions

To examine participants' attributions based on the type of comparison and framing within the vignette, we conducted a 2 (vignette comparison: intergroup vs. intragroup) X 2 (level of framing: group vs. individual) X 5 (type of attribution: ability, effort, value, teacher quality, student resources) mixed analysis of variance, in which the last variable was a within-subjects variable. There was a significant main effect of structural attributions, $F(4, 1652) = 718.709, p = .000$. Post hoc tests indicated that, regardless of vignette or framing, participants attributed the differences in students' academic achievement to disparities in student resources and teacher quality significantly more strongly than ability or effort. See Table 2 for means. No other effects were significant.

We further examined whether responses differed by race or SES. Counter to predictions, there were no significant differences in participants' attributions based on their race or SES.

Resource Allocation Attitudes

To examine how participants allocated funds to the two schools, we conducted a 2 (vignette comparison: intergroup vs. intragroup) X 2 (level of framing: group vs. individual) X 2 (percentage of budget allocated to Darius' school: basic needs items vs. luxury items) mixed analysis of variance, in which the last variable was a within-subjects variable. There was a significant main effect of budget allocation, $F(1,380) = 21.37, p < .001$. Specifically, regardless of the vignette condition, participants allocated a higher percentage of funds to help Darius' school buy more basic needs items compared to luxury items (M_s [SDs]= 7.59[1.67]; 7.15 [2.10], respectively; $t = 4.629, p < .001$). There were no significant interactions.

Next, we examined whether the degree to which a participant endorsed a structural attribution predicted their allocation of resources to the schools. Two linear regression models were conducted to examine whether making a structural attribution predicted a higher proportion of basic and luxury resources allocated to the underfunded school relative to the well-funded school. In terms of basic needs ($F[1, 416] = 22.569, p < .001, R^2 = .051$), a stronger endorsement of structural attributions significantly predicted a greater allocation of pencils and notebooks to the underfunded school, $\beta = .227, p < .001$. In terms of luxury items ($F[1, 427] = 10.266, p = .001, R^2 = .024$), a stronger endorsement of structural attributions significantly predicted a greater allocation of iPads to the underfunded school, $\beta = .153, p = .001$.

Open-Ended Attributions

To explore late adolescents' reasoning about inequalities, they were asked an open-ended question which prompted them to explain why Darius received higher grades than Will. Results showed that 6% of students (30 out of 500) provided an individual attribution for the disparity in grades. Students who provided individual attributions oftentimes cited innate differences in intelligence and ability, such as "Will is naturally smarter than Darius," "Will is a better test-taker," and "Genetics." Others cited the discrepancy in the amount of effort Darius and Will exerted by saying: "Will studied harder and grasped the information better," "Will prepared for a longer period of time," and "Will applied himself more." Individual attributions did not differ by condition.

In contrast, 85.4% of participants (428 out of 500) provided structural reasons for the disparity in grades. For instance, the vast majority of participants (78.4% or 392 out of 500) explained that the discrepancy in Darius' and Will's grade stemmed from the difference in resources and environment between the two schools. Such explanations included answers such as: "The learning environment that Will is in is more stimulating and encouraging than the environment that Darius is in every day," and "He (Will) has access to better study tools and more resources to help him succeed." A smaller percentage of participants (5.8% 29 out of 500) cited broader societal inequalities, which ranged from answers such as: "Because he (Will) was born into a different social status and environment that provided him with more resources for success," to "Will's school is in a wealthier school district which aren't given the same amount of money." Lastly, a small subset of participants (1.4% or 7 out of 500) cited the gap in Darius' and Will's parents' wealth lead to different exam scores. Such answers included: "Will's parents

probably have more money to pay for tutoring opportunities,” and “Will’s parents pay more fees for a better education.”

