

N. Keita Christophe., PHD. Protecting Minoritized Youth Against Discrimination: The Concurrent Impact of Ethnic-racial Identity and Culturally-congruent Shift-&-persist Coping (2021)

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Discrimination is a largely uncontrollable stressor that has a negative impact on the psychological health and wellbeing of racially and ethnically minoritized youth. From a strengths-based perspective, this integrative dissertation presents a testable conceptual model of the general and culturally-informed coping methods that, in addition to other cultural assets such as ethnic-racial identity, may help promote resilience in minoritized youth and reduce the negative psychosocial impact of discrimination. Evidence for aspects of this conceptual model is demonstrated through three quantitative studies of minoritized adolescents and emerging adults. Implications for the study of culturally-informed coping and resilience in the face of uncontrollable racialized stressors are discussed.

PROTECTING MINORITIZED YOUTH AGAINST DISCRIMINATION: THE  
CONCURRENT IMPACT OF ETHNIC-RACIAL IDENTITY AND CULTURALLY  
CONGRUENT SHIFT-&-PERSIST COPING

by

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## DEDICATION

*Dedicated to my mom, Jody, my dad, Michel, and my grandparents, Wilma and Larry. You all have always pushed me to higher heights than I ever could have reached on my own.*

APPROVAL PAGE

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## CHAPTER I: INTEGRATED INTRODUCTION

Ethnic-racial discrimination, or “dominant racial group members’ actions that have differential and negative effects on subordinate ethnic-racial groups” (Seaton, Gee, Neblett, & Spanierman, 2018, p.768) has a pervasive and negative impact on minoritized youth in the United States.

Among adults in the United States, a recent nationally-representative survey conducted by the Pew Research Center showed that 76% of Blacks, 76% of Asians, and 58% of Latinx’s reported experiencing discrimination because of their race/ethnicity (Horowitz et al., 2019). Early narrative reviews on the impact of discrimination across both survey-based and lab-based studies have found links between discrimination and a wide range of physical health outcomes, including physiological stress reactivity, hypertension, chronic health conditions, and global ratings of health, as well as mental health outcomes such as distress, anxiety, and lower life satisfaction across the lifespan (Benner et al., 2018; Williams & Mohammed, 2009).

These negative ramifications have been supported by recent meta-analytic studies. In a meta-analysis of 293 studies across the lifespan (15.6% of studies sampling youth under 18), ethnic-racial discrimination was related to more ‘negative physical health’ ( $r = -.09$ ,  $k = 50$ ), more ‘negative mental health’ ( $r = -.23$ ,  $k = 227$ ), and less positive mental health ( $r = -.12$ ,  $k = 113$ ; Paradies et al., 2015) regardless of age. Additionally, in their meta-analysis of 214 studies with youth, Benner and colleagues (2018) found wide-reaching impacts of discrimination with the strongest associations occurring between discrimination and depression ( $r = .26$ ,  $k = 87$ ).

Taken together, this body of research has established ethnic-racial discrimination as a pernicious stressor that has a myriad of negative impacts on minority youth functioning, particularly in the domain of negative mental health (Benner, 2017). It is therefore paramount for research to explore the resilience factors and cultural assets that may protect minoritized youth against the negative effects of ethnic-racial discrimination to best support marginalized populations (Seaton et al., 2018). This integrative dissertation (1) introduces a new conceptual model of how youth from marginalized groups use culturally congruent shift-&-persist strategies that decrease risk

for negative health and mental outcomes associated with ethnic-racial discrimination and (2) presents the results from three empirical papers testing this model.

Shift-&-persist (S&P) is a coping paradigm that has been theorized to help marginalized (i.e., low-SES and minority) youth cope with uncontrollable stressors (E. Chen & Miller, 2012). As the name implies, S&P involves two processes, shifting and persisting - both of which are crucial for effectively demonstrating resilience in the face of uncontrollable stress (E. Chen, 2012). While the component parts of shift and persist may each be associated with positive outcomes under some context, their use in combination has been theorized to be necessary for positive adaptation, as both components are needed given the nature of uncontrollable stress (E. Chen, 2012). Taking into account that, with S&P, the whole is theorized to be greater than the sum of its two parts, shifting involves acceptance and cognitive reappraisal of stressors as uncontrollable and not amenable to direct confrontation, while persisting involves enduring adversity, holding a sense of meaning and purpose in life, and espousing optimism despite the presence of uncontrollable stress (E. Chen, 2012). This theoretical claim has been empirically supported by several studies, mainly in the domain of physical health outcomes, showing that S&P coping protects against several different negative outcomes for low-SES youth, who have little control over their socioeconomic or social position, but not for high-SES youth who are likely to have more agency and resources at the individual and family level to exert primary control over their life stressors (Kallem et al., 2013). Thus, S&P shows promise as a compilation of strategies that mitigate the negative impact of uncontrollable stressors like ethnic-racial discrimination.

Yet, S&P theory does not explicitly consider the role of race and ethnicity in its larger coping paradigm, which may be critical to understanding how it protects against ethnic-racial discrimination. In particular, ethnic-racial identity (ERI) is a multidimensional construct that generally refers to the meaning and importance one's ethnic-racial group membership has in one's life and self-concept (Sellers et al., 1998), and has been theorized to play a central role in understanding how youth from marginalized communities both interpret and respond to ethnic-racial discrimination (Hughes et al., 2016). Despite promising bivariate associations with psychological outcomes (Rivas-Drake et al., 2014), ERI has not been sufficient in promoting

psychological resilience among minoritized youth exposed to ethnic-racial discrimination (Yip et al., 2019). Other factors have also been suggestive of serving a protective role in minoritized populations in the US when facing discrimination (e.g., critical civic engagement; Hope & Spencer, 2017) and in promoting well-being through the provision of meaning and connection (e.g., religiosity and familial cultural values; Sumner et al., 2018). While all of these lines of research have established potential beliefs, values, and practices that may serve to offset the negative ramifications of discrimination, no past work to our knowledge has integrated these into a larger coping framework to suggest how these may operate in tandem to help support the resilience in marginalized youth and their communities.

## GOALS

In this integrative dissertation, I attempt to establish S&P as an important complement to ERI in helping promote psychosocial resilience among minoritized youth exposed to ethnic-racial discrimination. By highlighting the need for this type of work, reviewing previously disparate bodies of scholarly work, and presenting our conceptual model, I highlight the different ways in which minoritized youth may use coping strategies that embody the principles of S&P in coping with discrimination. Further, I directly follow recommendations stemming from this new model and attempt to validate various parts of this testable model by illustrating results from three separate empirical studies.

## MOVING BEYOND ERI

As previously stated, despite its bivariate associations with fewer negative outcomes (e.g., depressive symptoms, externalizing behaviors) and greater positive outcomes (e.g., self-esteem; Rivas-Drake et al., 2014), the literature on how ERI impacts youth outcomes in the face of discrimination is mixed. Findings on the protective impact of ERI on outcomes have varied as a function of measurement, ethnic-racial group, age, and, importantly, ERI dimension, with higher levels of dimensions such as identity exploration amplifying the impact of discrimination, while

commitment to one's ethnic-racial group has been more commonly found to be protective (Yip, 2018). To add to these mixed findings, racial centrality, or how important one's race/ethnicity is to one's self-concept, has been found to be both protective and serve to increase vulnerability to discrimination, leading Tiffany Yip to question whether ERI functions as a type of double-edged sword – sometimes protective but sometimes harmful (2018). A subsequent meta-analysis of 59 studies conducted by Yip and colleagues (2019) implied that, across outcomes and dimensions of ERI there was no evidence that ERI served as a protective buffer for positive mental health ( $k = 20$ ) nor negative mental health outcomes ( $k = 32$ ).

Because ERI has not been shown to protect against poor psychological outcomes nor promote positive psychological adjustment at the highest levels of discrimination, additional factors may be needed to protect the mental health of minoritized youth. It is clear from past literature that ERI intersects with many other culturally embedded protective factors and likely does not operate in isolation and likely informs coping processes (e.g., Neblett et al., 2012). There is currently, however, a dearth of research testing how minoritized youth cope with racialized stressors, as quantitative inquiry has not caught up with the strong logical and theoretical assertions that minoritized youth are also employing reactive and stable coping methods other than ERI in response to racialized stress (Spencer, 2007).

## COPING AMONG MINORITIZED YOUTH

Although there are many distinctions between the types of coping styles, coping can generally be defined as the “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus & Folkman, 1984, p.141). There are many ways of conceptualizing coping (see Stanisławski, 2019 for review of overlap between these conceptualizations), but a useful conceptualization defines coping along the axis of control. Under this model, primary control involves the attempt to change one's stressful environment, while secondary control involves an individual's attempt to accept (Morling & Evered, 2006) and adapt to their stressful environment (Lazarus & Folkman, 1984).



## Limitations of the Wider Coping Literature

In their review on the state of the emotion regulation and coping literatures, Compas and colleagues (2017) state that,

relatively little attention has been given to sample characteristics with regard to important sources of diversity (e.g., race, ethnicity, socioeconomic status)...it is possible that these [coping] processes differ in their associations with symptoms of psychopathology in children and adolescents faced with greater cumulative sociodemographic risk (p. 976).

This claim has been frequently made and bears repeating; the coping literature has not effectively considered crucial differences due to race or SES, which likely serve as proxies themselves for numerous factors (e.g., cultural values/beliefs, access to quality food/education/resources, neighborhood characteristics, etc.) that have a critical impact of minority youth socioemotional development (Garcia Coll et al., 1996). This has only been further complicated by the numerous definitions and operationalizations of different coping strategies such as approach/avoidance coping and engagement/disengagement coping, among others (Aldridge & Roesch, 2008). Even theoretical attempts to integrate different coping factors into key, theoretically meaningful constructs, such as the coping circumplex model (Stanisławski, 2019) are unable to integrate key dimensions of coping such as seeking social support, exercising self-control, using acceptance, and turning to religion. These often-overlooked ways of coping are typically those that are more aligned with a marginalized individual's cultural beliefs and identities (e.g., religious/spiritually-based coping, critical civic engagement, etc.) and may be well-suited to the uncontrollability of race-based stressors – therefore warranting increased attention. Indeed, these manners of coping that both a fit with the demands of one's stressful environment (Lazarus & Folkman, 1984) and are congruent with groups' cultures (Heppner et al., 2014) have been proposed to be more effective than generic manners of coping tailored to neither culture nor context.

## SHIFT-&-PERSIST

A small but growing body of work has begun to establish S&P as an effective coping strategy that is associated with numerous desirable outcomes in youth, particularly in the domain of health. S&P has been proposed to lead to adaptive down-regulation of the stress response system in the context of acute stress, better parasympathetic nervous system regulation, increased availability of oxytocin, and less engagement in maladaptive health behaviors (E. Chen, 2012; E. Chen & Miller, 2012). Empirical work has found support for S&P's impact on youths' physiology (E. Chen et al., 2015; L. Chen et al., 2019).

### Empirical Origins of S&P

In the first empirical article on the S&P construct, Chen and colleagues (2011) attempted to examine whether the S&P coping strategy conferred resilience for low SES children suffering from asthma, as low SES is, itself, a risk for asthma and worse symptomatology. In this sample of 121 youth formally diagnosed with asthma ( $M_{age} = 12.61$ ,  $SD = 2.63$ , 39% non-white) significant interactions between S&P and multiple measures of asthma-related impairment revealed that S&P was longitudinally associated with better asthma profiles (lower symptomatology across outcomes) for low-SES youth but not high-SES youth (E. Chen et al., 2011). This first study provided preliminary evidence for the efficacy of the S&P construct, as S&P provided concurrent protection and protection across time against the negative consequences of asthma for low-SES youth and set the stage for subsequent examinations of S&P's efficacy across a number of other health outcomes.

Subsequent empirical work has established S&P as a strategy that is effective for other important health outcomes across the lifespan. For example, using a national sample of 1,207 U.S adults from the Midlife in the United States (MIDUS-II) study (31.4% non-white) Chen and colleagues (2012) found that adults who were of low SES in childhood had the lowest levels of allostatic load in midlife when S&P was high (E. Chen et al., 2012). Similar to prior work, this protective effect did not occur for adults who were of higher SES growing up. Similarly, diverse sample (47.8% Latinx, 38.3% Black) of 1,523 middle school students ( $M_{age} = 12.4$ ,  $SD = 1.3$ ) S&P has

also been shown to protect low-SES youth from greater body mass index (BMI), another risk commonly faced by impoverished and minoritized youth (Kallem et al., 2013). In this study, S&P was hypothesized to reduce physiological and sympathetic nervous system reactivity to stress, both of which have been associated with insulin resistance, metabolic dysregulation, and gain in BMI. Among low-SES youth, S&P has also been cross-sectionally associated with less low-grade inflammation and greater anti-inflammatory sensitivity (E. Chen et al., 2015) and longitudinally associated with higher levels of cortisol when awakening, an adaptive cortisol response that helps one start the day alert, as well as a steeper, more adaptive decline in cortisol throughout the day (L. Chen et al., 2019).

In summary, this small body of health-focused work has established S&P as an adaptive coping strategy by which low-SES youth, many of whom are also members of minoritized groups, may be protected against numerous undesirable health outcomes such as obesity, asthma-related impairment, chronic inflammation, and slower declines in cortisol throughout the day. These studies have begun to establish E. Chen and Miller's (2012) assertion that S&P is effective in promoting health among youth exposed to the uncontrollable stressor of poverty, but have not answered another question posed by the authors: are S&P strategies effective for other stressors and other groups (e.g., racial/ethnic minority youth who face uncontrollable stressors such as ethnic-racial discrimination)?

### Extending the Reach of S&P Across Stressors

Empirical work has just begun to examine how the construct may function across uncontrollable stressor, not just across outcome. For instance, although they only examined the impact of the 'shift' component of shift-&-persist, Bao and colleagues (2016) attempted to examine the impact of economically-based discrimination, or peer discrimination due to one's family's economic struggles, on sleep among a large sample of 997 rural Chinese students ( $M_{age} = 15.04$ ,  $SD = 1.69$ ) instead of looking just at SES. In this sample, a moderated mediation was found where neither family economic problems nor youth economic discrimination were associated with sleep problems when youth were high in shift (Bao et al., 2016). This finding, which held across gender and age, demonstrates the utility of shifting in response to other types of uncontrollable

stress – in this case economically-based discrimination from peers. Given empirical and conceptual work asserting that the combination of shift and persist is likely to lead to the greatest levels of protection against uncontrollable stress (E. Chen, 2012; E. Chen et al., 2011; E. Chen & Miller, 2012; L. Chen et al., 2019), it is possible that the observed protective effect could have been stronger if both S&P components were assessed.

In continuing to test the effects of S&P across types of uncontrollable stress, Lam and colleagues (2018) utilized a daily diary methodology to examine how S&P protects youth exposed to unfair treatment against negative asthma-related outcomes, finding that S&P protects against additional daily asthma symptoms and leads to better asthma quality of life (QOL) for youth of low social status. Additionally, and especially novel, the authors' found that youth exposed to high levels of unfair treatment, measured using one of the most popular scales of discrimination, the Everyday Discrimination Scale (Williams et al., 1997), had higher asthma QOL and greater asthma control when they endorsed high levels of S&P (Lam et al., 2018). Given the diverse nature of this sample of 308 youth (50% non-white;  $M_{age} = 13$ ,  $SD = 2.51$ ), it is likely that, for some, unfair treatment may have been attributed to race/ethnicity, meaning that this 'unfair treatment' may also include instances of perceived ethnic-racial discrimination. Therefore, this novel finding provides initial evidence that S&P may have utility in helping youth cope with uncontrollable stressors such as ethnic-racial discrimination.

### Coping & Culture: S&P in Response to Racialized Stressors

Building upon the work of Lam and colleagues (2018) and based on the assertion by Chen and Miller (2012) that S&P may operate similar among minoritized youth exposed to discrimination, recent scholarship has attempted to explicitly examine how S&P coping operates in the context of ethnic-racial discrimination and examining whether S&P may positively impact psychological health in addition to physical health. In a study examining how S&P operates in the face of both economic hardship and peer discrimination in predicting depressive symptoms among a sample of 175 Latinx youth ( $M_{age} = 12.9$ , range = 10-15 years), economically disadvantaged youth high in S&P were protected against greater depressive symptomatology (Christophe et al., 2019).

When examining S&P as a buffer of the relation between discrimination and depressive symptoms, and accounting for the importance of ERI in interpreting and managing racialized stressors (Spencer, 2007), a significant 3-way interaction indicated that moderate to high levels of S&P coping fully protects against high levels of discrimination for low-ERI youth (Christophe et al., 2019). By contrast, S&P was not protective for Latinx youth high in ERI facing high levels of peer discrimination. Ultimately, this study provides initial cross-sectional evidence that S&P coping may function as a compensatory factor when Latinx youth face high levels of discrimination, but do not have particularly positive feelings nor place subjective importance on their ethnic-racial group membership.

Building on this novel finding, Stein and colleagues (under review) utilized data from the California Families Project (CFP), a longitudinal study of 674 Mexican-origin youth followed from 5<sup>th</sup> grade into emerging adulthood. (72% 2<sup>nd</sup> or 3<sup>rd</sup> generation, 1<sup>st</sup> generation time in the U.S. = 11.57 years at Wave 1, *SD* = 2.57) to examine how discrimination, S&P, and ERI influence trajectories of depressive symptoms from 9<sup>th</sup> to 12<sup>th</sup> grade (Waves 5-8). Using growth curve modeling to examine the impacts of peer discrimination, results mirrored those found in past cross-sectional work (Christophe et al., 2019), with 3-way interactions between discrimination, racial/ethnic pride, and S&P predicting depressive symptoms in 9<sup>th</sup> grade as well as the slope of depressive symptoms over time. While trajectories generally declined over time, Mexican-origin youth who had relatively low racial/ethnic pride but endorsed high levels of S&P were protected against high levels of discrimination, reporting lower, still-descending trajectories of depressive symptoms similar to youth who experienced low levels of discrimination (Stein et al., under review). This study provided increasing evidence that S&P may serve as an important protective buffer for the subset of youth not protected by a strong ERI.

### Next Steps for S&P

Thus far S&P been shown to be effective across health outcomes for individuals facing the uncontrollable stressor of pervasive poverty (E. Chen et al., 2011; L. Chen et al., 2019), and in the context of unfair treatment (Lam et al., 2018). When considering the impact of ethnic-racial

discrimination on depressive symptoms, however, S&P has not worked synergistically as predicted but has instead protected youth with relatively weak ERI's (Christophe et al., 2019; Stein et al., under review). High-ERI youth, therefore, have not been protected against the negative impact of discrimination despite high endorsement of S&P. The question remains, therefore, what other culturally-congruent coping strategies are needed for minoritized youth for whom ERI is an important part of their self-concept? It is possible that shifting and persisting may still be beneficial for high-ERI youth, but it is possible that these youth need to shift and persist in slightly different ways than their low-ERI peers to be protected against discrimination. How may these culturally-congruent coping strategies look at a behavioral level, and how may they embody the S&P paradigm of coping?