Subsequently, we investigated if participants had varying levels of SDO, BMI, BIJW, and racial attitudes depending on the type of reasoning for inequality late adolescents provided. A one-way ANOVA was conducted with the qualitative measure of attributions for academic disparities as the independent variable and SDO, BMI, BIJW, and racial attitudes as the dependent variables for the four separate ANOVAs. Results suggested that there were no significant differences between participants who gave individual explanations and participants who gave structural attributions for academic disparities in their endorsement of social dominance orientation (SDO), belief in a just world (BIJW), and racial attitudes. However, there was a significant difference in belief in meritocracy between the qualitative attributions for academic disparities, $F(3,448) = 3.606, p = .013$. Specifically, an LSD test of multiple comparisons showed participants who cited individual/innate differences had higher endorsement of meritocracy compared to participants who provided responses related to disparity in resources ($p = .011, 95\% CI = [.145, 1.130]$), and broader structural attributions ($p = .008, 95\% CI = [.236, 1.592]$). There were no differences in endorsement of meritocracy between participants who provided answers citing resource disparities and broader structural reasons ($p = .278, 95\% CI = [-.224, .778]$). Furthermore, there were no differences in SES and subjective socioeconomic status in reasoning about structural inequality.

Subsequently, participants were asked an open-ended question of how Darius could improve his grades. In stark contrast with the previous response which provided an overwhelming number of structural attributions to inequalities, 80.8% of participants

provided individualistic solutions to resolve the gap in academic achievement. Specifically, 42.6% of students (213 out of 500) simply stated that “Darius needs to study harder,” or “Darius needs to study longer.” An additional 38.2% mentioned that Darius needs to exert individual effort to find relevant resources that can improve his grades. Such answers acknowledged the structural shortcomings in Darius’ environment, but also suggested that Darius needs to put in individual effort to overcome these limitations. For instance, participants explained that “Darius needs to go to a public library to study with more resources,” or “Darius can improve his grade by hiring a tutor.” Although a smaller fraction, 16.6% of students provided a structural explanation which encompassed the broader societal problems at play (83 out of 500). For instance, some students explained “More funding needs to be put into his (Darius) school system,” pointing out the monetary divide between the two schools. Other students explained that Darius should ‘transfer schools,’ implying the limited solutions one could do at an individual level.

Subsequently, we investigated if participants who provided individual solutions versus structural solutions varied in their levels of SDO, BMI, BIJW, and racial attitudes. A one-way ANOVA was conducted with the qualitative measure of solutions for academic disparities as the predictor and SDO, BMI, BIJW, and racial attitudes as the outcome variable for the four separate models. Results revealed there were individual differences in SDO, $F(2,478) = 3.142, p = .044$, BIJW, $F(2,478) = 3.240, p = .040$, racial attitudes, $F(2,416) = 4.131, p = .017$ and BMI, $F(2,478) = 4.891, p = .008$, in how Darius could improve his grades. Specifically, and LSD test of multiple comparisons showed that participants who provided individual attributions had higher endorsement of SDO compared to participants who provided individual effort responses, $p = .013, 95\% CI =$

[.053, .451]. Participants who provided individual attributions also had higher endorsement of BIJW compared to participants who provided structural attributions, $p = .011$, 95% $CI = [.068, .536]$. Furthermore, participants who provided individual attributions had less egalitarian racial attitudes compared to participants who provided individual effort responses, $p = .008$, 95% $CI = [-.240, -.037]$, and structural attributions, $p = .047$, 95% $CI = [-.264, -.002]$. Lastly, compared to participants who endorsed structural attributions, participants who endorsed individual attributions, $p = .002$, 95% $CI = [.200, .877]$, and individual effort, $p = .035$, 95% $CI = [.026, .713]$, had higher endorsement of meritocratic beliefs. There were no other differences in individual differences based on qualitative responses on how Darius could improve his grades.

Individual Differences

We next tested whether individual differences in (a) endorsement of social dominance orientation (SDO), (b) belief in meritocracy, (c) belief in a just world, and (d) racial attitudes predicted participants' quantitative structural attributions citing resource disparities and resource allocation. Specifically, we utilized a series of hierarchical linear regression models, controlling for their family's socioeconomic status (SES), gender, and race (in step one). To tease apart any overlap in constructs, each individual difference variable was examined in a separate model first; followed by an omnibus test of all variables.

Individual Differences and Structural Attributions

As can be seen in Table 4, the first step which included the control variables of SES, gender, and race, was not significant in predicting structural attributions, $F(3, 408) = 2.120$, $p = .097$. $R^2 = .015$. When SDO was included in the second step, $F(4, 408) =$

2.592, $p = .036$, $R^2 = .025$, results indicated that SDO was a significant predictor of structural attributions ($\beta = -.098$, $p = .047$). Specifically, as participants were more strongly oriented toward social dominance, they were less likely to endorse structural attributions as the reason for the grade disparity. When belief in meritocracy was included in the second step, $F(4, 408) = 6.170$, $p < .001$, $R^2 = .058$, results indicated that belief in meritocracy was a significant predictor of structural attributions ($\beta = -.214$, $p < .001$). Specifically, as participants more strongly believed in meritocracy, they were less likely to endorse structural attributions as the reason for the grade disparity. When belief in a just world was included in the second step, $F(4, 408) = 1.639$, $p = .164$, $R^2 = .016$, results indicated that belief in a just world was not a significant predictor of structural attributions ($\beta = -.023$, $p = .648$). Finally, when racial attitudes were included in the second step, $F(4, 352) = 2.970$, $p = .020$, $R^2 = .033$, results indicated that racial attitudes were a moderately significant predictor of structural attributions ($\beta = .109$, $p = .051$). Specifically, as participants more strongly endorsed egalitarian racial attitudes, they were more likely to endorse structural attributions as the reason for the grade disparity.

To test whether the individual difference variables explained unique variance relative to one another, an omnibus hierarchical linear regression models was examined in which all four variables were entered in the second step, following the control variables in the first step. As can be seen in Table 5, the first step was significant: $F(3, 352) = 2.658$, $p = .048$, $R^2 = .022$. In the second step, only belief in meritocracy explained a significant amount of unique variance ($\beta = -.244$, $p < .001$).

Individual Differences and Resource Allocation

The first step in predicting resource allocation of basic needs, which included the control variables of SES, gender, and race, was not significant; neither was SDO, belief in meritocracy, belief in a just world, and racial attitudes. The allocation of basic needs items was not significantly predicted by any variables within the omnibus regression model either.

In contrast, when predicting resource allocation of luxury items, SDO significantly predicted allocation of iPads to the underfunded school, $F(4, 358) = 4.145, p = .003$, over and above the control variables. As can be seen in table 6, higher SDO predicted fewer iPads distributed to the underfunded school, $R^2 = .045, \beta = -.207, p = .003$. Similarly, racial attitudes ($F[4, 305] = 2.192, p = .070$) and belief in meritocracy ($F(4, 358) = 3.869, p = .004$) predicted iPad allocation to the underfunded school, over and above the control variables. Specifically, more egalitarian racial attitudes ($\beta = .160, p = .008$) and lower endorsement of meritocracy ($\beta = -.207, p < .001$) predicted more iPads distributed to the underfunded school. Belief in a just world did not predict iPad allocation ($F[4, 358] = .365, p = .834$).

In the omnibus model, over and above the control variables, SDO ($\beta = -.166, p = .013$) and belief in meritocracy ($\beta = -.222, p = .002$) significantly predicted the allocation of luxury items, ($F[7, 305] = 3.833, p < .001, R^2 = .083$). Specifically, as can be seen in Table 7, as participants were more strongly oriented toward social dominance and more strongly endorsed meritocracy, they allocated fewer iPads to the underfunded school.

Table 1: *Intercorrelations Among Variables*

Variables	1	2	3	4	5	6	7	8	9
1. SES	-								
2. Gender	.012	-							
3. Race/Ethnicity	.345	.029	-						
4. Belief in Meritocracy	.099	-.208	.174	-					
5. Race Attitudes	-.100	.278	-.027	-.608	-				
6. Belief in a Just World	.174	-.115	.165	.373	-.363	-			
7. SDO	.067	-.078	.027	.417	-.541	.302	-		
8. Pencils/Notebooks	.089	-.034	.126	-.048	.076	-.057	-.073	-	
9. iPads	.063	-.023	.018	-.155	.117	-.007	-.172	.527	-
10. Structural Attribution	.031	.061	.094	-.223	.177	-.043	-.114	.227	.153

Notes: All bolded correlations are significant at $p < .05$.