#### Integration of Culture Into the Study of Coping and Positive Development in Minoritized Youth

To combat the definitional limitations of the coping literature, and because our shared context of oppression and discrimination may necessitate the use of multiple culturally-relevant reactive coping strategies and stable coping responses, a more holistic understanding of cultural protective factors must be integrated into the study of resilience in youth. Heppner and colleagues (2014) have proposed a thorough conceptualization of how cultural factors should be integrated into the study of coping among minoritized groups. This paper highlights that these groups are often faced with unique, uncontrollable stressors (e.g., discrimination), and underscores that coping is highly contextual, with numerous cultural influences stemming from an individual, their family, and their community, as well as more macro-level influences such as the sociocultural/sociopolitical climate (Heppner et al., 2014). Key to their argument is Heppner and colleagues' (2014) explanation of coping that is congruent with, or appropriate within a specific cultural context namely for our purposes ethnic racial discrimination. Although these strategies are not necessarily specific to minoritized groups (e.g., spiritually-based coping), these culturally-congruent coping strategies reflect a "complex set of learned behaviors that [have] a shared meaning among members of a racial, ethnic, or cultural group" (p.92). These strategies' connection to or alignment with a groups' values, traditions and behaviors, and their use in

response to uncontrollable stressors such as poverty and discrimination is hypothesized to lead to better psychosocial and health outcomes for minoritized groups.

Shift-&-persist, particularly the act of persisting and finding meaning in life, has been theorized to be an especially important, adaptive response for marginalized youth. In their narrative review of meaning and purpose in life among marginalized adolescents, Sumner and colleagues (2018) highlight relations between meaning in life and a number of desired outcomes among youth, including fewer internalizing symptoms, higher self-esteem and greater life satisfaction. Purpose in life in the face of pernicious stressors such as ethnic-racial discrimination has also been shown to help youth access important sources of social support and meaning in and of themselves, whether that be through the family, a religious community, or a group committed to civic or political action (Sumner et al., 2018). Through acceptance and adaptive reappraisal of uncontrollable stress, as well as through the development meaning and purpose, shift and persist work in tandem and lead to positive adaptation among youth exposed to uncontrollable stressors.

In this way, S&P is a *culturally-congruent* coping strategy; although it is not a way of coping that comes directly out of a cultural group's history, traditions, and values, it is congruent in the sense that it is a coping style compatible with and well-positioned to effectively address the types of stressors commonly faced by minoritized youth as noted in the review above.

Critical civic engagement, spiritually-based coping, and the enactment of familial cultural values may be conceptualized as specific strategies that are culturally-informed, coming directly from the values and beliefs of minoritized groups. Additionally, these strategies may conceptually fall under the S&P umbrella by serving as culturally-informed behavioral manifestations, or reactive coping strategies (Spencer, 1997) that share bidirectional associations with the more stable, S&P coping style. If S&P and its subsequent behavioral coping strategies are adapted to the uncontrollable racialized stressors youth face and come from the values and traditions of their groups, the S&P paradigm of coping may have the potential to supplement other cultural protective factors such as ERI in helping promote more optimal functioning in minoritized youth exposed to ethnic-racial discrimination.

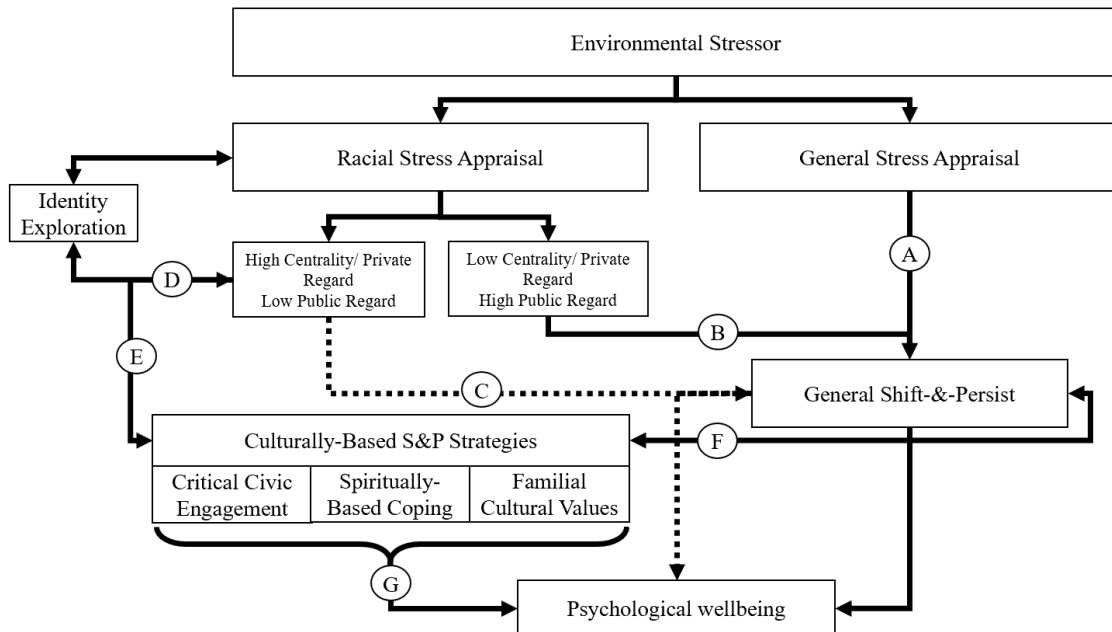
### Integrative Model

To advance understanding of the S&P paradigm of coping and to guide subsequent reviews of the previously proposed culturally-congruent coping strategies, we propose the following testable conceptual model to illustrate the ways in which minoritized youth may effectively cope with stressors (see Figure 1). We acknowledge the existence of other plausible and well-formulated models of coping with discrimination, chief among them Brondolo and colleagues' (2009) model that also takes into account the racial appraisal process and cultural assets such as ERI, as well as mainstream and culturally-informed coping behaviors. The intent of this model is not to compete with existing models, but rather to outline what coping strategies may need to come on-line in order for minoritized youth to cope with discrimination – all through the lens of S&P coping and provide a more discrete testable model that can guide future work. With this aim, our theoretical model is inspired by Clark and colleagues' (1999) model of the biopsychosocial effects of perceived racism and lays out a similar 'decision tree of factors that come on-line based on the racialized/non-racialized nature of the stressor. This model ties together previously disparate ERI, S&P, and culturally-based coping literatures, highlighting that, dependent on the racialized/non-racialized nature of the stressor and youths' level of ERI endorsement, multiple coping strategies may need to be enacted concurrently to best position youth to effectively cope with discrimination. Additionally, this empirically-testable model may serve as a foundation from which subsequent empirical inquiry may be based.

To briefly summarize the paths of this model, the S&P literature has demonstrated that S&P strategies have been sufficiently protective and have led to positive outcomes for youth (path A). When stress is appraised as racialized however, individual's ERI endorsement likely impacts the subsequent strategies that help them cope with this racialized stress (Spencer et al., 1997). Research examining S&P in response to discrimination among Latinx adolescents suggests that general S&P protects youth low in ERI, possibly because race/ethnicity does not have the same meaning and importance for these youth (path B). However, (dotted line; path C), high ERI has not shown to protect against discrimination effect on mental health outcomes (Yip et al., 2019), nor have high-ERI youth been protected by general S&P strategies. High ERI youth are both



more likely over time to identify stressors as attributable to ethnic-racial discrimination/inequality, subsequently exploring what their identity means to them following the discriminatory event (Branscombe et al., 1999), and notice more discrimination due to high ERI endorsement, further increasing the degree to which they identify with racial in-group members as a protective mechanism (Gonzales-Backen et al., 2018). These mechanisms are parts of a recursive cycle among high ERI youth where perceptions of discrimination both potentiate and are potentiated by identity exploration, and increased ERI endorsement (path D), ultimately leading high ERI youth to be particularly affected by ethnic-racial discrimination, as it targets a salient and core aspect of youths' self-concept (Yip, 2018). High ERI youth may also need to employ additional, culturally-based S&P strategies such as critical civic engagement, spiritually-based coping, and familial cultural values in order to successfully cope with discrimination (path E). Through their embodiment of shifting and persisting, these strategies fall under the S&P paradigm of coping and are, thus, related to general S&P (path F). The culturally-informed nature of these coping strategies, in combination with its exemplification of the tenets of S&P may allow these culturally-informed strategies to, along with general S&P, help protect minoritized youth against discrimination (path G). In the remainder of this dissertation, I provide support for this integrative model, with particular attention to path F, how these culturally-based strategies fall under the S&P paradigm of coping, and to path G, how these culturally-based strategies have, thus far, been related to psychological outcomes in minoritized youth.



*Note. Ineffective theoretical pathways are depicted using dashed lines.*

Figure 1. Conceptual model of coping with discrimination through the S&P paradigm of coping

In the 3 studies I present testing this model, I provide support for paths A & B using multiple linear regression (Study 1; Christophe et al., 2019), use higher-order factor analysis to affirm the existence of path F and describe a unitary factor that ties together general and culturally-based S&P strategies (Study 2; Christophe et al., under review). Finally, in empirical example 3 (Christophe & Stein, under review), I employ person-centered analyses to examine whether patterns of S&P strategy endorsement work better than others in protecting minoritized youth against discrimination.

## CRITICAL CIVIC ENGAGEMENT

Critical civic engagement can be defined as “a revolutionary act of self-preservation in direct response to broadly under-acknowledged conditions of sociopolitical inequality” (Hope & Spencer, 2017, p. 422). This definition stands in contrast to the definition of civic engagement given by the American Psychological Association stating that civic engagement is “individual

and collective actions designed to identify and address issues of public concern” (n.d.), and implies a more intense focus on disrupting the status quo in order to create equity and survive. Critical civic engagement, therefore, is narrower in scope, focusing less specifically on voting and performing civic duties but more on “a social response to the remnant of injustice and racial bias that have yet to be eradicated from our social milieu” (Hope & Spencer, 2017, p. 424). Due to differences in privilege and marginalization based on factors such as race and immigration status (Levine, 2008), civic engagement is often critical in nature by necessity for minoritized youth, as opposed to a more benign way of learning to engage in the larger political system. Indeed, among a nationally-representative sample of 12,240 15-year-olds, income inequality predicted greater civic engagement; this association was especially strong among low-SES and minoritized youth, where inequality is an especially strong catalyst fueling greater engagement (Godfrey & Cherng, 2016). Subsequent analysis of civically engaged attitudes and behaviors is, for this manuscript, best interpreted through the lens of *critical* civic engagement, an important but understudied subtype of civic engagement.

Critical civic engagement is a behavioral and attitudinal response to conditions of inequality that embodies central components of both S&P. Key to the concept of critical civic engagement is an understanding of systems of oppression meaning that “the structure of political, economic, and social institutions is centrally and causally related to personal circumstances and misfortunes at disproportionate rates for marginalized people” (Hope & Bañales, 2019). This helps individuals understand that they themselves are not to blame for their experiences of discrimination, systems of oppression are to blame. If one is to prevent oneself and other minoritized individuals from continuing to experience individual discrimination, critical civic engagement is one way to target the root cause of inequality. In this way, critical civic engagement requires *shift* – cognitive reappraisal and an acceptance that interpersonal racialized stress as stems from unjust systems, combined with *persist* – optimism and a positive view towards the future combined with committed civic action in an attempt to, over time, begin to change these systems of inequality. Shifting, but more importantly, persisting by coping with systems of inequality and actively trying to improve them both fuels and creates meaning and purpose in minoritized populations

(Bjornsen-Ramig & Kissinger, 2019). In this way, the action and function of critical civic engagement conceptually maps onto the core tenets of S&P coping.

### What is Critical Civic Engagement Predictive of?

While qualitative (Fernández et al., 2018; Ortega-Williams et al., 2020) and quantitative work (Klar & Kasser, 2009; Wray-Lake et al., 2019) has outlined direction associations between critical civic engagement and psychological wellbeing (see Anyiwo et al., 2020 broader discussion of the implications of sociopolitical action), a very limited number of quantitative studies have, to our knowledge, directly examined how critical civic engagement may moderate the associations between ethnic-racial discrimination and psychological outcomes – producing mixed findings thus far. For instance, Hope and colleagues (2018) found that microaggression and political activism were differentially predictive of mental health outcomes based on race in a sample of 504 Black and Latinx college students ( $M_{age} = 18.2, SD = .47$ ) followed across the first year of college. Among Black college students, microaggressions were more strongly related to anxiety and stress for those high in political activism. However, for Latinx students, greater political activism was negatively associated with stress and depression, even at high levels of microaggression, implying that political activism not only protects against negative outcomes (depression and stress) in contexts with high levels of discrimination, it promotes positive adaptation in these stressful environments (Hope et al., 2018). In a subsequent study of 232 Black college students ( $M_{age} = 19.7, SD = 2.87$ ) however, support was found for the moderating effect of activism beliefs (Watson-Singleton et al., 2020). Specifically, for Black youth who endorsed high levels of support for the Black Lives Matter movement, racial discrimination was not associated with depressive symptoms 6 months later (Watson-Singleton et al., 2020). Black Lives Matter participation did not moderate this association, calling into question whether the distinction between belief and actions accounts for the mixed findings among these two sole quantitative studies. Ultimately, literature linking civic engagement with improved mental health outcomes in minoritized youth facing discrimination is at a nascent stage, and more work is needed to establish that civic engagement and activism among youth is crucial in fostering

psychological wellbeing and a sense of purpose among students, particularly minoritized students (Bjornsen-Ramig & Kissinger, 2019).

### Summary

Critical civic engagement is a culturally-congruent coping mechanism that arises out of and is predicted by minoritized youths' experiences of ethnic-racial discrimination. Although there is a dearth of empirical work examining critical civic engagement as a coping strategy that may protect against the negative impact of discrimination, initial evidence exists for civic engagement's efficacy in generally promoting psychological well-being (Wray-Lake et al., 2019), along with lower levels of stress and depression for engaged Latinx college students experiencing microaggression (Hope et al., 2018). Conceptually, however, links between critical civic engagement and the S&P paradigm of coping are strong, and critical civic engagement is indeed conceptualized as an adaptive reactive coping strategy (Hope & Spencer, 2017; Spencer, 2007) that comes from and reinforces S&P, a stable coping response in the face of uncontrollable stress such as discrimination.

## SPIRITUALLY-BASED COPING

### Definition and Importance

Spiritually-based coping represents the ways in which individuals actively use religion and spirituality in specific stressful situations (Ano & Vasconcelles, 2005), including experiences of marginalization due to ethnic-racial discrimination. Spiritually-based/religious coping is, in this way, another culturally-congruent coping strategy that, while not specific to minoritized groups, "reflects a complex set of learned behaviors that has a shared meaning among members of a racial, ethnic, or cultural group" (Heppner et al., 2014, p. 92). This claim is evidenced by the inclusion of religiosity and spirituality in measures assessing the values and coping practices of minoritized groups. For example, religious values are included as one of six relevant subscales in capturing the cultural value endorsement of Mexican Americans on the Mexican American

Cultural Values Scale (MACVS; Knight et al., 2010). Similarly, spiritually-based coping was included as one of four key factors in the development of the Africultural Coping Systems Inventory, a measure of culturally-specific coping strategies employed by African Americans (Utsey et al., 2000). Generally, the importance and centrality of religion and spirituality across minoritized groups (Heppner et al., 2014) necessitates its inclusion when examining culturally-congruent coping styles that may help minoritized youth effectively cope with discrimination.

### Spiritually-Based Coping Under the S&P Paradigm

Like critical civic engagement, we assert that spiritually-based coping functions as an adaptive, reactive coping strategy that is both influenced by and reinforces S&P and fits well under the S&P paradigm of coping. Spiritually-based coping may help youth make sense of uncontrollable stressors such as poverty and ethnic-racial discrimination by contextualizing meaning and relative controllability of these stressors in the context of religious beliefs and one's faith/spiritual community. Functionally, this may manifest itself in potentially adaptive statements such as "everything happens for a reason", "everything is part of God's plan", etc. Understanding uncontrollable stress through a spiritual framework demonstrates an ability to *shift* away from blaming and from trying to exert primary control over a stressor one cannot directly or immediately change. This *shift* from attributing negative life events from individual blame-based explanations to the often unintelligible but presumably intentional workings of a higher power is thought to promote greater psychological well-being and higher self-esteem in the face of uncontrollable stress (Yonker et al., 2012).

Another method by which spiritually-based coping (and S&P) has been proposed to help foster resilience in youth is through a positive future orientation and the development of meaning in life, in other words *persist*. Future orientation, or believing that things will be better in the future, has been associated with a 75% lower likelihood of reporting poor mental health, less externalizing/risky behavior, and greater levels of school engagement among African American adolescents (So et al., 2016). Future orientation, which itself has been positively associated with religiosity and ERI, has also been shown to exert a positive influence on life satisfaction through

increased optimism, another key aspect of S&P's *persist*, among African American emerging adults (Utsey et al., 2008). In their review on meaning and purpose in life for youth facing marginalization, Sumner and colleagues (2018) stress youths' spiritual/religious community as a context that connects youth with social support through positive role models and peer relationships whilst helping youth develop meaning and purpose. The authors assert that "having regular opportunities to enact the shared values of one's religion, supported by members of the religious community, provides a structure in which purpose can influence actions, thoughts, and emotions" (Sumner et al., 2018, p. 746). This emphasis on community, and the ability for spiritually-based coping to help connect one with positive sources of social support, may further reinforce coping and instill optimism and purpose (i.e., *persist*) into marginalized youth. This claim is supported by strong positive correlations ( $r$ 's .31 - .61) between spiritually-based coping on the Africultural Coping Systems Inventory, seeking social support, and optimism (Utsey et al., 2000).

### Spiritually-Based Coping on Outcomes in Minoritized Youth

While meta-analytic findings generally point towards positive correlations between spiritual/religious coping and positive psychological adjustment ( $r = .33$ , 95% *CI* [.30 - .35],  $k = 29$ ; Ano & Vasconcelles, 2005), a smaller but promising body of work has begun to examine spiritual coping's impact on minoritized groups' outcomes. For example, in a sample of 221 emerging adults ( $M_{age} = 20$ ,  $SD = 5.8$ , 45% African American), Chapman and Steger (2010) found that positive religious coping, an act of coping involving fitting oneself to one's environment by actively praying to and trusting God, predicted fewer anxiety symptoms in this sample, regardless of race. On the other hand, in a sample of 201 Asian American college students ( $M_{age} = 20.16$ ,  $SD = 2.79$ ) spiritually-based coping did not emerge as a significant predictor of depressive symptoms above discrimination and familial support (Wei et al., 2010). Religious participation may, however, function as a coping mechanism that helps regulate the stress response system, with a study of 227 Black youth followed over 6 years (T1  $M_{age} = 14.85$ ,  $SD = .68$ ) finding negative associations between religious participation and morning cortisol levels at baseline and at 6-year follow-up among Black male youth (Assari et al., 2015). Looking

at studies examining the protective impact of spiritually-based/religious coping, discrimination was not related to depressive symptoms for Mexican-American vocational students ( $M_{age} = 26.81, SD = 8.46$ ) high in religious coping (Fernandez & Loukas, 2014). Conversely, Greer (2011) did not find collective coping strategies, a latent variable of ACSI coping subscales (Utsey et al., 2000) including spiritually-based coping, to moderate the relation between racial + gender discrimination and psychological symptoms in a sample of African American college students ( $M_{age} = 25, SD = 10.71$ ). Similarly, religious behaviors have been shown to be positive related to self-esteem among Muslim adults when discrimination is low, but the positive relationship does hold when discrimination is high (Ghaffari & Çiftçi, 2010).

It is important to note that these generally mixed findings may be due to differences in conceptualization of spiritually-based coping, samples at different developmental stages, and differences in race and social context. Nonetheless, although the potential cognitive and biological mechanisms by which spiritually-based coping may reduce the negative impact of discrimination have not been greatly explored in a systematic way, these studies provide initial evidence that spiritually-based coping may yet have a positive impact on minoritized youths' psychological and physiological health when facing discrimination. Indeed, several studies have even found spiritually-based coping to be predictive of positive outcomes over and above the impact of traditional mainstream coping strategies (Ahmed et al., 2011; Utsey et al., 2007), further highlighting their promise as an effective strategy minoritized individuals may use to cope with discrimination.