Table 2: *Table of Means: Endorsement of Different Ideologies*

Participant Race	SDO	BMI	BIJW	FIRE
Black	1.77 (.95)	4.19 (.90)	3.61 (.40)	2.65 (1.03)
White	1.83 (1.03)	4.54 (.86)	3.56 (.48)	3.20 (3.09)

Notes: Numbers represent means (standard deviations). The social dominance orientation (SDO), belief in meritocracy (BMI), and belief in a just world (BIJW) scales range from 1 to 7, with higher numbers indicating stronger endorsement. The racial attitude scale (FIRE – Fear, Acknowledgement of Institutional Racism and Empathy) ranges from 1 to 4, with higher numbers indicating more egalitarian racial attitudes.

Table 3: *Table of Means: Resource Reallocation*

Participant Race	Pencils/Notebooks	iPads
Black	7.17 (1.74)	7.69 (1.68)
White	6.96 (7.05)	7.03 (2.10)

Notes: Numbers represent means (standard deviations) of the proportion of resources allocated to the underfunded school on a scale of 1 to 10.

Table 4: *Predicting Structural Attributions: Individual Models*

Variables	SES	Gender	Race	IDV	F_{model}	$R^2(\Delta F)$
Control Variables in Model 1	.025	.087	.075		2.120	.015 (2.12)
SDO in Model 2	.030	.078	.078	-.098*	2.592*	.025 (3.96*)
BMI in Model 2	.030	.041	.116	-.214*	6.170*	.058 (18.05*)
BIJW in Model 2	.028	.084	.078	-.023	1.639	.016 (.21)
FIRE in Model 2	.025	.084	.064	.109	2.970*	.033 (3.84*)

Notes: * $p < .05$; The table represents β s for individual two-level models with social dominance orientation (SDO), belief in meritocracy ideology (BMI), belief in a just world (BIJW), and racial attitudes (FIRE – Fear, Acknowledgement of Institutional Racism and Empathy). IDV stands for individual difference variables.

Table 5: Predicting Structural Attributions: Omnibus Model

Variables	Model 1	Model 2
SES	.014	.022
Gender	.096	.051
Race	.103	.131
SDO		-.051
BMI		-.244*
BIJW		.041
Racial Attitudes		-.049
F_{model}	2.658	3.839*
$R^2(\Delta F)$.014 (2.658)	.053 (4.641)*

* $p < .05$; values are β s.

Table 6: Predicting Luxury Item Resource Reallocation: Individual Models

Variables	SES	Gender	Race	IDV	F_{model}	$R^2(\Delta F)$
Control Variables in Model 1	.051	.006	-.008		.289	.002 (.29)
SDO in Model 2	.072	-.008	-.007	-.207*	4.145*	.042 (15.68*)
BMI in Model 2	.059	-.035	.034	-.207*	3.869*	.039 (14.58*)
BIJW in Model 2	.057	.002	-.003	-.042	.365	.002 (.594)
FIRE in Model 2	.058	-.030	.053	.160*	2.192	.023 (7.14*)

Notes: * $p < .05$; The table represents β s for individual two-level models with social dominance orientation (SDO), belief in meritocracy ideology (BMI), belief in a just world (BIJW), and racial attitudes (FIRE – Fear, Acknowledgement of Institutional Racism and Empathy). IDV stands for individual difference variables.

Table 7: Predicting Luxury Item Resource Reallocation: Omnibus Model

Variables	Model 1	Model 2
SES	.038	.068
Gender	.016	-.037
Race	.050	.066
SDO		-.166*
BMI		-.222*
BIJW		.045
Racial Attitudes		-.045
F_{model}	.532	3.833*
$R^2(\Delta F)$.005 (.532)	.077 (6.280)*

* $p < .05$; values are β s.

CHAPTER 4. DISCUSSION

The current study examined if and when individuals might perceive structural inequalities rather than individual reasons as the explanation for disparities in academic achievement. While it was hypothesized that the type of comparisons participants were presented with (intergroup versus intragroup), and how the questions were framed (to focus on the individual versus the group), would lead to different attributions for disparities in academic achievement, the results indicated that the type of information and framing was unrelated to participants' attributions.

Instead, when asked to explain the disparity between the two students' grades, regardless of the specifics of the vignettes or the race of the participants, quantitative results showed that people endorsed structural attributions more than individual attributions. While late adolescents endorsed structural attributions in general, qualitative responses revealed that the majority of those attributions focused on the specifics of the actual schools in the vignettes (e.g., the well-funded schools' better library), whereas fewer people made broader statements about societal inequalities across school districts. These results align with extant research that explains that the majority of youth by early adolescence are able to perceive structural discrimination (Brown, 2017).

When asked about solutions to the academic disparities, the responses were more complex, and at times, contradictory. Although individuals who more strongly endorsed structural attributions allocated more resources to the underfunded school in general, participants distributed more resources to the underfunded school when resources went to basic needs, such as pencils, compared go luxury items, such as iPads. These results align

with previous findings where children distributed basic needs items based on concerns for others welfare (Rizzo et al., 2015).

Further, even though most participants referenced structural reasons as the *cause* of the disparities, only 17% of participants suggested a structural *solution* to the disparities. Instead, more than 80% of participants provided an individual-level solution. Many responses reflected the notion of the Protestant work ethic, citing Darius needs to study “harder” or “longer.” Others acknowledged the existence of structural disparities but suggested that the underfunded individual should individually seek out resources to overcome these barriers. Ironically, some of those individual efforts required additional funding, such as “hiring a tutor.” Fewer than one in five participants suggested a structural solution to the structural inequality.

Such findings suggest structural understanding of inequalities is integral to reparative justice for structural inequalities as students who strongly endorsed structural attributions generally distributed more resources to the underfunded school. Future studies should investigate factors that facilitate attitudes to provide structural-level solutions to inequalities as opposed to individual-level solutions such as growth mindset, social solidarity and restorative justice (Dweck, 2015; Thelen, 2012; Olson, 2020; Teasley, 2014). Additionally, studies should research the cognitive divide which leads to the chasm between perceptions of structural inequalities and remediation strategies for these disparities.

It was also hypothesized that participants with higher endorsement of SDO, belief in meritocracy, belief in a just world, and racial attitudes would make fewer structural attributions than other individuals. This hypothesis was partially supported as quantitative

results showed SDO, belief in meritocracy, and racial attitudes (with the exclusion of belief in a just world) were all significant predictors of structural attributions, over and above the control variables (SES, gender, and race). However, when all variables were examined simultaneously, only a belief in meritocracy explained a significant amount of unique variance. Such findings suggest that, although variables such as SDO (Richeson et al., 2021) and racial attitudes are related to making structural attributions (Toporek et al., 2005), belief in meritocracy stands alone in how it relates to structural attributions.

In a similar vein, mixed method results also suggest that youth who reasoned the academic achievement gap stemming from individual/innate differences had higher endorsement for meritocratic beliefs, whereas there were no significant differences in SDO, BIJW, and racial attitudes. In contrast, late adolescents who provided individual level solutions on how Darius could improve his grades (e.g., Darius should work harder) had higher endorsement of SDO, BMI, and anti-egalitarian racial attitudes.

The over salience of meritocracy in the quantitative and mixed method results may be due to its socially acceptable nature, as it aligns with the United States' Protestant Work Ethic that professes hard work is an admirable trait. In contrast SDO, BIJW, and racial attitudes display more socially condemned traits such as endorsement for strict hierarchy and racial bias. This may be the reason why participants do not overtly reveal these tendencies when assessing inequalities, but when they can justifiably and inadvertently blame the individual for their shortcomings.

Additionally, whereas SDO, belief in meritocracy, belief in a just world, and racial attitudes did not predict basic needs allocation to the underfunded school, SDO and belief in meritocracy predicted a significant amount of unique variance of luxury item

allocation. Such findings suggest little variation in individuals' assessment of how basic needs items should be allocated. Across individuals, there was an overall pattern of ensuring the underfunded school had plenty of pencils and paper. The variation emerged in how people allocated luxury items, as individuals who endorsed social hierarchies and believed in the myth of meritocracy gave fewer luxury items to the underfunded school. These findings correspond to previous findings where participants distributed luxury items based on merit (Rizzo et al., 2016).

Future studies should investigate ways to attenuate meritocratic beliefs to facilitate structural attributions to inequalities, such as imparting Critical Race Theory and placing emphasis on social solidarity (Delgado, 2000; Durkheim, 1893). Additionally, studies should unravel the unique ways meritocracy occludes structural attributions, over and above SDO and racial attitudes, such as individual agency, social desirability effects, and internal norm theory (Jellison & Green, 1981; Pansu et al., 2008).