### Summary

In practice, spiritually-based coping is one way in which both *shift* and *persist* of the S&P paradigm are enacted; minoritized and marginalized youth are first shifting by reappraising racialized stress through the lens of higher power then persist by finding meaning, optimism, and a positive future orientation through the comfort their provided by their higher power(s) and spiritual community (Sumner et al., 2018). Spiritually-based coping has been associated with positive psychosocial functioning as main effects (Ano & Vasconcelles, 2005; Chapman &



Steger, 2010). However, similar to the literature on ERI, evidence for protective effects buffering youth against the impact of ethnic-racial discrimination have been mixed. Spiritually-based coping is, nonetheless, a well-recognized construct that has historically been important for minoritized communities (Heppner et al., 2014) and is an important component in promoting ‘optimal human functioning’ in these communities (Constantine & Sue, 2006). Conceptualizing spiritually-based coping as an adaptive reactive coping strategy that falls under the S&P paradigm and embodies the functions and shifting and persisting may help scholars better understand how and under what conditions this culturally-congruent coping strategy helps protect against the negative impact of discrimination.

## FAMILIAL CULTURAL VALUES

In addition to examining the ways youth cope with discrimination individually, it is crucial to understand the role the familial cultural values play in helping minoritized youth effectively cope with racialized stressors. Similar to critical civic engagement and spiritually-based coping, the enactment of familism and collectivistic values serve as crucial, salient way minoritized youth cope with stress, and this manner of coping also fits conceptually under the S&P coping paradigm. Familial cultural values serve as an anchor for minoritized populations promoting prosocial behaviors, fostering youth to contribute to the family, and providing youth with a sanctuary when experiencing discriminatory stress. An understanding of familial cultural values among minoritized families becomes even more important when considering the larger coping literatures’ emphasis on individualistic styles of coping (Kuo, 2013), the lack of understanding how minoritized groups cope with stressors (Compas et al., 2017), and the absence of attention towards the culturally-specific coping strategies of minoritized groups (Utsey et al., 2000).

### Culturally-Congruent Expression of S&P Through Familial Cultural Values

Familial cultural values may serve as mechanisms through which youth create meaning and optimism through the fulfillment of familial obligations, consistent with how youth persist in the face stress within an S&P model. Familial cultural values, like familism, include both attitudinal

and behavioral components that may complement S&P (Calzada et al., 2013), and have been endorsed among multiple minoritized groups (Chiang et al., 2019). Attitudinal components of familism include cognitive factors such as beliefs in familial reciprocity and support, fulfilling obligations to the family, close relationships between family members, and the family coming before the individual (Stein et al., 2014). In terms of *shift*, familial cultural values may help re-center their experiences away from them as individuals and instead reappraise relative to their familial experiences. These values may focus youth on needing to cope and remain in control not to bring shame to their family or youth may weigh what their family has already overcome in the context of discrimination and marginalization. Behavioral familism involves the expression of those attitudinal beliefs, and, when it functions adaptively, may look like fulfilling certain familial obligations that provide youth with a sense of pride and positive affect at fulfilling obligations (Telzer & Fuligni, 2009). Familism has been implicated in the development of meaning and purpose in life among youth (Kiang, 2012), and has also been directly with fewer depressive symptoms through the influence of meaning in life (Stein et al., 2020) – further strengthening conceptual links as familism serving as one manifestation of S&P coping. Completing familial obligations fosters a sense of role fulfillment in youth, suggesting that youth can turn to supporting their families as a way to cope as this provides them with a sense of purpose and meaning (Tsai et al., 2016). Behavioral familism may manifest differently depending on youths' context (Calzada et al., 2013), meaning that environmental stressors, such as discrimination have the possibility to incite behavioral manifestations of familism employed as coping mechanisms. Indeed, while familism values are not included in standard definitions of coping, scholars are increasingly calling for familism to be integrated into investigations of coping among Latinx groups because of its importance when youth are face with stressors (Gonzalez et al., 2020; Kuo, 2013). While exploration of familism values as a coping mechanism has been largely restricted to studies with Latinx's, it is important to note that familism and communalistic values are highly endorsed among other minoritized groups and limited research shows that familism's effects on functioning may be similar, if not stronger in non-Latinx groups (e.g., Chiang et al., 2019).

### Familism Values and Outcomes in Minoritized Youth

As a cultural value behaviorally expressed in order to cope with environmental stressors, the impact of familism values has been examined in the context of ethnic-racial discrimination and has, thus far, resulted in mixed findings. For example, in their examination of links between multiple stressors (acculturative stress, economic hardship, and discrimination), risky behaviors, and depressive symptoms in a sample of 207 Latinx adolescent mothers ( $M_{\text{age}} = 16.23$ ,  $SD = 1.00$ , 64.6% U.S.-born), Umaña-Taylor and colleagues (2011) only found familism values to protect against greater risky behaviors when discrimination was at low levels. Familism values was not found as a moderator for other types of stressors, nor did it moderate the positive discrimination-depressive symptom relation (Umaña-Taylor et al., 2011). Similarly, familism values has been promotive of fewer depressive symptoms above the negative impact of discrimination, but has not moderated, nor protected, against the impact of discrimination among Latinx adolescents (Stein et al., 2015). Finally, in a study of 207 Mexican-origin college students, familism values were shown to protect against the impact of acculturative stress on depressive symptoms but did not protect against the negative effect of discrimination (Cheng et al., 2016).

In other work, familism values has been found to help reduce the negative impact of discrimination on youth outcomes. For example, in a 2-wave study of 750 Mexican American youth ( $M_{\text{age}} = 10.42$ ,  $SD = .55$ , 48.7, 70.3% U.S. born) familism values mediated the relation between peer discrimination and adolescent outcomes (internalizing and externalizing symptoms), thereby helping reduce the negative impact of discrimination (Berkel et al., 2010). In a study of 198 Latinx college students ( $M_{\text{age}} = 20.6$ ,  $SD = 1.78$ , 78% U.S. born) examining how aspects of familism values may moderate acculturative stress and discrimination-mental health links, acculturative stress was not associated with depression at high levels of familism support, and high familism referents (i.e., behaving in line with familial expectations) reduced the magnitude of the association between discrimination and anxiety (Corona et al., 2017).

Because literature on the protective effects of familism in the context of ethnic-racial discrimination have been, thus far, mixed, the question “what else do minoritized youth need in

order to successfully cope with discrimination?” is again relevant. As with the previously reviewed literatures on ERI and culturally-congruent coping factors, it is likely that none are sufficient on their own, but instead need to be employed concurrently in order to lead to optimal adaptation in the face of racialized stress. Cavanaugh and colleagues (2018) have found preliminary evidence for this claim, finding that Latinx cultural assets, a variable subsuming familism, ERI, and enculturative behaviors, protect against greater externalizing symptoms in the face of high peer discrimination and high foreigner objectification (e.g., messages such as “go back to where you came from”).

### Enactment of Familism Values Under the S&P Paradigm

As noted above, attitudinal familism (i.e., endorsement of values) is distinct from behavioral familism, or the engagement in familistic behaviors (Hernandez & Bamaca-Colbert, 2016; Stein et al., 2014). Although the majority of work examining the moderating effect of familism has only focused on value endorsement, both attitudinal and behavioral manifestations of familism values are likely important in understanding how familism reflects the principles of S&P. Indeed, recent scholarship has pointed to the protective effect familism is due to families behaving in ways that align with the values, including exhibiting greater cohesion, more warmth, and parental monitoring (Hernandez & Bamaca-Colbert, 2016). Further, the enactment of these values in daily assistance have been shown lead to greater happiness and role fulfillment in adolescents (Tezler & Fuligni, 2009). In the same vein, a key tenet in familism is familial cohesion and support, and indeed, familism values predict better psychological health indirectly through familial closeness and social support in a multi-ethnic college sample (Campos et al., 2014). Taken together, this suggest that it is both the endorsement and enactment of these cultural values that serve as a foundation of psychological resilience in marginalized communities.

Consistent with this notion, when exposed to racialized stressors such as discrimination, youth turn towards family for social support (Chandra & Batada, 2006). By seeking support from their families and/or being oriented towards the importance of seeking or administering support, these

youth are enacting important, culturally-congruent familism values are feeling protected through the support of the family, and are developing meaning and purpose in life through the reinforcement of a collectivistic, interdependent construal of the self in relation to the family (Stein et al., 2014). In other words, orientations and behaviors characterized by seeking support through the family as opposed to through the employment of individual coping mechanisms constitutes a *shift*. In this way, the locus of control does not always rest within the individual, which would necessitate that the individual cope with the stressor, but may instead sometimes rest within the family unit (Martin-Romero et al., 2020). This goes far beyond the traditional characterization of social support in mainstream coping literature as largely instrumental, where supports are “in the role of a back up system if independent efforts fail” (Compas et al., 2017, p. 948). In many minoritized groups, the family unit may function as one of the primary systems employed to cope with stress (Brondolo et al., 2009; Chandra & Batada, 2006), meaning that racialized stress may be more commonly reappraised a family-level stressor; then it is up to the family unit to respond to and cope with that stressor. This may look like processing the stressor as a family, bolstering family resources to protect the individual and/or family from future harm or responding to the stressors and/or environment that produced the stressor (McCubbin et al., 1980), where effective, S&P-style coping with uncontrollable stress would entail the family changing to create a goodness of fit with their environment. These different methods of resolving and diffusing uncontrollable and racialized stress at the family level may spur the development of meaning, purpose, and optimism (a.k.a. *persistence*) after caring for and being cared for by one’s family (Sumner et al., 2018), further reinforcing the collectivistic/communalistic values espoused in these minoritized communities.

Thus, while still falling under the S&P paradigm of coping, familial social support may be better characterized as more a stable coping response for youth who default towards coping with stress through the support of the family unit relative to critical civic engagement and spiritually-based coping, which are reactive coping strategies used more intentionally and slightly later in development (Metzger et al., 2018). This deeply engrained, culturally-based tendency towards family-based coping has been reflected in culturally-informed examinations of coping among minoritized groups. For instance, in an examination of the factor structure of the COPE (Carver

et al., 1989) in a sample of Latinx adolescents, an exploratory factor analysis failed to reproduce the original factor structure of the COPE, instead finding evidence for three alternate coping factors: (1) purposeful cognitive/behavioral engagement, most relevant to this argument (2) support seeking, and (3) separation/disengagement (Gonzalez et al., 2020). Taken together, these findings point towards familial social support seeking both as an important way in which youth cope with racialized stress and as a more communally-focused manifestation of the S&P paradigm of coping.

### Summary

From the literature examining the impact of cultural values and familial support, we assert that familial social support seeking constitutes an important, culturally-congruent coping strategy that falls under the S&P paradigm of coping. Through the shifting of racialized stress appraisal from an individually-based stressor to a family/group-based stressor that the family unit is responsible for processing and coping with together, meaning and purpose are being strengthened and optimism maintained in youth through the supportive role of the family. As evidenced by the general S&P literature, role models (typically parents) and the support they provide likely help engender S&P coping in minoritized youth, which has positive downstream impacts to positive health outcomes as these youth then cope uncontrollable stress. While the literature on cultural values has been mixed with respect to familism values protecting against discrimination in isolation, cultural assets as a whole have been shown to protect against greater externalizing symptoms when youth are exposed multiple types of discrimination (Cavanaugh et al., 2018). Overall, and across the previously reviewed literatures, there remains a need for additional work conceptualizing and integrating what we know about the many factors that youth may employ in response to discrimination, with the hope that a more integrated, holistic understanding may allow scholars to identify ways in which may optimally handle discrimination.

## AIMS: TESTING THE CONCEPTUAL MODEL THROUGH 3 EMPIRICAL EXAMPLES

Ethnic-racial discrimination is a pernicious racialized stressor that has profound concurrent and long-lasting impacts on the physical and psychological functioning of minoritized youth. Ethnic-racial identity is an oft-cited, important cultural asset employed by minoritized youth that, despite conferring protection in the domain of physical health, has been unsuccessful in protecting youth against poor psychosocial outcomes in the context of ethnic-racial discrimination. Shift-&-persist coping is a way of coping that has been demonstrated to lead to positive physical and psychological outcomes for low-SES youth and for minoritized youth exposed to both non-racialized stressors such as economic hardship and ethnic-racial discrimination. When youth's ethnic-racial identities are high, placing them at-risk for the effects of discrimination to be magnified, minoritized youth may need to turn to culturally-congruent coping methods such as critical civic engagement, spiritually-based coping, and familial social support - three coping strategies that embody the core tenets of S&P coping and fall under the S&P paradigm of coping. By integrating what is known about these strategies with the literature on S&P and ERI, scholars may come to a more holistic, well-rounded, developmentally-informed and context-specific understanding of the strategies minoritized youth employ to successfully cope with ethnic-racial discrimination.

In the remainder of this integrative dissertation, I attempt to demonstrate the utility of this theoretical model by testing its validity in three separate ways. Through this series of related studies, I hope to broadly demonstrate the utility of studying S&P coping processes in a programmatic way as a viable way in which the field may come to a deeper understanding of how minoritized youth effectively cope with discrimination. These papers represent steps in a program of research aimed at understanding how S&P coping may help minoritized youth cope with discrimination.

Study 1 (Christophe et al., 2019) utilizes a sample of Latinx adolescents and represents the first study examining S&P in the context of depressive symptoms and ethnic-racial discrimination. This paper established S&P coping, measured without the additional culturally-based coping

strategies, as an efficacious way for Latinx youth to cope with economic stress (Path A of conceptual model), and an efficacious way for low-ERI Latinx adolescents to cope with ethnic-racial discrimination (Path B). This paper also highlights the importance of context; depending on the racialized versus non-racialized nature of the stressor, S&P may also interact with cultural assets such as ERI. Finally, while culturally-informed S&P may protect against different forms of discrimination, this paper establishes S&P's viability in protecting, at least for low-ERI youth, against the form of discrimination most commonly faced by racially marginalized youth, ethnic-racial discrimination.

Study 2 (Christophe et al., in press) builds off the theoretical model by testing how 2 of the proposed culturally-based S&P strategies (critical civic engagement and spiritually-based coping) relate to general shift-&-persist (path F) as well as how the higher-order construct, culturally-informed S&P, connecting these strategies together protects minoritized youth from greater depressive symptoms when faced with discrimination (Path G) over and above the typically promotive impact of ERI endorsement. Testing for connections between these constructs through factor analytic methods such as higher-order factor analysis elucidates the magnitude and nature of association between these previously disparate constructs (i.e., how well associations between these constructs are explained by a super-ordinate, higher-order construct). From a basic science perspective, this may spur inquiry more into the mechanism of what specifically makes each of these component coping strategies effective for whom and under what conditions. Furthermore, the identification of a higher order (e.g., *p*-factor; Caspi et al., 2014) then begs the question how this factor is associated with other culturally influenced coping strategies employed by minoritized youth. Examining this protective association controlling for discrimination allows us to examine the extent to which the variance in ERI that is typically promotive is being accounted for through the influence of culturally-informed S&P. Stated differently, do the culturally-rooted strategies that underlie culturally-informed S&P together demonstrate the promotive act of expressing youth ERI through coping and cultural value endorsement? Finally, this study uses the most widely used measure of discrimination, Williams and colleagues (1997) everyday discrimination measure, which assesses discrimination separately from the reasons one is exposed to that discrimination (e.g., due to race/ethnicity,



gender, nationality, etc.). By measuring in discrimination in such a way, we are able to measure the ability for culturally-informed S&P to protect against discrimination that may be motivated by a wide range of marginalized and intersectional identity statuses, as opposed to only examining ethnic-racial discrimination.

Finally, Study 3 tested this conceptual model by using latent profile analysis (LPA) to examine whether minoritized youth exhibit specific patterns of S&P, civic engagement, religious coping, and familism value endorsement, as well as whether certain patterns of these coping factors promote less depression and greater psychological wellbeing. This study also examined the degree to which specific patterns of coping factors protected against the impact of discrimination, or whether the associations between discrimination and our outcomes differed depending on profile membership. On a practical level ‘person-centered approaches’ such as LPA may be useful in concurrently testing the impact of multiple facets of the S&P paradigm model on youth outcomes. Person-centered approaches differ from variable centered approaches in the sense that they do not make inferences about associations between variables that are assumed to generalize to the population one’s sample is drawn from, they instead test whether subgroups exist within the data that are drawn from qualitatively different populations (Lanza et al., 2013). These unobserved groups, or profiles, are observed by identifying distinct patterns of variation across multiple indicators – in this case shift, persist, religious coping, civic engagement, and familism values. By testing for patterns of these coping factors and their associations with discrimination, identity, and outcomes, Study 3 provides a novel way of assessing how and if these S&P and culturally-informed coping factors are promotive and protective in the face of uncontrollable racialized stress.

As applied to the study of S&P, the strategies under the S&P paradigm, and ERI, LPA is well-suited to identify subpopulations, or groups of youth who are (within group) similar in their endorsement of these protective factors but differ in their level of endorsement from other groups. This approach will allow a detailed description whether groups of individuals employ different patterns of S&P style coping (e.g., high civic engagement and familism value endorsement, but no spiritually-based coping). These profiles may then be predicted by relevant

sociodemographic variables such as race or gender, giving a more complete picture of which individuals endorse which patterns of coping. Mean-level differences may then be tested between these profiles with respect to depressive symptoms and psychological wellbeing, and profiles may be evaluated as moderators of the association between discrimination and these outcomes of interest. This will allow me to specifically test whether certain patterns of S&P coping endorsement are more or less protective than patterns displayed by other groups of individuals. Ultimately, this flexible analytical approach has led to person-centered approaches being considered an invaluable tool in promote equity and social justice and fruitful inquiry into resilience by examining the experiences of minoritized youth in a more ecologically-valid way at the person level (Neblett et al., 2016). Briefly, testing Christophe and Stein's (under review) conceptual model in these two different ways will add additional nuance as to whether groups of minoritized individuals demonstrating particular patterns of S&P coping are better protected from the harmful effects of discrimination than are other groups of individuals (see paper 3 proposal for greater discussion of this study and its implications).

Through these 3 studies, I attempt to increase the field's understanding of the nature of S&P coping, the contexts in which S&P coping is more and less effective in helping youth cope with discrimination, and the information that can be gained by comparing and contrasting different ways of measuring the concurrent impact of ERI and multiple S&P-style coping strategies.

## CHAPTER II: THE PROTECTIVE EFFECTS OF SHIFT-&-PERSIST AND ETHNIC-RACIAL IDENTITY ON DEPRESSIVE SYMPTOMS IN LATINX YOUTH

### STUDY 1 ABSTRACT

Shift-&-persist is a coping strategy that has been shown to lead to positive health outcomes in low-SES youth but has not yet been examined with respect to psychological health. This study tests whether the shift-&-persist coping strategy works in tandem with ethnic-racial identity to protect against depressive symptoms in the face of two uncontrollable stressors: economic hardship and peer discrimination. In a sample of 175 Latinx youth (51.4% female;  $M_{age}=12.9$ ), shift-&-persist buffered the positive relation between economic hardship and depressive symptoms. In terms of peer discrimination, among youth who reported little use of shift and persist, discrimination was related to higher depressive symptoms, whereas youth who reported higher amounts of shift and persist (at and above the mean) were protected and did not evidence this association. However, among youth with high ethnic-racial identity, shift-&-persist failed to protect against the deleterious association between peer discrimination and depressive symptoms. These findings suggest that shift-&-persist is protective for Latinx youth, although the context in which it is protective changes based on the racialized/non-racialized nature of the stressor.

### INTRODUCTION

Latinx youth living in the United States typically experience mental health disparities relative to other racial/ethnic groups, including greater numbers of depressive symptoms (Twenge & Nolen-Hoeksema, 2002). At the same time, Latinx youth in immigrant families face a variety of stressors (i.e., ethnic-racial discrimination; economic stress) that contribute to psychological risk (Stein, Gonzalez, & Huq, 2012). Given these disparities, it is essential to identify what factors can mitigate the negative effects of stressors in this growing population as 25% of the U.S.

population will be Latinx by the year 2060 (Colby & Ortman, 2014). A burgeoning literature highlights promotive and protective factors that limit the impact of these stressors on development and focuses primarily on ethnic-racial identity processes (Neblett, Rivas-Drake, & Umana-Taylor, 2012). Health disparities research has led to the identification of a coping strategy, termed shift-&-persist, that mitigates the negative effects of low socioeconomic status (SES) on a variety of health outcomes (E. Chen & Miller, 2012). It is posited that when low-SES youth *shift* (i.e., cognitively reappraise and accept uncontrollable life stressors) and *persist* (i.e., find meaning in life and hold positive beliefs about the future), these processes minimize the impact of uncontrollable life stressors such as poverty on health outcomes due to better regulation of the stress response system (E. Chen & Miller, 2012).

Despite promising findings related to physical health, shift-&-persist processes have not yet been tested with psychological outcomes like depressive symptoms, and only one other study examined discrimination as the uncontrollable life stressor (Lam et al., 2018). Further, no past studies of shift-&-persist in minoritized populations considered how shift-&-persist processes intersect with ethnic-racial identity processes that are critical to positive psychosocial adjustment for minoritized adolescents. Adolescence is a pivotal period where ethnic-racial identity begins to solidify and where youth are able to employ increasingly complex coping strategies to combat life stressors (Rivas-Drake et al., 2014). Specifically, as youth transition into adolescence they increasingly eschew behavioral coping strategies such as physical escape and avoidance and become increasingly reliant on more complex cognitive coping strategies, using them as a first line of defense in attempting to deal with life stressors (Compas et al., 2017). It is therefore important to understand how cognitively-based coping strategies such as shift-&-persist and culturally protective factors such as ethnic-racial identity coalesce during this key developmental period to protect against stressors and facilitate positive psychosocial adjustment. To fill these gaps in the literature, this study tested how the shift-and-persist coping strategy interacts with ethnic-racial identity in predicting depressive symptoms in a sample of Latinx youth. This study examined whether the protective effects of shift-&-persist and ethnic-racial identity are evident in the face of two stressors: economic hardship, commonly examined in shift-&-persist work,

and peer discrimination, a racialized stressor that which exerts harms over and above economic hardship (Stein et al., 2012).

### Shift-&-Persist in Response to Stressors

Shift-&-persist theory centers on the physiological and psychological benefits of secondary coping responses in the face of uncontrollable stressors that are enhanced in conjunction with an ability to find meaning and hope in aspects of life (E. Chen & Miller, 2012). This set of responses is hypothesized to positively impact both acute and long-term biological and psychological reactivity to stress ultimately leading to positive health outcomes. Specifically, shifting, or cognitively reappraising stressful situations is posited to reduce inflammation, one of the human body's acute responses to stress, and cardiovascular responses to stress. This lower physiological reactivity that comes from shifting is theorized to, over time, decrease the likelihood of cardiovascular disease and its associated risk factors such as high blood pressure, cholesterol, and triglycerides (E. Chen & Miller, 2012). Additionally, maintaining optimism and endorsing a sense of meaning or purpose in life, also known as persisting, can help individuals appraise stressors as less threatening and find hope, stay strong, and adapt when faced with adversity, all of which may lead to more adaptive responses to stress and lower cardiovascular disease risk (E. Chen, 2012).

Past work on shift-&-persist suggests that low SES youth, who often have minimal control over their life stressors, may benefit most from using shift-&-persist, whereas higher SES youth with more control over their life stressors may benefit more from active, primary coping strategies (E. Chen & Miller, 2012). Supporting this notion, in a study of 121 youth diagnosed with asthma, shift-&-persist moderated the relation between SES and asthma outcomes such that low-SES youth who endorsed shift-&-persist strategies had less asthma inflammation at baseline as well as fewer missed school days and less rescue inhaler use at a 6-month follow-up relative to high-SES youth who did not benefit from shift-&-persist strategies (E. Chen et al., 2011). Another cross-sectional study of 122 adolescents and their parents found that shift-&-persist was associated with lower levels of chronic inflammation markers, C-reactive protein and Inter

leukin-6 (IL-6), for low-SES youth but not high SES youth (E. Chen, McLean, & Miller, 2015). Finally, in a study of 1,523 middle school children, low SES was associated with high BMI scores for those low in shift-&-persist, but there was no association between SES and BMI for those high in shift-&-persist, implying that shift-&-persist is protective against obesity for low-SES youth (Kallem et al., 2013). These findings support Chen's (2012) assertion that the combination of shifting and persisting leads to better physiological outcomes than either strategy in isolation because shift-&-persist is "postulated to represent a good fit with the environmental constraints that often affect those low in SES" (p.191). This means that, theoretically, cognitively shifting attention away from uncontrollable stressors or reframing them, combined with maintaining optimism and hope for the future theoretically produces better health outcomes than would either shifting or persisting in isolation.

Although shift-&-persist is associated with positive physical health outcomes such as lower inflammation (E. Chen et al., 2015), a steeper decline in diurnal cortisol (L. Chen et al., 2019), and a lower body mass index (Kallem et al., 2013) in low-SES youth, research has just begun to examine whether the shift-&-persist coping strategy works in response to other types of uncontrollable stressors, such as unfair treatment. In a sample of 308 youth diagnosed with asthma, shift-&-persist moderated the relationship between unfair treatment and asthma profiles (control, quality of life, and daily symptoms) such that shift-&-persist was associated with better asthma profiles for those who reported high levels of discrimination (Lam et al., 2018). These results mirror what has been found with low-SES youth, giving preliminary evidence that the shift-&-persist strategy may be protective in response to multiple types of uncontrollable stressors. More research is needed, however, to determine whether the mechanisms by which shift-&-persist is protective remain the same across stressors for a mental health outcome like depressive symptoms. Although Chen and Miller (2012) highlight research showing the psychological benefit of cognitive reappraisal and meaning in life in isolation and go on to propose that the shift-&-persist coping strategy is beneficial for youths' psychological and physical well-being, research has not yet tested whether shift-&-persist moderates the link between uncontrollable stressors and negative mental health outcomes. This need is compounded

by a large body of work showing strong relationships between uncontrollable stressors such as discrimination and depressive symptoms in minoritized youth (e.g., Benner et al., 2018).

### Ethnic-Racial Identity

Ethnic-racial identity is a multidimensional construct that refers to the beliefs, attitudes, and behaviors endorsed and engaged in by youth related to their ethnic-racial group membership (Umaña-Taylor et al., 2014). Two important aspects of ethnic-racial identity moderate the relation between discrimination and youths' psychosocial adjustment: centrality (the how important race is in one's self-concept), and private regard (the positive or negative feelings towards one's ethnic-racial group; Sellers et al., 2006). Because minoritized youth are overrepresented in low-SES communities and face additional uncontrollable stressors such as ethnic-racial discrimination (Pahl & Way, 2006) in addition to economic stressors (Mroczkowski & Sánchez, 2015), it is paramount to utilize samples of minoritized youth to better understand how cultural protective factors such as ethnic-racial identity may protect youth from negative psychosocial outcomes in the face of different types of stressors.

In trying to better understand the factors that foster resilience in minoritized youth, it is important to investigate how ethnic-racial identity may interact with coping strategies such as shift-&-persist. Ethnic-racial identity is, on its own, often conceptualized as a resource that enables minoritized youth to cope with culturally-based stressors (Neblett et al., 2012). It is argued that youth with stronger ethnic-racial identities develop more effective coping skills because they have taken more time to think about and process issues related to race and ethnicity such as ethnic-racial discrimination (Sellers & Shelton, 2003). Past research provides preliminary support for this argument. For example, higher levels of ethnic-racial identity were positively correlated to secondary coping among a diverse sample of 5,423 youth, including those of African-American (23%) and Latinx (19%) backgrounds (Roberts et al., 1999). Similarly, higher ethnic-racial identity scores were associated with secondary coping strategies (e.g., cognitive restructuring) among a sample of 67 African-American seventh grade students (Zaff, Blount, Phillips, & Cohen, 2002). In a study of Latinx youth, Umaña-Taylor and colleagues (2008) found

that aspects of ethnic-racial identity were associated with using more primary, proactive coping strategies, although these proactive coping strategies did not mediate the relation between identity and self-esteem across time. Conversely, Seaton and colleagues (2014) found that avoidant coping partially mediates the relation between discrimination and depressive symptoms in a sample of Black youth. This pathway from avoidant coping to depressive symptoms was moderated by identity status, where Black youth espousing an oppressed minoritized ideology reported the strongest relations between avoidant coping and depressive symptoms. Thus, ethnic-racial identity processes serve an important role in the relation between discrimination and depressive symptoms, warranting further investigation.

While there is not currently robust empirical support for relations between ethnic-racial identity, coping, and psychosocial outcomes, the claim that ethnic-racial identity interacts with coping in facilitating positive development in minoritized youth is supported by strong theoretical models such as Spencer and colleagues' (1997) Phenomenological Variant of Ecological Systems Theory and Neblett and colleagues' (2012) conceptual model of youth protective factors. Neblett and colleagues' model specifically proposes bidirectional relations between identity and coping processes that then disrupt the relation between ethnic-racial discrimination and negative youth adjustment. In this way, there is emerging theoretical evidence that coping may be enhanced by ethnic-racial identity, and vice versa, meaning that both are, therefore, crucial in fostering resilience in minoritized youth.

In addition to coping more broadly, meaning in life – a critical component of shift-&-persist – may also be enhanced by the protective effects of ethnic-racial identity. Meaning in life encompasses two distinct subcomponents that revolve around (1) viewing one's life as meaningful or filled with purpose (i.e., presence of meaning), and (2) actively seeking out and exploring meaning in life (i.e., search for meaning; Steger, Frazier, Oishi, & Kaler, 2006). Conceptualized as a developmental asset for youth (Burrow, O'Dell, & Hill, 2010), higher levels of meaning in life have been linked to better psychological health (Brassai, Piko, & Steger, 2011), greater life satisfaction (Ho, Cheung, & Cheung, 2010), and greater positive affect (King, Hicks, Krull, & Del Gaiso, 2006). Minoritized youth, as a function of their membership in a



marginalized group, may have even greater motivation or reason to develop a strong meaning or purpose in life (Sumner, Burrow, & Hill, 2018). This notion coincides with work finding that, for minoritized youth, the process of developing one's ethnic-racial identity (e.g., exploring one's ethnic/racial background; building ethnic/racial pride) fosters a sense of purpose or meaning in life (Kiang & Fuligni, 2010). Indeed, findings from previous research suggest that a clear association exists between meaning in life and ethnic-racial identity. For instance, in a sample of diverse 12<sup>th</sup> graders (36% Latinx), meaning in life correlated with ethnic-racial identity such that adolescents with higher identity endorsement reported greater levels of meaning in life in addition to more positive daily well-being and fewer feelings of daily distress (Kiang & Fuligni, 2010). These findings thus underscore the relevance of ethnic-racial identity in the context of shift-&-persist and suggest that they may be synergistically related to positive adaptation in the face of stress, especially for depressive symptoms.

Taken together, although both coping and meaning in life are associated with ethnic-racial identity, no work has focused on how their role as part of a shift-&-persist coping strategy intersects with identity processes and different types of uncontrollable stressors. Shift-&-persist processes may operate similarly in Latinx samples in the face of universal stressors like economic hardship, but shift-&-persist may fail to confer the same benefits when youth face culturally-based, uncontrollable stressors such as discrimination. For these types of stressors, ethnic or racially-based processes may be an important additional resource to mitigate the impact these stressors have on depressive symptoms (Neblett et al., 2012). Supporting this notion, the relation between economic stress and depressive symptoms has been moderated by a negative attributional style in a sample of Latinx youth whereby negative attributional style was associated with greater depressive symptoms in the context of high economic stress. This relation, however, did not hold for culturally-based stressors (Stein et al., 2012). Taken together, these findings suggest that culturally-protective processes like ethnic-racial identity and effective coping processes such as shift-&-persist may both be needed to produce optimal psychological well-being in minoritized youth. However, the precise independent and potentially interactive effects of these variables have yet to be determined.

## Current Study

The current study was derived from a larger project broadly examining factors impacting the psychosocial wellbeing of Latinx mother-child dyads in an emerging immigrant community in rural North Carolina. The current study extends the literature on both the shift-&-persist construct and resilience in Latinx youth in three ways. First, by testing whether shift-&-persist processes protect against a primary psychological outcome relevant for adolescents (i.e., depressive symptoms). Second, by examining two uncontrollable stressors (i.e., economic stress and peer discrimination). Third, by testing whether shift-&-persist and ethnic-racial identity processes work differentially based on type of stressor (i.e., economic vs. culturally-based) in a predominantly low-income sample of primarily U.S-born Latinx youth in immigrant families.

Economic stress has the potential to negatively affect all youth regardless of ethnic or racial background. Thus, it was hypothesized that shift-&-persist would protect against depressive symptoms in the face of high economic hardship, whereas the three-way interaction between shift-&-persist, ethnic-racial identity, and economic stress would not be significant (Hypothesis 1). Because cultural protective factors are likely more important when youth are faced with culturally-based stressors such as ethnic-racial discrimination (Neblett et al., 2012), it was hypothesized that the three-way interaction between shift-&-persist, ethnic-racial identity, and discrimination would be significant such that high shift-&-persist and identity would be associated with the fewest depressive symptoms in the face of high levels of discrimination (Hypothesis 2). Because shift-&-persist and ethnic-racial identity were hypothesized to work in tandem (e.g. high identity and high shift-&-persist are together associated with the best outcomes in the context of ethnic-racial discrimination), significant two-way interactions between ethnic identity and economic hardship or discrimination were not expected.

## METHOD

### Participants

Participants were 175 Latinx adolescents (51.4% female; 48.6% male) recruited from two middle schools in a rural emerging immigrant community in North Carolina. These adolescents were 12.9 years of age on average (range = 10 – 15 years), and 86% reported being born in the U.S. For those not born in the U.S., the average age of immigration was 4.25 years old (range = 0 – 12 years). The median annual household income for this sample was \$24,999.50, with 80.8% of households earning \$30,000 or less. Participants were recruited in the summers of 2013, 2014, and 2015.

### Procedure

After receiving IRB approval, participants were recruited using call lists of 7<sup>th</sup> and 8<sup>th</sup> grade students at two rural middle schools in an emerging immigrant community in North Carolina. Trained research assistants visited the homes of eligible families, obtained consent from parents, assent from the adolescents, and used computers supplied by the research team to administer questionnaires in English or Spanish depending on the adolescent's language preferences (only 2 completed in Spanish). Assessment took approximately two hours to complete and adolescents received a \$10 gift card for their participation (see Kulish et al., 2018 for detailed methods).

### Measures

#### SHIFT-&-PERSIST

Based on past theoretical work suggesting that shift and persist have the greatest impact when working in tandem and as done in previous research (Lam et al., 2018), items from two different measures were combined to create a measure of shift-&-persist. Eight items from the positive reinterpretation and growth and the acceptance subscales of the COPE inventory (Carver, Scheier, & Weintraub, 1989) and five items from the presence subscale of the Meaning in Life

questionnaire (Steger, Frazier, Oishi, & Kaler, 2006) were used to capture the shift-&-persist construct. Sample items from the COPE include “I look for something good in what is happening” and “I learn to live with it” while sample items from the Meaning in Life questionnaire include “My life has a clear sense of purpose” and “I have a good sense of what makes my life meaningful.” To further validate this measure, a principal components analysis with an oblique rotation requesting two components, one for shift and one for persist, was conducted (see Appendix B for more information). This measure of shift-&-persist closely mirrored the most current measure of shift-&-persist created by Lam and colleagues (2018), which included sample items such as “I feel useful in life” and “when something doesn’t turn out the way I want, I think about what good things could come from the situation.” Similar to past work, summary scores of shift and persist, which were significantly positively correlated with each other ( $r = .28, p < .001$ ) were standardized and averaged together so that higher scores indicated more use of the shift-&-persist coping strategy (Mello, Wiebe, & Berg, 2019). This scale demonstrated good internal consistency ( $\alpha = .80$ ).

#### ETHNIC-RACIAL IDENTITY

Ethnic-racial identity was assessed using the centrality and private regard subscales of a modified version of the Multidimensional Inventory of Black Identity (MIBI: Sellers et al., 1998). Items in this measure, which has been previously adapted for use in Latinx populations (Kiang, Yip, Gonzales-Backen, Witkow, & Fuligni, 2006), were changed from being specific to the Black experience (e.g. “I have a strong sense of belonging to Black people”) to items applicable across ethnic groups within the Latinx community (e.g. “I have a strong sense of belonging to my ethnic group). These 8 items were rated on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating stronger levels of identity. Consistent with past work by Kiang and Witkow (2018), and due to a strong positive correlation ( $r = .82, p < .001$ ), the centrality and private regard subscales were averaged to create a composite variable measuring ethnic-racial identity. The composite showed good internal consistency ( $\alpha = .92$ ).

## ECONOMIC HARDSHIP

Perceived economic hardship was assessed using the Not Enough Money for Necessities subscale of the Psychological Sense of Economic Hardship scale (Barrera, Caples, & Tein, 2001). Youth responded to this 7-item subscale on a scale from 1 (*strongly agree*) to 5 (*strongly disagree*), with higher numbers representing greater economic hardship. Sample items include “my family had enough money to afford leisure and recreational activities,” and “we had enough money to afford the kind of food we should have.” This subscale displayed good internal consistency ( $\alpha = .92$ ).

## PEER SCHOOL-BASED DISCRIMINATION

Peer discrimination was assessed using a 7-item adapted version of the school-based discrimination peer subscale (Way, 1997). On this measure, youth rate how often they have experienced different types of mistreatment due to their ethnicity/race (e.g. being treated with less respect; being insulted or called names) on a scale from 1 (*never*) to 5 (*all the time*). This scale showed good internal consistency ( $\alpha = .87$ ).

## YOUTH DEPRESSIVE SYMPTOMS

Youth depressive symptoms were assessed using the Mood and Feelings Questionnaire (MFQ; Angold et al., 1995). Youth responded to this 33-item scale by indicating how often certain statements applied to them recently on a scale from 0 (*not true*) to 2 (*mostly true*). Scores were added to form a summary score, with higher numbers indicating a greater number of endorsed depressive symptoms. Sample items include “I felt lonely” and “I felt miserable or unhappy.” This scale showed good internal consistency ( $\alpha = .94$ ).