As with all research, there are important limitations to the current study. The study was conducted in a predominantly White university in the Southeast. As such, although we tried to oversample Black participants, it was still a significantly smaller proportion than White participants. Hence, the aforementioned findings may have led to unequal variances between samples. Additionally, the current study utilized single-item measures to gauge structural attributions, which may limit the study's content validity. Lastly, the study highlighted funding differences, so we may have overestimated how often people make structural attributions.

Despite these limitations, it is integral to understand the perceptions of structural inequalities in later adolescence as it is when individuals start voting and have an effect on public policy. To understand these perceptions, the study conveyed the inequalities to its participants using pictures of real schools and their differences in resources, instead of delineating the inequalities verbatim. Hence, the study employed a more ecologically valid design by replicating how people construe and understand inequalities in real life. By utilizing qualitative data, this provides us insight to more natural responses and solutions to such situations, as opposed to using questionnaires. Furthermore, the present mixed methods study collected a large sample of 500 participants, which provides a detailed and nuanced understanding of late adolescents' understanding of structural inequalities. Ultimately, the study enlightens us about the inconsistency between structural explanations for inequalities and providing structural solutions, and the role of individual predispositions and its effect on structural attributions.

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VITA

EDUCATION

University of Kentucky	2020 – 2023
• Masters of Science: Developmental, Social, & Health Psychology	
• Allied Area: Statistics	
Purdue University at West Lafayette, IN	2016 – 2020
• Bachelor of Science: Psychological Sciences	
• Minor: Art History	
• Graduated <i>summa cum laude</i> and with honors	

GRANTS, HONORS & SCHOLARSHIPS

Awarded

University of Kentucky Travel Grant (\$630)	2023
Psychology Graduate Summer Fellowship (\$3000)	2022
University of Kentucky Travel Grant (\$480)	2022
Psychology Graduate Summer Fellowship (\$3000)	2021
Psychology Graduate Fellowship (\$22,000)	2020-2023
University of Chicago Social Sciences Merit Scholarship (<i>did not accept</i>)	2020
Psi Chi Leadership Award	2019
Psi Chi	2018
Senior Night Award-Essay Prize	2018
Alpha Lambda Delta Phi Eta Sigma member	2016
Society of Collegiate Leadership and Achievement	2016
Dean's List	2016 – 2020
Semester Honors	2016 - 2020
Summer Start Scholarship (\$1000)	2016

PUBLICATIONS

1. Brown, C. S., **Kahng, S.**, Tam, M. J., & Midkiff, J. T. (2022). Latinx parents' perception of discrimination and ethnic/racial socialization predict their elementary school children's perceptions of discrimination. *Journal of Child and Family Studies*, 31(6), 1645-1655.

MANUSCRIPTS UNDER REVIEW

1. Brown, C.S., Biefeld, S.D., & **Kahng, S.** (2023). Immigrant children's perceptions of anti-immigrant attitudes within the neighborhood context.
2. Sterling, H.M., Kim, T., Joy, E., **Kahng, S.**, & Allan, B.A. (2022). Perceived overqualification and well-being: An experiment with therapists.

MANUSCRIPTS UNDER PREPARATION

1. Brown, C.S., **Kahng, S.**, Vincent, N. Understanding the Relationship Between Interactions with Diverse Others and Sense of Belonging on a College Campus. (Writing)
2. **Kahng, S.**, & Brown, C.S. Seeing the System vs Seeing the Individual: How Contextual Information and Framing Facilitate Perceptions of Structural Inequalities. (Writing)
3. Brown, C.S., & **Kahng, S.** Zorks & Dods: Elementary Children's Perceptions and Explanations of Structural Discrimination Facing Immigrants. (Writing)
4. **Kahng, S.**, Buford, K., McAndrew, M., & Ma, X. Double Jeopardy in the G8 Countries: Examination of Socially Disadvantaged Students in Socially Disadvantaged Schools. (Data Analysis)
5. Hunt, J., Legrand, A., & **Kahng, S.** Jury Decision Making in Court vs Experimental Studies: A Metanalysis. (Data Analysis)
6. Usher, E., Brown, C.S., & **Kahng, S.** How Students Think and Strategically Present Experiences, Beliefs and Values About Diversity. (Data Collection)

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