## RESULTS

### Data Analytic Plan and Descriptives

Primary study hypotheses were tested using two separate regression models within the structural equation modeling framework. The first model included economic hardship, shift-&-persist, and ethnic-racial identity as exogenous variables. The second set of analyses included peer discrimination, shift-&-persist, and ethnic-racial identity as exogenous variables. These models were run separately due to proposed differences in how identity interacts with economic hardship, a general stressor, and discrimination, a culturally-based stressor. This approach is consistent with past work testing the impact of culturally-based and non-culturally-based stressors (Stein et al., 2012). The shift-&-persist model included main effects and a two-way interaction between a stressor (economic hardship or discrimination) and the moderator (shift-&-persist). The shift-&-persist + identity model included the main effects, all the two-way interactions, and the 3-way interaction between the stressor, shift-&-persist, and ethnic-racial identity<sup>1</sup>. We also tested these models with age, gender, and parental income as covariates, but the inclusion of these variables did not significantly alter the results nor the interpretations and thus were removed for greater parsimony. All data were analyzed using Mplus version 8.1, which does not use stepwise or hierarchical regression procedures but rather enters predictor variables and interactions into a model simultaneously. Missing data in our predictors and our outcome (2.7% total data missing) were addressed using a version of Full Information Maximum Likelihood (FIML) that produces standard errors robust to non-normality (MLR: Muthén, 2011). All predictors were mean-centered before creating interaction terms and inferential statistics. Means, standard deviations, and correlations for all study variables are reported in Table 1. Overall, the sample endorsed a fairly low number of depressive symptoms ( $M = 11.04$ ,  $SD = 11$ , Range = 0-53). Economic hardship ( $r = .33$ ,  $p < .01$ ) and peer discrimination ( $r = .49$ ,  $p < .01$ )

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<sup>1</sup> A person-centered approach was first attempted using shift-&-persist, centrality, and private regard as predictors in a latent profile analysis but model indices indicated that, partly due to a small number of indicators and limited variability with respect to ethnic-racial identity, multiple, distinct profiles did not exist within the data.

were moderately and positively associated with depressive symptoms, while shift-&-persist was negatively associated with depressive symptoms ( $r = -.16, p < .05$ ). Ethnic-racial identity was not associated with depressive symptoms.

Variable	Mean (SD)	(1)	(2)	(3)	(4)	(5)
(1) Depressive Symptoms	11.04 (11.00)	1				
(2) Economic Hardship	2.22 (.79)	.33**	1			
(3) Peer Discrimination	1.67 (.64)	.49**	.13	1		
(4) Shift-&-persist	3.14 (.64)	-.16*	-.23**	-.12	1	
(5) Ethnic-racial Identity	4.23 (.70)	-.09	-.15	-.04	.27**	1

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

Table 1. Means, standard deviations, and correlations for all study variables (N=175).

### Primary Analyses

#### ECONOMIC HARDSHIP

Unstandardized regression coefficients, robust standard errors, and p-values for the shift-&-persist and shift-&-persist + identity models can be found in Table 2. Results from the shift-&-persist model suggest that economic hardship was associated with more depressive symptoms ( $b = 4.43, SE = 1.11, p < .001$ ) alongside a significant interaction between shift-&-persist and economic hardship ( $b = -3.91, SE = 1.67, p = .02$ ). Figure 2 shows the simple slopes plotted at one standard deviation above and below the mean of economic hardship. Consistent with our hypotheses, the positive relation between economic hardship and depressive symptoms was attenuated for youth high in shift-&-persist ( $b = 1.91, SE = .87, p = .03$ ) and accentuated for youth low in shift-&-persist ( $b = 6.95, SE = 2.01, p = .001$ ). When ethnic-racial identity was added into the shift-&-persist + identity model, the interaction between economic hardship and shift-&-persist remained significant, but ethnic-racial identity was not directly associated with depressive symptoms ( $b = -.58, SE = 1.16, p = .62$ ) and there was not a three-way interaction between economic hardship, shift-&-persist, and identity ( $b = 2.93, SE = 2.70, p = .28$ ).

Shift-&-persist model ( $R^2 = .16, p = .09, N = 174$ )			
	<i>b</i>	<i>SE</i>	<i>p</i>
Economic Hardship	4.43	1.11	<.001
S&P	-.99	1.29	.44
Economic Hardship x S&P	-3.91	1.67	.02
Shift-&-persist + identity model ( $R^2 = .17, p = .08, N = 175$ )			
	<i>b</i>	<i>SE</i>	<i>p</i>
Economic Hardship	3.73	1.12	.001
S&P	-.75	1.27	.55
ERI	-.58	1.16	.62
Economic Hardship x S&P	-4.87	1.73	.005
Economic Hardship x ERI	1.36	2.07	.51
S&P x ERI	-.18	2.63	.94
Economic Hardship x S&P x ERI	2.93	2.70	.28

Table 2. Multiple regression with economic hardship predicting youth-reported depressive symptoms.

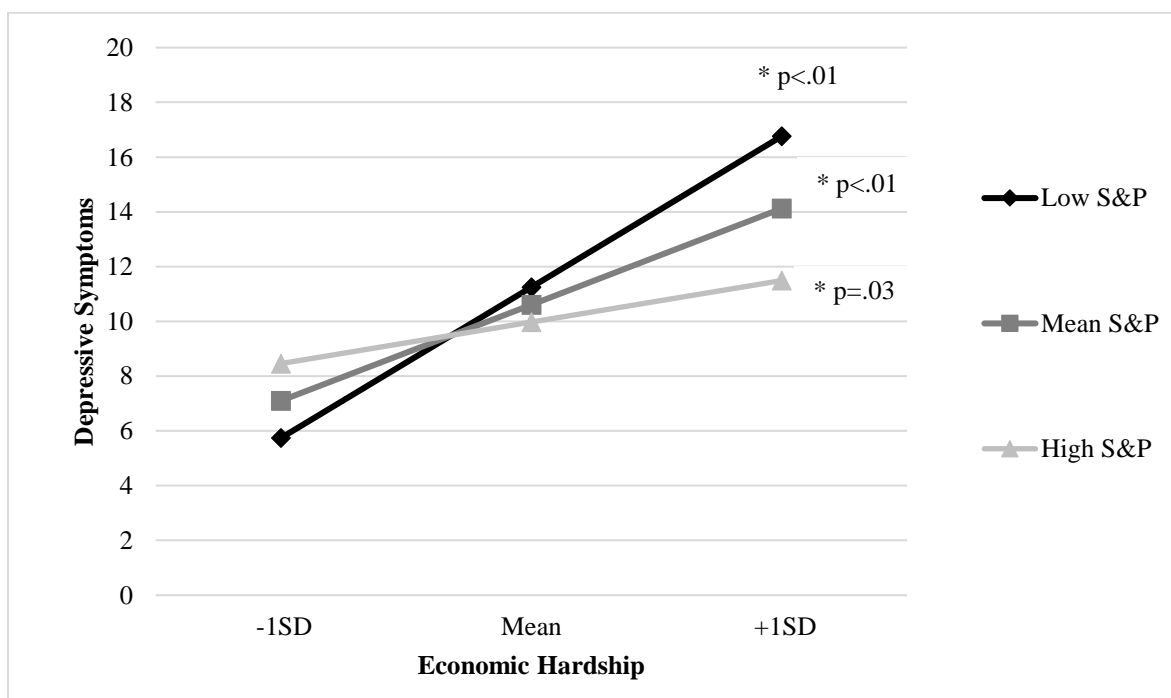


Figure 2. Simple slopes for economic hardship moderated by shift-&-persist.



## PEER DISCRIMINATION

In the shift-&-persist model, in which youth depressive symptoms were regressed on peer discrimination and shift-&-persist (see Table 3), higher peer discrimination was associated with more depressive symptoms ( $b = 7.95$ ,  $SE = 1.47$ ,  $p < .001$ ), but the interaction between shift-&-persist and discrimination was not significant ( $b = -2.12$ ,  $SE = 2.67$ ,  $p = .43$ ). When we introduced identity into the shift-&-persist + identity model, the main effect of peer discrimination remained significant ( $b = 6.76$ ,  $SE = 1.31$ ,  $p < .001$ ) and, consistent with our hypothesis, the three-way interaction between discrimination, shift-&-persist, and identity was significant as well ( $b = 7.98$ ,  $SE = 3.63$ ,  $p = .03$ ). However, the nature of the interaction was not as hypothesized. Contrary to our hypothesis, there was a positive association between peer discrimination and depressive symptoms for those high in ethnic-racial identity whether youth had low ( $b = 8.18$ ,  $SE = 1.77$ ,  $p = .00$ ) or high shift-&-persist ( $b = 11.00$ ,  $SE = 3.78$ ,  $p = .004$ ). For youth low in ethnic-racial identity, however, the relation between peer discrimination and depressive symptoms was non-significant when shift-&-persist was high ( $b = -7.59$ ,  $SE = 6.19$ ,  $p = .22$ ), implying that high shift-&-persist protected against depressive symptoms in the face of discrimination only when youth have low ethnic-racial identity endorsement. Additionally, when ethnic-racial identity was low, the relation between discrimination and depressive symptoms was also non-significant when shift-&-persist was at the mean ( $b = -1.84$ ,  $SE = 4.05$ ,  $p = .65$ ), but was significant at low levels of shift-&-persist ( $b = 9.68$ ,  $SE = 1.84$ ,  $p < .001$ ). Together, these findings suggest that average to high levels of shift-&-persist are protective against discrimination when ethnic-racial identity is low. Figure 3 illustrates the simple slopes plotted at one standard deviation above and below the mean of discrimination when ethnic-racial identity is one standard deviation below the mean.

Shift-&-persist model ( $R^2 = .26, p < .001, N = 175$ )			
	<i>b</i>	<i>SE</i>	<i>p</i>
Peer Discrimination	7.95	1.47	<.001
S&P	-1.71	1.35	.21
S&P x Peer Discrimination	-2.12	2.67	.43
Shift-&-persist + identity model ( $R^2 = .29, p < .001, N = 175$ )			
	<i>b</i>	<i>SE</i>	<i>p</i>
Peer Discrimination	6.76	1.31	<.001
S&P	-1.94	1.32	.14
ERI	.013	1.11	.99
Peer Discrimination x S&P	-3.37	2.36	.15
Peer Discrimination x ERI	4.07	2.33	.08
S&P x ERI	3.06	1.98	.12
Peer Discrimination x S&P x ERI	7.98	3.63	.03

Table 3. Multiple regression with peer discrimination predicting youth-reported depressive symptoms.

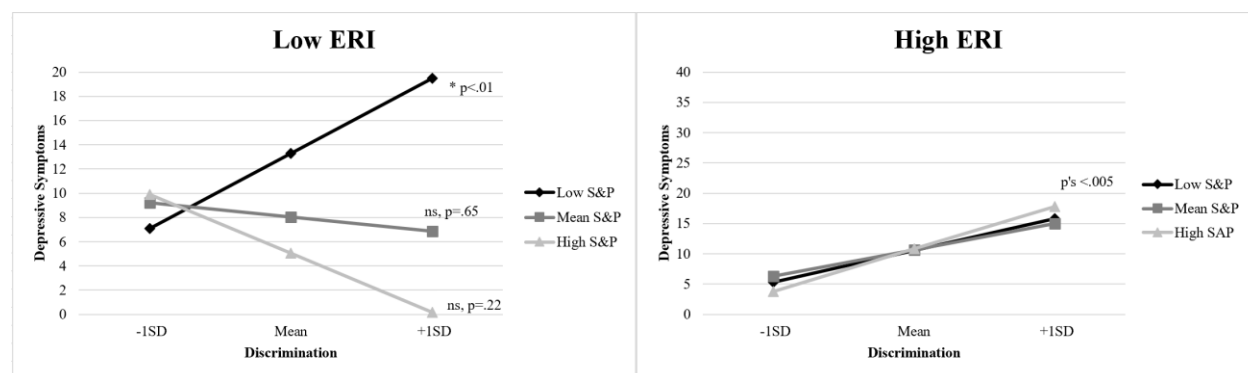


Figure 3. Simple slopes for peer discrimination moderated by shift-&-persist at different levels of ethnic-racial identity.

### Sensitivity Analyses

Some research has reported that positive ethnic-racial affect (private regard) can buffer the effect of discrimination on psychosocial outcomes (Rivas-Drake et al., 2014). Thus, a sensitivity analysis was conducted wherein we replaced our measure of ethnic-racial identity (a combination of private regard and centrality) with private regard alone. If positive ethnic-racial affect was driving the 3-way interaction between shift-&-persist, ethnic-racial identity, and discrimination,

then this 3-way interaction would be expected to remain significant after eliminating centrality from the measure of ethnic-racial identity. There was no main effect of private regard ( $b = -.07, p = .944$ ), no significant 2-way interactions, and a marginal but non-significant 3-way interaction ( $b = 5.16, p = .064$ ) between shift-&-persist, private regard, and peer discrimination. This implies that, in this sample, centrality and private regard both seem to play a role in influencing the relationship between discrimination and depressive symptoms.

## DISCUSSION

Shift-&-persist is a secondary coping strategy involving cognitive reappraisal, positive future orientation, and meaning in life that has been shown to protect against negative health outcomes such as inflammation (E. Chen & Miller, 2015), obesity (Kallem et al., 2013), and asthma symptoms (E. Chen et al., 2011) in low-SES youth. While this coping strategy theoretically operates similarly with respect to mental health outcomes, this claim is as of yet empirically untested. Furthermore, minoritized youth, who are often overrepresented in low-SES communities, are subjected to additional, harmful uncontrollable stressors like ethnic-racial discrimination. Although cultural protective factors like ethnic-racial identity have been identified as assets that may protect against depressive symptoms in the face of discrimination (Neblett et al., 2012), no past work has examined how shift-&-persist may operate in tandem with ethnic-racial identity to protect against negative psychosocial outcomes in low-SES minoritized youth. Because early adolescence is a crucial period where youth increase their use of cognitive coping strategies (Compas et al., 2017) and begin to more intentionally explore and come to terms with what their ethnic-racial identity means to them (Rivas-Drake et al., 2014), it is important to understand how shift-&-persist and ethnic-racial identity work to foster positive youth adjustment in the face of uncontrollable stressors like economic hardship and discrimination.

To address these gaps in the literature, the current study tested whether the shift-&-persist coping strategy was effective in protecting against depressive symptoms by examining how shift-&-persist operated as a moderator in response to both cultural and non-cultural stressors, and by

examining how ethnic-racial identity interacted with shift-&-persist and stressors to predict depressive symptoms in a sample of low-income Latinx youth (80.8% of households earning less than \$30,000). Overall, Chen and Miller's (2012) assertion that shift-&-persist is associated with positive psychological functioning for low-SES youth was supported, although the beneficial effect depended on the type of stressor. Consistent with past work, shift-&-persist was protective for youth experiencing high levels of economic hardship, but the protective effect of shift-&-persist for peer discrimination depended on Latinx youths' level of ethnic-racial identity. Contrary to what was hypothesized, the protective effect of shift-&-persist in the face of peer discrimination only emerged for youth at average and lower, but not greater, levels of ethnic-racial identity (i.e., private regard and ethnic-racial centrality).

Consistent with the first hypothesis proposing shift-&-persist as a moderator of the association between economic hardship and discrimination, results indicated that youth high on shift-&-persist were protected from the association between economic hardship and depression. This is consistent with past work suggesting that shift-&-persist is associated with positive physical health outcomes for low-SES youth (Kallem et al., 2013), and supports Chen & Miller's (2012) claim that the shift-&-persist framework extends to psychological outcomes. Also consistent with this hypothesis, there was no significant interaction between economic hardship, shift-&-persist, and ethnic-racial identity. Because economic hardship is a pervasive social stressor that is not explicitly culturally-based, ethnic-racial identity did not seem to confer additional protection against depressive symptoms.

Building upon more recent empirical work by Lam and colleagues (2018) examining shift-&-persist in the context of unfair treatment, this study aimed to determine whether shift-&-persist protected against peer discrimination. When factoring in ethnic-racial identity, results indicated that average and high levels of shift-&-persist were protective against peer discrimination, but only at low levels of ethnic-racial identity. That is, when youth felt less positively about their Latinx heritage and their heritage was less central to their identity, mean to high levels of shift-&-persist were associated with fewer depressive symptoms for Latinx youth exposed to high levels of discrimination. Although the results did not find that high shift-&-persist and high

ethnic-racial identity work together and mitigate the impact of depressive symptoms as proposed in Hypothesis 2, the results instead suggested that shift-&-persist is most protective in response to peer discrimination when youth lack a strong, traditionally-protective identity. This finding, therefore, supports the notion that shift-&-persist, while adaptive for an uncontrollable stressor such as peer discrimination, does not complement identity, but instead acts as a supplement, providing protection against depression in the absence of a strong identity. Finally, this finding suggests that there are different mechanisms by which culturally and non-culturally-based uncontrollable stressors are associated with depressive symptoms in youth. In trying to better understand the factors that protect youth against negative psychological adjustment, it is important to further examine the complex interplay between shift-&-persist and ethnic-racial identity that may explain this finding.

One possible explanation for the surprising relation between identity and shift-&-persist in predicting youth depressive symptoms may be due to the “double-edged nature” (Yip, 2018) of ethnic-racial identity. Although ethnic-racial identity is frequently thought to be protective against culturally-based stressors such as discrimination (Umaña-Taylor et al., 2014), other studies have found that the negative impacts of discrimination are worse among those with high levels of identity endorsement, particularly centrality (Burrow & Ong, 2010). Although Yip (2018) concludes that there is not yet a consensus on how ethnic-racial identity provides protection and/or risk in the face of discrimination, these findings support the aforementioned theory that higher identity endorsement is associated with negative outcomes in the face of discrimination, as discrimination was positively associated with depression regardless of shift-&-persist levels.

In the current study this study’s measure of ethnic-racial identity was limited to two content-based components: centrality and private regard, which capture the degree to which identity is important to youths’ self-concept (centrality) and the degree to which group membership is viewed positively by youth (private regard). Other process-based components of ethnic-racial identity such as exploration (the process of learning and making meaning of ethnic-racial heritage) and commitment (the sense of belonging to a specific ethnic-racial group) have also

been found to moderate the relations between discrimination and depressive symptoms (Torres & Ong, 2010). Because of the many challenges of operationalizing and measuring identity, future empirical work should examine the relations between shift-&-persist and different aspects of ethnic-racial identity in order to further clarify when and how the two interact to influence youths' psychological well-being.

Another explanation for these findings may lie in the relative utility of utilizing proactive, primary coping strategies rather than secondary coping strategies, such as shift-&-persist, in youth with strong ethnic-racial identities. This would be consistent with the finding by Seaton and colleagues (2014) whereby avoidant coping and strong ethnic-racial identity predicted worse depressive symptoms. To combat the deleterious effects of peer discrimination, youth may need to be armed not just with strong and central ethnic-racial identity, but also equipped with more active, primary coping resources that help youth feel that they are impacting the larger societal structure. For example, work by Hope and colleagues (2017) finds that civic engagement may be an adaptive coping response to discrimination, especially for youth with stronger ethnic-racial identities. Longitudinal work has shown identity resolution to be predictive of proactive coping over time in the face of discrimination among Latinx adolescents (Umaña-Taylor et al., 2008). Furthermore, in a study with Latinx college students, French & Chavez (2010) found that strong ethnic-racial identity alone was insufficient to overcome stereotype discrimination, further supporting arguments emphasizing the necessity of proactive coping in addition to ethnic-racial identity to buffer the negative impacts of discriminatory experiences (Sellers & Shelton, 2003).

On the other hand, longitudinal examinations of the impacts of political activism among Black and Latinx college students have found that microaggressions were related to more stress and anxiety for Black students who were highly politically active but were related to less stress and fewer depressive symptoms for politically active Latinx college students (Hope, Velez, Offidani-Bertrand, Keels, & Durkee, 2018). These findings imply that primary coping strategies may be associated with positive psychological adjustment only under certain conditions and, potentially, for certain ethnic-racial groups. At the same time, secondary coping strategies could be beneficial under certain circumstances, and perhaps even more important than primary coping

strategies. Ultimately, this study offers evidence that in the face of high levels of discrimination, average to high levels of shift-&-persist, a secondary coping strategy, are important in protecting against depressive symptoms when ethnic-racial identity is lower. However, because the adoption of secondary coping strategies such as shift-&-persist does not protect against depressive symptoms in the face of discrimination when ethnic-racial is high, future work is needed to compare the utility of proactive, primary coping strategies with more passive secondary coping strategies like shift-&-persist in guarding against depressive symptoms at different levels of identity endorsement. Furthermore, because many other psychological health outcomes beyond depression can manifest in response to these stressors, future work should continue to examine whether different coping strategies like shift-&-persist protect against the effects of various types of uncontrollable stressors on other psychological outcomes such as anxiety, self-esteem, and externalizing behaviors.

Further, the persist aspect of shift-&-persist may still prove to be beneficial to protect against discrimination especially if youth are able to continue to find meaning (e.g., potentially through civic engagement) and see a positive path to the future for themselves. Interestingly, there was a significant positive correlation between shift-&-persist and ethnic-racial identity in this sample of Latinx youth ( $r = .27, p < .01$ ). Although not hypothesized, this significant correlation underscores the claim that these traditionally protective factors covary and together have downstream implications for psychological well-being in minoritized youth. This positive correlation is most likely due to the links between ethnic-racial identity and meaning in life. The presence of meaning in life has been shown to serve as a partial mediator of the relationship between identity and psychological adjustment in a diverse sample of 12<sup>th</sup> grade students (Kiang & Fuligni, 2010). Significant positive correlations between ethnic-racial identity and meaning in life have also been found in a sample of African American adults (Ajibade, Hook, Utsey, Davis, & Van Tongeren, 2016). Ultimately, more work is needed to understand the relationship between these two interrelated constructs and the implications of this relationship for positive psychological well-being among minoritized youth and its role in protecting against discrimination.

This study is novel as it contributes to the field's understanding of shift-&-persist and resilience; however, it is not without limitations. The first limitation is the cross-sectional nature of our data. Although theories would suggest that utilizing the shift-&-persist coping strategy works across time to prevent the development of depressive symptoms when faced with economic hardship or discrimination, it is not possible to determine causality nor directionality from these cross-sectional analyses. Future work should take a more developmental approach in examining how high levels of shift-&-persist can protect against the development of depressive symptoms over time and examine the potential mediating role of shift-&-persist when youth with different levels of identity endorsement are exposed to uncontrollable stressors. Future longitudinal work should also consider how these relations are impacted by parental relationship quality and how the shift-&-persist strategy may be modeled by parents and transmitted over time from parent to child as suggested in Miller and colleagues' (2014) work examining the impact of the Strong African American Families program.

Second, this project was not specifically designed to study shift-&-persist. Although the chosen variables mirror those used in Lam and colleagues' (2018) shift-&-persist measure, the measure used in this study may not wholly capture the shift-&-persist construct. Although this measure effectively reflects the acceptance and cognitive reappraisal aspects of shift, for persist it focuses only on meaning in life and does not capture the sense of optimism or positive future orientation that has been theorized to be present in those that shift and persist. These facets of shift-&-persist may be particularly important to measure when examining depressive symptoms. Future work should attempt to incorporate items measuring positive future orientation and optimism into existing measures of shift-&-persist to increase the construct and predictive validity of our measures. Future work should also test the theoretical assertion that shift-&-persist leads to the best outcomes for youth faced with uncontrollable stressors by examining shift-&-persist both separately and together, as was done in the current study.

Finally, this study solely assessed dispositional, individually-based assets that may help foster resilience in minoritized youth. Similar to how parenting may help instill the shift-&-persist coping strategy in youth (Miller et al., 2014), ethnic-racial socialization messages delivered by



parents, which have been associated with resilience in minoritized populations (Brown & Tylka, 2011), may also interact with shift-&-persist to foster resilience in the face of discrimination. Future work should examine the interplay of internal assets such as ethnic-racial identity and shift-&-persist with external assets such as positive parenting and socialization messages in contributing to psychosocial resilience in this population.

## CONCLUSION

Although the shift-&-persist coping strategy has been theorized to confer upon marginalized youth psychological protection in the face of uncontrollable stressors (Chen & Miller, 2012), this claim has not been empirically tested. This study tested whether shift-&-persist worked in tandem with ethnic-racial identity to protect low-SES Latinx youth against depressive symptoms in the face of uncontrollable stressors (i.e. economic hardship and discrimination). This was accomplished by testing two and three-way interactions to determine whether shift-&-persist and ethnic-racial identity moderated the relationship between the uncontrollable stressor and depressive symptoms. Results indicated that shift-&-persist was associated with fewer depressive symptoms for those facing high levels of economic hardship and for those high in peer discrimination but low in ethnic-racial identity. These novel findings provide support for the notion that the shift-&-persist coping strategy, which has been associated with positive physical health for low-SES youth, may be protective in the face of economic and cultural stressors for Latinx youth. These findings also provide support for the notion that ethnic-racial identity may act as a “double-edged sword” (Yip, 2018), as endorsing a strong identity in the face of high discrimination was associated with the greatest number of depressive symptoms for our sample of Latinx youth, even when taking shift-&-persist into account. Finally, these findings contribute to the understanding of identity and positive youth development by illustrating that the use of the shift-&-persist coping strategy may lessen the impact of discrimination on depressive symptoms for adolescents who are still undertaking the developmental task of forming a strong, central identity. Future work should begin to examine how the shift-and-persist coping strategy may be

associated with additional mental health outcomes in minoritized youth whilst also considering the influence of important cultural factors such as ethnic-racial identity.

## CHAPTER III: CULTURALLY-INFORMED SHIFT-&-PERSIST: A HIGHER-ORDER FACTOR MODEL AND PROSPECTIVE ASSOCIATIONS WITH DISCRIMINATION AND DEPRESSIVE SYMPTOMS

### ABSTRACT

**Objectives:** Based on the conceptual overlap between shift-&-persist and culturally-based strategies (critical civic engagement and spiritually-based coping), this study tests whether associations between these three previously disparate strategies are attributable to the existence of a higher-order coping construct: culturally-informed shift-&-persist. **Methods:** Among 364 diverse minoritized youth ( $M_{age}=18.79$ , 85.2% female), we tested for the existence of this higher-order factor through confirmatory factor analysis. **Results:** We found theoretical and empirical support for the existence of a higher-order factor structure and for our higher-order factor - culturally-informed shift-&-persist. Culturally-informed shift-&-persist promotes fewer depressive symptoms as a main effect in addition to completely protecting against the negative impact of discrimination on depressive symptoms when culturally-informed S&P is high. **Conclusions:** The current study illustrates relations between three previously distinct coping strategies through their association with culturally-informed shift-&-persist. Results highlight culturally-informed shift-&-persist's promotive and protective effects in the face of ethnic-racial discrimination. Implications for subsequent study of culturally-based coping are discussed.

### INTRODUCTION

Minoritized<sup>2</sup> groups in the United States face a host of unique stressors, such as ethnic-racial discrimination, that have long-lasting deleterious effects on mental and physical health (Benner

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<sup>2</sup> We use the term minoritized to refer to racial/ethnic 'minority' youth. We elect to use the term minoritized, as it implies that these youth have been placed in disadvantaged social positions due to sociopolitical and economic inequalities regardless of numeric representation.

et al., 2018). Given the numerous negative effects of discrimination, scholars have attempted to identify factors that may promote positive wellbeing and protect against discrimination. One commonly posited factor has been ethnic-racial identity (ERI), or the meaning that race/ethnicity has in one's self-concept (Sellers et al., 1998); however, meta-analyses have shown that ERI does not universally nor consistently protect minoritized youth from negative mental health when exposed to discrimination (Yip et al., 2019). Thus, while ERI serves to promote adaptation in minoritized youth (Rivas-Drake et al., 2014), it is likely that other factors such as effective coping are also necessary in order to protect youth against discrimination (Neblett et al., 2012). Despite the clear need for scholars to understand how minoritized youth cope with discrimination, the mainstream coping literature has been widely criticized attending to neither the unique stressors these groups face nor the unique ways youth cope with these stressors (Compas et al., 2017).

To continue to integrate the role of culture and resilience into the study of developmental psychopathology (Coll et al., 2000), it is critical to understand the how culturally-embedded coping strategies that are informed by the values, beliefs, and traditions of these minoritized groups (Heppner et al., 2014) serve to buffer against race-related stress. This study aims to elucidate previously unexplored connections between culturally-informed coping strategies with a mainstream coping model that has been developed specifically for marginalized groups (Chen & Miller, 2012). The shift-&-persist paradigm draws from the broader coping literature and described a coping response that is best suited for uncontrollable stressors, like poverty. Although the S&P model has been shown to mitigate the risk of poverty or low SES on health-outcomes (e.g., Chen et al., 2015), it has not shown the protective effect for discrimination against depressive symptoms for youth that report a strong ERI (Christophe et al., 2019). Our goal is first to identify whether there is culturally-informed shift-&-persist factor, a higher-order coping construct that ties together these mainstream and culturally-informed coping strategies in minoritized youth, and, controlling for the typically-promotive effects of ERI test whether this higher-order factor serves to buffer the impact of ethnic-racial discrimination.

### Shift-&-Persist

Shift-&-persist (S&P) is a coping strategy posited to be particularly well-suited to help individuals cope with uncontrollable stressors (Chen & Miller, 2012). Through a combination of shifting, or utilizing cognitive reappraisal and acceptance strategies, along with persisting, or maintaining optimism and espousing meaning and life purpose in the face of uncontrollable stress (Chen, 2012), S&P has been theorized to lead to an adaptive downregulation in the stress response system. This lower reactivity to uncontrollable stress afforded by shifting and persisting helps weaken the associations between stressors and health outcomes (Chen & Miller, 2012). On a practical level, uncontrollable stress, such as pervasive poverty and discrimination, is likely not as amenable to active, problem-based coping strategies focused on changing the problem itself to fit the needs of the individual (Lazarus & Folkman, 1984). Hence, uncontrollable stress may necessitate more emotion-focused coping strategies such as S&P, as it helps youth actively adapt themselves and their emotional responses to function in spite of the uncontrollable problem or stressor (Lazarus & Folkman, 1984).

The empirical literature on S&P has supported these conceptual claims. For low-SES individuals, who face both a higher number of uncontrollable stressors and are more likely to be members of minoritized groups, S&P has protected against numerous negative health outcomes such as inflammation (Chen et al., 2013), asthma-related impairment (Chen et al., 2011), and high body mass index (Kallem et al., 2013). In recent tests expanding the S&P literature beyond SES-related stressors, S&P has been shown to protect against asthma-related impairment for youth (N=308, 50% non-White) facing high levels of unfair treatment (Lam et al., 2018). Additionally, when examining discrimination as a stressor in a sample of 175 Latinx adolescents ( $M_{age}=12.9$ , range=10-15 years), S&P protected against greater depressive symptoms for youth low in ERI who faced high levels of discrimination (Christophe et al., 2019). These cross-sectional results, which provided initial evidence for the efficacy of S&P in protecting against discrimination, were subsequently replicated longitudinally in a sample of 674 Mexican origin youth (Stein et al., under review). Specifically, S&P interacted with ERI and discrimination, where low-ERI youth exposed to discrimination were protected from greater depressive symptoms concurrently

in 9<sup>th</sup> grade when they endorsed high levels of S&P. Additionally, a trend was observed where Low-ERI youth who faced high levels of discrimination had steeper decreasing trajectories of depression across high school (from 9<sup>th</sup>–12<sup>th</sup> grade) if they endorsed high levels of S&P in 9<sup>th</sup> grade (Stein et al., under review). This growing body of literature on S&P suggests that an S&P approach to coping may be beneficial for minoritized youth who do not feel strongly connected to their ethnic/racial group. These findings highlight that S&P may not, in isolation, be enough to protect youth whose race/ethnicity is an important part of who they are. Thus, the following questions arise: (1) what other coping strategies are needed? and (2) how do these other coping strategies relate to S&P?

### Identity and Coping

In trying to understand how minoritized youth best cope with discrimination, it is important to understand the multitude of cultural assets they may choose to employ in conjunction with coping. As outlined in Neblett and colleagues' (2012) conceptual model of culturally-informed promotive and protective factors, one of these important assets is ERI. The authors assert that ERI and coping strategies are bidirectionally related. In different contexts, ERI and coping strategies may work synergistically and provide more protection against discrimination than either could on their own. In other contexts, one of these factors may not be effective, and the other factor may be crucial in providing the psychosocial protection that typically comes from the other factor. For instance, ERI alone has not been shown to protect against the pernicious effects of discrimination on psychological well-being in isolation (Yip et al., 2019), but ERI may be more protective when considered in conjunction with coping, as both factors may be simultaneously employed to combat discrimination (Neblett et al., 2012). We focus on two particular aspects of ERI that likely influence response to ethnic/racial discrimination: centrality (i.e., subjective importance of ethnic/racial identity) and private regard (i.e., affect associated with one's racial group membership; Sellers et al., 1998).

## Critical Civic Engagement

Critical civic engagement (CCE) is a coping strategy that involves civically engaged attitudes and behaviors employed in an attempt to protect oneself and others by directly responding to harmful societal inequities such as structural racism (Hope & Spencer, 2017). Extending beyond civic engagement, CCE emphasizes a shift from involvement that is driven by civic duties (e.g., U.S. citizens have the social responsibility to vote) to involvement that is motivated by the quest for systemic change and social justice (Hope et al., 2016). An emerging body of literature offers evidence as to how and why minoritized youth become involved in CCE, with experiences of racial discrimination identified as notable factors (Anyiwo et al., 2018). However, findings are sparse on the potential mental health costs and benefits for minoritized youth who are active in CCE despite the theorized positive and negative consequences for health, including indicators of mental health. Findings from a study conducted by Hope and colleagues (2018) add preliminary support to this claim. Among a sample of 504 Black and Latinx college students, political activism functioned as a moderator for links between microaggressions and mental health (Hope et al., 2018). For Black students, high political activism meant a worsening of the negative effects of discrimination on stress and anxiety, while the opposite effect in relation to depressive symptoms was observed among Latinx students (Hope et al., 2018). Such a difference in findings across racial/ethnic groups suggests the need to further examine the effects of CCE on the health of minoritized youth, paying attention to cultural and contextual factors related to historic events, community attachments, and family context (Wray-Lake, 2019). For some minoritized youth, involvement in forms of CCE, such as sociopolitical activism, may be protective for mental health as it provides a sense of control and empowerment (Zimmerman, et al., 1999).

CCE shares many key features with S&P. Firstly, CCE necessitates a *shift*, or reappraisal and acceptance that interpersonal discrimination in many ways stems from systemic inequality and unjust socioeconomic/political systems. This shift towards understanding unequal systems as largely responsible for the perpetuation of discrimination and unfair treatment based on race/ethnicity is followed by *persistence* – namely optimism and concerted individual and community-based efforts to spur sociopolitical change. These efforts to cope with inequality by

trying to enact systemic change have been theorized to drive and reinforce a sense of purpose in life (Bjornsen-Ramig & Kissinger, 2019). CCE clearly involves the key components of S&P. This begs the question whether there may be previously unexplored links between S&P and this unique and impactful but understudied culturally-based coping strategy.

### Spiritually-Based Coping

Spiritually-based/religious coping has long been recognized (Ano & Vasconcelles, 2005) and operationalized (Knight et al., 2010) as an important coping strategy employed by minoritized groups. Often measured as an individual's tendency to seek strength, hope, and support through spiritual practices and/or beliefs in a higher power, spiritually-based coping has been broadly related to positive psychosocial outcomes in minoritized groups, including increased social support seeking and positive outlook (Utsey et al., 2000) and less anxiety (Chapman & Steger, 2010). Meta-analytical investigations have supported this link, finding associations between positive religious coping and both increased positive psychosocial outcomes (e.g., self-esteem) and decreased negative outcomes (e.g., anxiety, depression; Ano & Vasconcelles, 2005).

Spiritually-based/religious coping seems to be particularly relevant in the face of uncontrollable stressors such as discrimination. For instance, institutional racism and/or pervasive discrimination have been associated with greater use spiritual coping strategies in a broad range of minoritized samples, including adult Black women (Lewis-Coles & Constantine, 2006), diverse college students (Foster, 2009), and Black adolescents (Gaylord-Harden & Cunningham, 2009). Notably, beyond these negative racialized stressors, positive beliefs and feelings towards one's cultural group appears to increase the use of spiritually-based coping in Black youth (Constantine et al., 2002), while positive beliefs about one's religious group impacts CCE among Muslim American adolescents (Balkaya et al., 2019), further highlighting the importance of cultural processes and identity in these coping styles. It is important to note that we focus on the utility of *positive* spiritually-based coping, which commonly involves trying to connect with God and seek God's help in dealing with stressors, as opposed to negative religious coping, which involves feeling punished or abandoned by god and questioning God's love and power



(Pargament et al., 2011). Unsurprisingly, negative religious coping has been meta-analytically associated with negative psychological outcomes (Ano & Vasconcelles, 2005). While positive and negative religious coping may happen, at times, after facing discrimination, we argue that adaptive positive spiritually-based/religious coping embodies the fundamental tenets of S&P coping.

Similar to CCE, spiritually-based coping may also be conceptualized as embodying the key components of S&P. Specifically, spiritually-based coping involves a *shift*, as it involves coping with stress by *shifting* away from active, individual, problem-based coping aimed at controlling uncontrollable stressors to reappraising and accepting stressors as attributable to a higher power or factors such as fate. Most importantly, spiritually-based coping has been associated with key components of *persist*, namely future orientation and optimism (Utsey et al., 2008). Research further suggests that future optimism may be particularly adaptive for minoritized youth, as hope has been negatively associated with anxiety for Latinx high schoolers only when they identified as spiritual/religious (DiPierro et al., 2018). Further, the spiritual/religious community has been shown to be an important context where minoritized youth may develop a sense of meaning and purpose (Sumner et al., 2018). Again, given how spiritually-based coping represents both shifting and persisting, it is important to test how this culturally-informed coping strategy may be linked to S&P.

### Culturally-Informed S&P

An understanding of the S&P paradigm of coping, which encompasses component culturally-informed coping strategies that both align with the values and beliefs of minoritized groups and embodies the tenets of S&P coping in the day-to-day lived experience of minoritized individuals, is paramount in understanding the ways minoritized groups may successfully cope with discrimination. We identify CCE (Hope & Spencer, 2017) and spiritually-based coping (Utsey et al., 2000) as potential adaptive responses to discrimination that also fall under the S&P coping paradigm. By relating these previously discrete strategies as falling under the broader S&P paradigm, we posit the existence of a previously unobserved construct that explains the

theoretical relations between these coping strategies and S&P. We refer to this latent construct as ‘culturally-informed S&P’ - a construct capturing S&P, CCE, and spiritually-based coping. This adaptive coping repertoire may be most critical for those with a strong connection to their ethnic/racial group as they would benefit by enlisting the shifting and persisting strategies in ways that are centered in their experiences within their group (Neblett et al., 2012). In concert, these strategies may have the same adaptive stress regulation properties as hypothesized in the S&P model. Given that S&P has been shown to help youth cope with SES-related stressors (Chen et al., 2015), unfair treatment (Lam et al., 2018), and discrimination when ERI is low (Christophe et al., 2019), and given a growing body of research showing promotive, and sometimes protective, effects of CCE (Hope et al., 2018) and positive spiritually-based coping (Ano & Vasconcelles, 2005), understanding the nature of culturally-informed S&P may advance our understanding of how minoritized youth successfully cope with discrimination and racialized stress, especially when youth are connected to and have pride in their ethnic/racial group.

#### TESTING THROUGH HIGHER-ORDER FACTOR MODELING

Higher-order confirmatory factor analysis is a useful analytical tool in testing for the existence of the culturally-informed S&P construct. Analytically speaking, a higher-order factor models involve testing whether individual factors (termed first-order factors) are correlated, at least in part, due to the existence of a second or higher-order factor (Wang & Wang, 2019). These models have been commonly used in modeling the structure of intelligence, where specific domains of intelligence are, themselves, associated through their connection to a higher-order general intelligence factor (*g*; Brunner et al., 2012). Applied to the current study, we conceptualize culturally-informed S&P as a higher-order factor explaining the associations between admittedly different first-order constructs (S&P, CCE, and spiritually-based coping). This approach is contrasted from bifactor models, where all indicators load directly onto a ‘general’ factor while the leftover residuals load onto various ‘specific’ factors (Hammer & Toland, 2016). In this way, and unlike uses of higher-order factor modeling identifying *g* or *p*, a general underlying risk for psychopathology (Caspi et al., 2014) we do not assert that all of our first order factors are as closely connected as aspects of intelligence or manifestations of

psychopathology. We instead assert that, despite their differences, these coping strategies are connected in the sense that they embody the nature of shifting and persisting in a culturally-relevant way. Testing the fit of a higher-order factor relative to alternative factor structures (see Salum et al., 2016 for an example) allows us to, along with theory, select the factor structure that best represents the data, and then test how underlying factors may reduce the negative impact of discrimination. Using this test also can inform theory as it may suggest a psychological mechanism that may be undergirding adaptation in contexts of stress (i.e., shifting and persisting) and helps both consolidate and inform many distinct literatures that all attempt to identify protective processes for minoritized youth.

### Current Study & Hypotheses

The current study sought to test for the existence of a higher-order culturally-informed S&P construct that partially explains the associations between S&P, CCE, and spiritually-based coping. After identifying this higher-order construct, we attempt to examine how culturally-informed S&P is associated with depressive symptoms in the context of ERI, a relevant cultural asset, and discrimination, a strong predictor of depressive symptoms in minoritized populations (Benner et al., 2018). We hypothesized that (1) a higher-order factor structure would provide a good statistical fit to the data compared to a correlated-factor model and single-factor model. Additionally, we hypothesized that (2) culturally-informed S&P would be associated with fewer depressive symptoms. We hypothesized that culturally-informed S&P would be protective against depressive symptoms in the context of discrimination, especially for those with stronger ERIs.

## METHOD

### Participants & Procedure

Participants were a convenience sample of 364 minority college students (85.2% female, 84.7% U.S.-born) recruited from a general psychology school of a large public university in the

southeast U.S. Participants were majority Black (54.4%) and Latinx (22%) with a mean age of 18.79 years old ( $SD=1.34$  years; see Table 4 for additional demographics). After receiving IRB approval, participants completed an online survey through Qualtrics broadly assessing coping, identity, and psychosocial well-being. Participants received research credit for their participation and became eligible for a potential follow-up study offering both research credit and monetary compensation.

Variable	Participant	
Age	Mean (SD)	18.79 (1.34)
Sex	Male	14.6%
	Female	85.2%
	Transgender / Gender Non-Conforming / Not-listed	.3%
Nativity Status	U.S-born	84.7%
	Foreign-born	13.7%
	Missing	1.6%
Race	Black	54.4%
	Latinx	22.3%
	Asian	8.2%
	Native American/MeNa/Other	1.6%
	Multiracial	13.5%

Note. MeNa = Middle Eastern/ North African.

Table 4. Participant demographics and descriptive statistics of key study variables in our CFA models (N= 364).

## Measures

### SHIFT & PERSIST

Shift and persist were assessed separately using 12 items (shift– 5 items, persist–7 items) from Lam and colleagues’ (2018) S&P measure. Sample items include “I feel my life has a sense of purpose” (persist) and “when something doesn’t turn out the way I want, I tell myself that

everything will be alright” (shift). Items are rated on a 4-point scale from 1 (*not at all*) to 4 (*a lot*), with higher numbers indicating more shifting or persisting. Reliability in our sample was for .754 shift and .848 for persist.

#### CRITICAL CIVIC ENGAGEMENT

CCE was assessed using the 4-item Communal Action subscale of the Anti-racism Action Scale (Aldana, Bañales, & Richards-Schuster, 2019). Participants reported *Yes* (1) or *No* (0) when asked if they had engaged in various activities in the past year. Sample items included “Attended a meeting on an issue related to race, ethnicity, discrimination, and/or segregation” and “Joined a club or group working on issues related to race, ethnicity, discrimination, and/or segregation”. Endorsement of more items was indicative of greater CCE. Reliability was .692 in our sample.

#### SPIRITUALLY-BASED COPING

Spiritually-based coping was assessed using the 4-item Relationship with God an adapted subscale of the Africultural Coping Systems Inventory – Youth Version (Gaylord-Harden & Utsey, unpublished manuscript) adapted to include the item stem “When I face racism, discrimination, or unfair treatment.” Sample items include “I ask God for strength” and “I pray or talk to God.” Items are rated on a 4-point scale from 1 (*not at all*) to 4 (*A lot*). Higher values indicated greater use of spiritually-based coping. Reliability was .875 in our sample. These items are consistent with common conceptions of *positive* religious/spiritually-based coping (Pargament et al., 2000).

#### ETHNIC-RACIAL IDENTITY

Ethnic-racial identity was assessed using a summary score of the private regard and centrality a version of the Multidimensional Inventory of Black Identity (Sellers et al., 1998) adapted to be used across ethnic-racial groups. Sample items include “I have a strong sense of belonging to my ethnic group” (private regard) and “Being a member of my ethnic group is an important

reflection of who I am” (centrality). The 8 items were rated on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher numbers indicated stronger ERI endorsement. Reliability was .936 in our sample. Using a mean score of private regard and centrality to measure ERI has been done in past research on both ERI processes (Kiang & Witkow, 2018) and S&P (Christophe et al., 2019).

#### DISCRIMINATION

Discrimination was assessed using the 9-item Everyday Discrimination Scale (Williams, Yu, Jackson, & Anderson, 1997). Sample items include “you are treated with less respect than other people are” and “people act as if they think you are not smart.” Items are rated on a 6-point scale from 1 (*never*) to 6 (*almost every day*). Higher scores indicated more frequent discrimination. Reliability was .900 in our sample.

#### DEPRESSIVE SYMPTOMS

Depressive symptoms were assessed using the 7-item depression subscale of the Depression, Anxiety, & Stress Scale (DASS-21; Lovibond & Lovibond, 1995). Participants responded to items such as “I couldn’t seem to experience any positive feeling at all” and “I felt down-hearted and blue” on a 4-point scale from 0 (*Did not apply to me at all*) to 3 (*Applied to me very much or most of the time*). Higher numbers indicated greater depressive symptomatology. In line with scoring DASS-21 scoring instructions (Lovibond & Lovibond, 1995), items were summed then multiplied by two. Reliability was .897 in our sample.

## RESULTS

### Fitting Individual Factors

In order to confirm that our first-order latent factors fit the data, we began by first fitting each latent variable individually using confirmatory factor analysis (CFA) in Mplus Version 8.4

(Muthén & Muthén, 1998-2019). A Weighted Least Square Mean and Variance adjusted (WLSMV) estimator was employed given the categorical nature of our indicators. All indicators were well below commonly used thresholds of skewness and kurtosis ( $|\text{largest skew}| = .933$ ;  $|\text{largest kurtosis}| = 1.088$ ). Good model fit was determined by a combination of an  $\text{RMSEA} < .08$  (MacCallum et al., 1996), a  $\text{CFI} > .95$  and a  $\text{SRMR} < .08$  (Hu & Bentler, 1999). Each latent variable generally provided a good fit to the data (see Table 5). In fitting the persist latent variable, we correlated the three reverse-scored items (P3, P6, & P7) to partially account for a perceived method effect where these items were more highly associated with each other than they were the positively-worded items. This resulted in a meaningful improvement in model fit. Modification indices were not utilized to improve fit for any other individual factor.

Model	Persist (7 items)	Shift (5 items)	Critical Civic Engagement (4 items)	Spiritually-based Coping (4 items)
$\chi^2$ (df)	37.180 (11)	33.769 (5)	3.679 (2)	.693 (2)
p-value	.0001	<.0001	.1589	.7073
RMSEA	.082	.127	.050	0
CFI	.986	.986	.997	1
TLI	.974	.973	.990	1
SRMR	.027	.028	.031	.006

Note. All models were created using the WLSMV (Weighted Least Square Mean and Variance Adjusted) Estimator.

Table 5. Model fit statistics - Latent variables measurement models estimated separately

### Correlated Factors

We next estimated a correlated factors model, where our four previously-fitted latent variables were all allowed to correlate. This correlated-factors model provided a good fit to the data ( $\chi^2(161)=233.132$ ,  $p=.0002$ ,  $\text{RMSEA}=.035$ ,  $\text{CFI}=.992$ ,  $\text{SRMR}=.052$ ). Besides CCE's associations with shift ( $r=.117$ ,  $p>.05$ ) and persist ( $r=.102$ ,  $p>.05$ ), all factors were significantly positively associated with each other (significant  $r$ 's = .185-.639; see Table 6).

Fit Indices	Correlated-Factor Model			
$\chi^2$ ( <i>df</i> )	233.132 (161)			
<i>p</i> -value	.0002			
RMSEA	.035			
[90%CI]	[.025-.045]			
CFI	.992			
TLI	.991			
SRMR	.052			
<i>r</i>	(1)	(2)	(3)	(4)
Persist (1)	1			
Shift (2)	.639	1		
Civ Eng (3)	.102 ( <i>ns</i> )	.117 ( <i>ns</i> )	1	
Spir Cope (4)	.284	.301	.185	1
	Correlated-Factor Model			
1 <sup>st</sup> order factor loading	Pers	Shift	Civ Eng	Spir Cope
Persist 1	.816			
Persist 2	.800			
Persist 3	.307			
Persist 4	.875			
Persist 5	.599			
Persist 6	.420			
Persist 7	.696			
Shift 1		.794		
Shift 2		.827		
Shift 3		.729		
Shift 4		.913		
Shift 5		.700		
Civ 1			.665	
Civ 2			.858	
Civ 3			.594	
Civ 4			.947	
Spir 1				.954
Spir 2				.933
Spir 3				.707
Spir 4				.967

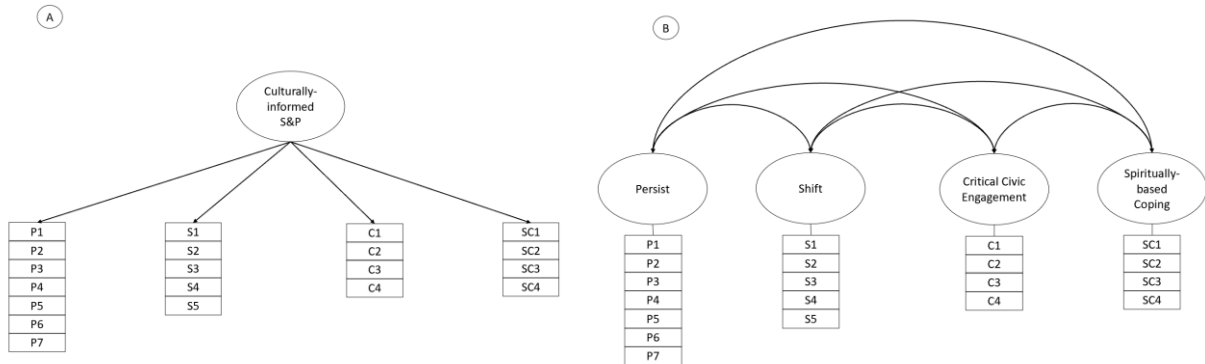
Note. Models was estimated using the WLSMV (Weighted Least Square Mean and Variance Adjusted) Estimator. All factor loadings and correlations are significant  $p < .05$  unless otherwise indicated by (*ns*). Civ Eng & Civ = Critical Civic Engagement. Spir Cope & Spir = Spiritually-based coping.

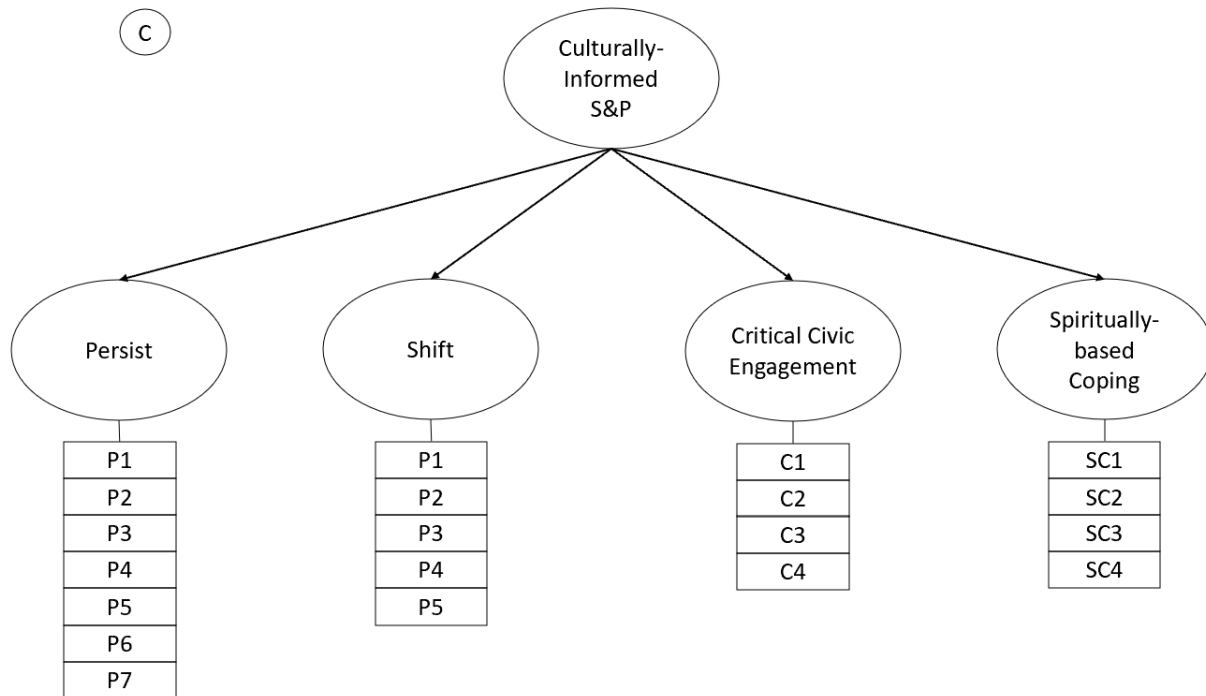
Table 6. Fit indices and factor loadings for the correlated factors model.



## Testing Competing Factor Models

After assessing the fit each latent variable individually, we tested 3 competing models that may account for our theorized relationships between the variables based on recommendations from Brunner and colleagues (2012): A 1-factor model, where all items are regressed on a single factor, the previously-outlined correlated-factors model, and a higher-order factor model, where the associations between latent variables are best explained by an unmeasured 2<sup>nd</sup>-order latent variable, culturally-informed S&P (see Figure 4 for a visual depiction of competing models).





Note. A = 1-factor model, B = correlated-factors model, C = higher-order factor model. P = persist items, S = shift items, C = critical civic engagement items, SC = spiritually-based coping items. The three reverse-scored persist items, P3, P6, and P7, were correlated due to a method effect.

Figure 4. Competing factor models.

In testing each of these competing models, good model fit was determined by the previously-mentioned indices. Based on these criteria, the 1-factor model (Model A) provided a poor fit to the data ( $\chi^2(167)=1886.137, p<.0001, RMSEA=.170, CFI=.811, SRMR=.180$ ). When compared to alternative models with WLSMV chi-square difference testing using the ‘difttest’ function in Mplus<sup>3</sup>, this model fit significantly worse than the correlated factors model ( $\Delta \chi^2(6)=450.645, p<.0001$ ) and the higher-order model ( $\Delta \chi^2(4)=417.178, p<.0001$ ). The higher-order factor model

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<sup>3</sup> Model C (higher-order factor model) is nested in Model B (correlated factor model). Additionally, both Model C and Model B are nested within Model A (single factor model; see Brunner et al., 2012 for explanation of nesting). This nesting allows for the direct comparison of these models. Nesting was confirmed using the ‘Nested is’ command in Mplus, as well as the ‘Difttest’ command, which can only be used to compare nested models.

( $\chi^2(163)=235.760, p=.0002, RMSEA=.035, CFI=.992, SRMR=.057$ ; Model C), demonstrated good and near-identical model fit to the correlated factors model (see Table 7. Model fit indices and factor loadings for models A and C.). A higher-order factor model cannot have better fit than a 1<sup>st</sup>-order factor model (Brown, 2015; Muthén, 2016), but can fit equally well, as determined by a non-significant chi-square difference test. This chi-squared difference test was indeed non-significant ( $\Delta\chi^2(2)=4.111, p=.1281$ ), indicating that these models displayed equivalent global fit. Given that our analyses do not give us cause to reject Model C, we choose to retain Model C based on our theoretical assertion that relations between 1<sup>st</sup> order factors (persist, shift, CCE, and spiritually-based coping) are best explained by culturally-informed S&P, a higher-order factor.. Asserting the existence of a higher-order factor structure also implies that culturally-informed S&P influences all 1<sup>st</sup>-order factors, meaning higher scores on culturally-informed S&P are associated with higher scores on shift, persist, CCE, and spiritually-based coping.

Model	1-Factor	Higher-Order Factor Model (Model C)				
$\chi^2 (df)$	1886.137 (167)	235.760 (163)				
<i>p</i> -value	<.0001	.0002				
RMSEA	.170	.035				
[90%CI]	[.163-.177]	[.025-.045]				
CFI	.811	.992				
TLI	.785	.991				
SRMR	.180	.057				
		2 <sup>nd</sup> order factor loading	Persist	Shift	Civ Eng	Spir Cope
		Culturally- informed S&P	.775	.819	.173	.375
	1-Factor	Higher-Order Factor Model				
1 <sup>st</sup> order factor loading		Persist	Shift	Civ Eng	Spir Cope	
Persist 1	.675	.816				
Persist 2	.678	.800				
Persist 3	.220	.307				
Persist 4	.741	.876				
Persist 5	.495	.599				
Persist 6	.326	.420				
Persist 7	.536	.696				

Shift 1	.705	.794	
Shift 2	.723	.827	
Shift 3	.622	.729	
Shift 4	.808	.913	
Shift 5	.593	.700	
Civ 1	.167		.665
Civ 2	.197		.858
Civ 3	.210		.594
Civ 4	.252		.947
Spir 1	.914		.954
Spir 2	.874		.933
Spir 3	.478		.707
Spir 4	.940		.967

Note. All models were created using the WLSMV (Weighted Least Square Mean and Variance Adjusted) Estimator. All factor loadings and correlations are significant  $p < .05$ . Civ Eng & Civ = Critical Civic Engagement. Spir Cope & Spir = Spiritually-based coping.

Table 7. Model fit indices and factor loadings for models A and C.

### Impact of Culturally-Informed S&P

After fitting our higher-order factor model, we were interested in seeing how our second-order factor, culturally-informed S&P, was associated with depressive symptoms in the context of discrimination and ERI. Consistent with other samples, discrimination was fairly uncommon ( $M=2.43$ ,  $SD=.81$ , range=1-5) and race was the most common reason participants reported experiencing discrimination (70.6%), followed by skin color (49.5%), and gender (37.6%). ERI endorsement was high ( $M=4.17$ ,  $SD=.88$ , range=1-5). The mean for depressive symptoms was 9.513 ( $SD=10.33$ , range=0-42), which falls in between the Normal (0-9) and Mild (10-13) ranges (Lovibond & Lovibond, 1995). To model associations among these variables, factor scores of culturally-informed S&P were first calculated in Mplus. Factor score approaches have been shown to perform adequately under a range of conditions and serves as a practical approach to test the impact of higher-order factors in moderation analyses (Ng & Chan, 2019). This factor score was entered as a predictor of depressive symptoms along with ERI, discrimination and their interactions (see Table 8. Standardized regression coefficients predicting depressive

symptoms and correlations between predictors (N=339).). A maximum likelihood estimator robust to non-normality was used (MLR; L. Muthén, 2011).

Variable	<i>b</i> ( <i>S.E.</i> )	<i>p</i>	95% <i>CI</i>	Correlations		
				(1)	(2)	(3)
Discrimination (1)	.200 (.053)	<.001	.095-.305	1		
Culturally-informed S&P (2)	-.389 (.051)	<.001	-.490--.288	-.027	1	
ERI (3)	-.034 (.047)	.469	-.125-.058	.121*	.250**	1
Disc * Culturally-informed S&P	-.153 (.057)	.008	-.265-.040	-	-	-
Disc * ERI	.042 (.046)	.352	-.047-.132	-	-	-
Culturally-informed S&P * ERI	.045 (.059)	.440	-.070-.161	-	-	-
Disc * Culturally-informed S&P * ERI	.079 (.060)	.189	-.076-.196	-	-	-

Note. \* =  $p < .05$ , \*\* =  $p < .001$ . Estimator = Maximum Likelihood Robust (MLR). S&P = Shift-&-persist. ERI = ethnic-racial identity.

Table 8. Standardized regression coefficients predicting depressive symptoms and correlations between predictors (N=339).

Multiple regression indicated that discrimination was associated with greater depressive symptoms ( $b=.200, p<.001, CI=.095-.305$ ). Controlling for the effects of all other variables and their interactions in the model, ERI was not associated depressive symptoms ( $b=-.034, p=.469, CI=-.125-.058$ ); however, culturally-informed S&P ( $b=-.389, p<.001, CI=-.490--.288$ ) and the interaction between discrimination and culturally-informed S&P were associated with depressive symptoms ( $b=-.153, p=.008, CI=-.265--.040$ ). Probing this interaction revealed that, while discrimination was still associated with depression at low ( $B=4.615, p<.001, CI=2.326-6.903$ ) and mean ( $B=2.619, p<.001, CI=1.281-3.957$ ) levels of culturally-informed S&P, discrimination was not associated with depression for youth high in culturally-informed S&P ( $B=.624, p=.461, CI=-1.035-2.283$ ), implying a fully-protective effect. Controlling for the effects of all other variables in the model and their interactions, the three-way interaction between discrimination,

ERI, and culturally-informed S&P was not associated with depressive symptoms ( $B=.079$ ,  $p=.189$ ,  $CI=-.076-.196$ ).

## DISCUSSION

The coping literature has not been attentive to the unique stressors faced by members of minoritized groups, nor has it sufficiently considered the unique ways these populations cope (Compas et al., 2017). Shift-&-persist is a coping strategy that has been shown to lead to positive health outcomes for low-SES individuals – many of whom are from minoritized groups (Chen & Miller, 2012). Recent work has demonstrated the efficacy of S&P in protecting against greater depressive symptoms for low-ERI Latinx youth exposed to high levels of discrimination (Christophe et al., 2019; Stein et al., under review). Given that this coping strategy is well-positioned to help youth cope with uncontrollable stressors (Chen, 2012) it is crucial to understand how culturally-informed strategies (Heppner et al., 2014) such as CCE and spiritually-based coping relate to each other and relate to S&P. Additionally, in service of addressing gaps in the mainstream coping literature, it is important to examine how culturally-informed S&P, which partially explains relations between these coping strategies, works to reduce the negative impact of discrimination.

To address these large gaps in the literature, we first identified a higher-order construct, culturally-informed S&P, that explains the previously unexplored relations between S&P, CCE, and spiritually-based coping. Overall, we found initial empirical support for the existence of culturally-informed S&P as a higher-order latent factor, demonstrating that these strategies previously thought to be independent of one another embody core tenets of S&P and may be partially subsumed under and explained by this higher-order construct. Conceptually, higher levels of culturally-informed S&P may influence higher levels of any or all of our 1<sup>st</sup>-order coping strategies depending on contextual and individual differences. Said differently, not all youth who engage in culturally-informed S&P must be civically engaged or use spiritually-based/religious coping, but embodiment of a culturally-informed S&P style of coping may manifest in youth employing any or all of these individual strategies. Uncovering the existence

of culturally-informed S&P has the potential to guide broad research on culturally-informed coping with racialized stress and subsequent study of each of culturally-informed S&P's component parts (i.e., S&P, spiritually-based coping, CCE). For instance, categorizing different coping strategies as falling under the culturally-informed S&P construct falls in line recent attempts (e.g., coping circumplex model; Stanisławski, 2019) to find conceptual commonalities between coping strategies to consolidate knowledge across previously disparate coping strategies. Understanding the connections between culturally-based coping strategies may help spur additional integrative research that aims to holistically examine factors impacting the development of minoritized youth, such as Balkaya and colleagues' (2019) examination of religious identity, socialization, and civic engagement. It may also inform theory in each of these distinct literatures. For example, our findings may suggest that CCE coupled with S&P may be related to positive mental health outcomes, as opposed to conferring risk as has been found in past studies examining CCE in isolation (Hope et al., 2018). Finally, this higher-order factor may be examined as a predictor of positive adjustment, as well as a potential moderator or mediator of the associations between discrimination and psychosocial adjustment.

After identifying this higher-order construct, we found initial support that culturally-informed S&P is associated with fewer depressive symptoms controlling for ERI and, when culturally-informed S&P is high, fully protects against the harmful impact of discrimination on depressive symptoms. This finding builds upon the literature on the first-order constructs that commonly find promotive effects but fail to find protective effects. Factors that have can fully protect against the negative impact of discrimination on psychological adjustment have been elusive. However, the current findings suggest that culturally-informed S&P coping may be enough to combat such a pernicious stressor. Indeed, and different than what has been found when looking at moderations between S&P, ERI, and discrimination with respect to depressive symptoms (Christophe et al., 2019; Stein et al., under review), is the fact that culturally-informed S&P protected against discrimination regardless of youth's ERIs, and the typically-promotive effect of ERI (Rivas-Drake et al., 2014) was not present controlling for culturally-informed S&P. Given our argument that CCE and spiritually-based coping are culturally-based coping strategies used to cope with discrimination that embody the fundamental attributes of shift-&-persist, including

these in our higher-order culturally-informed S&P construct may have contributed to greater protection than would have a measure S&P devoid of cultural context. This finding, along with the positive correlation between culturally-informed S&P and ERI ( $r=.250, p<.001$ ) points to complex relations between ERI and coping consistent with Neblett and colleagues' (2012) conceptual model.

Although our conception of culturally-informed S&P includes primarily individual manifestations of coping, it is vital to consider that, within most minoritized groups, coping rarely takes place solely on an individual level (Chandra & Batada, 2006). A review on coping with racism suggests that minoritized populations often utilize their social networks to help cope with stressful life events (Brondolo, et al., 2009). Furthermore, the family unit is often the most utilized support system by minority adolescents when facing racial-ethnic discrimination (Chandra & Batada, 2006). To truly understand the protective factors embedded within culturally sensitive S&P process, it might be necessary to explore familism values as a part of the S&P paradigm. Familism values imbue purpose in life and meaning for minoritized youth and promote positive psychosocial functioning in Latinx youth (Gonzalez et al., 2020). Expressing familism values and practicing the aforementioned coping strategies help best protect minoritized youth against the negative impacts of discrimination.

### Limitations

While this study contributes to the literature by identifying a higher-order factor partially explaining associations between previously distinct culturally-informed coping strategies, it is not without limitations. Firstly, while race was the main reason participants reported experiencing discrimination, the lack of specificity to solely race-based discrimination could be an extra source of measurement error. Next, Familism values, an important facet of coping within many minoritized communities (Gonzalez et al., 2020), theoretically falls under the S&P paradigm of coping but was not measured in this study. Future research should incorporate this factor to gain a better understanding of culturally-informed S&P. In addition to accounting for familism values, increased attention should be paid to the measurement of CCE. Generally, we



assert that more targeted measurement of true *critical* civic engagement (i.e., civic engagement explicitly in order to combat structural inequalities) may help elucidate how CCE is associated to other coping strategies and to outcomes. Also, given potential intra-individual and inter-group variation in how individuals display spiritually-based/religious coping, future work should measure specific religious affiliations to add increased nuance.

Additionally, although this study's intent was to broadly understand culturally-informed S&P and how it operates in minoritized groups, we understand that each of these coping strategies (i.e., spiritually-based coping and CCE) likely vary both in their salience and function across different cultural groups (e.g., Chapman & Steger, 2010). Indeed, it is clear that spiritual/religious identity and coping styles are both related to and embedded within cultural identity and worldview (Knight et al, 2010); future within-group work should be attentive to both the qualitative and quantitative methods necessary to fully describe and understand these processes. Similarly, a majority of our sample (85.2%) identified as female, limiting the generalizability of our findings. In addition to examining the relations between these factors within-group, future studies should aim for a more balanced sex distribution to increase generalizability of results. Ultimately, these limitations are questions of measurement invariance amount based on sociodemographic factors such as race and sex. Due to small sample sizes when separating participants by racial group (e.g., 198 Black and 81 Latinx participants), and the complexity of our model, we were, unfortunately, not able to reliably test for measurement invariance of this higher order factor model (see Appendix C for greater discussion of this issue and for tests of moderation by race for the regression paths – which assume metric/weak invariance). However, we recognize that establishing at least metric invariance across sociodemographic factors using large, well-powered samples will be necessary for continued practical applications of the culturally-informed S&P construct.

## CONCLUSIONS

The mainstream coping literature has not attended to the unique stressors and unique coping strategies present in minoritized communities. This study provided conceptual evidence for

connections between three previously discrete coping strategies: S&P, CCE, and spiritually-based coping, then tested how well associations between these strategies represent a previously unidentified coping construct: culturally-informed S&P. After identifying the existence of this higher-order construct, we that culturally-informed S&P promoted fewer depressive symptoms as a main effect and high levels of culturally-informed S&P protected against greater depressive symptoms when youth faced discrimination. Additional research on culturally-informed S&P may help the field develop a more nuanced understanding of how minoritized youth cope with discrimination. Indeed, our results suggest that, when trying to understand S&P coping in the context of discrimination and identity, including culturally-based strategies that behaviorally represent S&P such as spiritually-based coping and CCE are necessary for a full understanding of shift-&-persist style coping and its potentially-promotive and protective effects.

## CHAPTER IV: PATTERNS OF EFFECTIVE CULTURALLY-INFORMED COPING WITH DISCRIMINATION: A PERSON-CENTERED APPLICATION

### INTRODUCTION

#### Discrimination & Psychological Functioning

Discrimination has always been and is increasingly being recognized as a pernicious stressor and direct risk for negative psychosocial functioning among those from marginalized groups – particularly racially minoritized youth (Benner et al., 2018). Discrimination broadly refers to unfair treatment and the denial of equality based on perceived group membership (Coll et al., 1996), and may be delivered based on one’s membership in one group (e.g., Asian) or an intersection of groups (e.g., Black\*female). Regardless of attribution, discrimination has consistently been associated with poor psychological functioning in childhood and adolescence (Benner et al., 2018; Yip et al., 2019) as well as in adulthood (Williams & Mohammed, 2009). These effects are, unfortunately, observed both cross-sectionally and longitudinally controlling for earlier levels of psychological functioning (Schmitt et al., 2014). Given the wide-ranging risks of discrimination and its long-lasting effects, scholarship has increasingly focused on trying to identify resilience factors endemic within marginalized communities that may protect individuals against the negative impact of discrimination.

One of the factors most commonly proposed to protect minoritized youth has been ethnic-racial identity (ERI), a multidimensional construct broadly referring to the beliefs and attitudes one holds surrounding their ethnic-racial group membership (Umaña-Taylor et al., 2014). ERI has been shown to promote psychosocial wellbeing in ethnically and racially-minoritized youth (Rivas-Drake et al., 2014). It has also been a fruitful intervention target, as increases in ethnic-identity exploration resulting from a school-based intervention targeting ERI exploration were associated with increased resolution (i.e., understanding what race/ethnicity means to you; Douglass & Umaña-Taylor, 2015), global identity, and then with downstream increases in self-

esteem and decreases in depressive symptoms a full year after the intervention (Umaña-Taylor et al., 2018).

Despite these promising findings, however, recent meta-analytic work by Yip and colleagues (2019) suggests that, although ERI promotes positive psychological functioning as a main effect when taking into account discrimination, no dimension of ERI reliably *protects* against (i.e., moderates; Masten et al., 2009) discrimination's harmful effects on psychological functioning. These findings, in concert with several complementary models of resilience amongst minoritized youth (Neblett et al., 2012; Spencer et al., 1997), imply that multiple promotive and protective factors are likely needed for youth to effectively combat racial stressors. Stated differently, ERI, while very important, is not the only resilience factor available to and used by minoritized youth. Thus, it is important to examine factors in conjunction with ERI when trying to understand how and under what conditions marginalized youth demonstrate resilience when experiencing high levels of discrimination.

### The Shift-&-Persist Paradigm of Coping

Scholars have urged for a re-examination of coping with increased attention to the nature of stressors (e.g., controllability, permanence, and racialized aspect of stressors, etc.), as well as increased attention to how culture may influence the strategies one uses and the efficacy of those strategies (Heppner et al., 2014). Shift-&-persist (S&P) coping has emerged as one set of coping strategies that may be particularly efficacious in protecting low-SES and minoritized youth against the negative effects of uncontrollable (Chen & Miller, 2012) and racialized stress (Christophe et al., 2019). S&P coping broadly involves the reappraisal and acceptance of uncontrollable stressors (shift) combined with optimism and endorsement of meaning and purpose in life in the context of this stress exposure (Chen & Miller, 2012). Originally outlined as an effective way for low-socioeconomic status youth to combat the chronic, largely-uncontrollable stressor of poverty, shifting and persisting allows individuals to mold themselves to respond to the unfortunate demands of their environment (i.e., secondary control coping; Lazarus & Folkman, 1984). This general style of coping may, logically, be more appropriate

when faced with uncontrollable stressors compared to ways of coping where individuals are inevitably unsuccessful in changing an environment over which they truly have little control. In empirical work, S&P has consistently been shown to be protective (i.e., reducing the negative impact of poverty) in the context of numerous health outcomes such as BMI (Kallem et al., 2013), inflammation (Chen et al., 2013; Chen et al., 2015), allostatic load (Chen et al., 2012) and asthma impairment (Lam et al., 2018).

More recent research has begun to demonstrate that S&P coping functions as a protective factor not only in the context of uncontrollable, poverty-related stress, but also in the context of discrimination. Using the term ‘unfair treatment’, but truly assessing discrimination via Williams et al.’s (1997) Everyday Discrimination Scale, Lam et al. (2018) found that youth (50% non-White) who faced greater unfair treatment were protected against worse asthma profiles. More recently, research on shift-&-persist has also extended past health outcomes to the study of ethnic-racial discrimination and depression in samples of Latinx youth (Christophe et al., 2019; Stein et al., under review). These studies broadly found that Latinx youth lower in ERI were protected against discrimination if they endorsed high levels of S&P coping. By contrast, discrimination was equally, positively associated with depressive symptoms for high ERI youth regardless of their level of S&P coping (Christophe et al., 2019).

While S&P coping appeared to be protective against discrimination for low-ERI youth exposed to discrimination, it is equally important to understand the coping factors that may be protective for high ERI youth. Factors and ways of coping that are informed by minoritized individual’s ERI’s, cultural values, and traditions have been hypothesized to be particularly effective in protecting individuals against discrimination (Heppner et al., 2014). Given the uncontrollable nature of discrimination (e.g., youth do not have any direct and immediate control over their exposure to interpersonal, cultural, and institutional racism), it is still plausible that specific ways coping consistent with the core features shift-and-persist will serve to protect youth. In particular, culturally-congruent coping factors that foster reappraisal and acceptance of stressors as uncontrollable and allow for youth to maintain optimism and purpose in life may be important for high ERI youth. Because of the importance of race and ethnicity to their sense of self, high

ERI youth may be drawn towards coping mechanisms such as critical civic engagement (see Hope & Spencer, 2017 for conceptualization of civic engagement through a coping lens) and spiritually-based/religious coping, as well as values such as familism that may orient youth shift away from discrimination stress and persist through family-level, collectivistic coping (Chandra & Batada, 2006). Not only have these behaviors and values, all rooted in racial/ethnic resistance and thriving, been implicated as potential cultural protective factors in their own right, they may also represent ways in which youth embody the core components of shift-&-persist.

Critical civic engagement involves performing civically-engaged actions as a direct way of coping with systemic inequalities (Hope & Spencer, 2017) and may involve a reappraisal and acceptance of interpersonal discrimination as stemming from unequal social systems, combined with a sense of optimism and purpose through working to create eventual civic and social change. Positive religious/spiritually-based coping, is a construct capturing the ways in which individuals cope by tapping into their spiritual/religious beliefs as a way of finding comfort, meaning, and control in their lives (Pargament et al., 2000). Individuals who use religious coping may, similarly, reappraise and accept uncontrollable stress as part of forces beyond their control (God's will/plan or the plan of 'evil' forces that they should not allow themselves to dwell on), then maintain a sense of optimism and purpose in life despite exposure to uncontrollable stress through their relationship with a higher power and their faith community. Finally, familism values are cultural values commonly held by members of minoritized groups centering around an interdependent construal of the self and an orientation towards supporting and attending to the needs of the family before one's own needs (Stein et al., 2014). Marginalized youth may express their familism values through an orientation towards providing and receiving familial support after exposure to racialized stressors such as discrimination (Martin Romero et al., in press). The endorsement of familism values, while not a coping 'strategy' per se, may help youth shift away from uncontrollable stressors and derive meaning and purpose from the support provided by the family unit (Kiang, 2012). Stated differently, familism value endorsement, through familial obligation and support, may serve as a foundation for coping with discrimination stress at the family that embodies the key components of shift-&-persist. Indeed, exposure to discrimination has been shown to predict later increases in Mexican American values (i.e., familism values +

religiosity), and these values have been shown to indirectly reduce the harmful impact of discrimination on youth internalizing symptoms (Berkel et al., 2010).

Civic engagement, religious coping, and the endorsement of familism values, therefore, may serve two functions implicated in wellbeing in the face of racialized stress. First, these factors may, in different ways, embody the core components of S&P-style coping (i.e., shifting away from stressors and persisting through them through finding meaning and purpose). Secondly, these factors come from the cultural beliefs and traditions of marginalized groups, which may make them particularly effective, and desirable assets to call upon when faced with racialized stressors (Heppner et al., 2014). To date, however, only one study has empirically tested the associations between shift, persist, and related culturally informed coping factors. In a sample of 364 minoritized emerging adults, Christophe et al. (in press) found evidence for an underlying coping factor, called *culturally-informed S&P*, that explained associations between shift, persist, critical civic engagement, and spiritually-based coping. Individuals who were higher on culturally-informed S&P, this underlying coping factor, reported lower levels of depressive symptoms and were protected against the negative effects of discrimination regardless of youths' level of ERI endorsement. While this was the first study to examine associations between S&P and culturally informed coping factors, this study did not examine the relations between these factors and familism values, whose expression may also be related to the core components of shift-&-persist (Christophe & Stein, under review). Additionally, examining the impact of a latent factor comprised of these coping factors on discrimination and the association between discrimination and depression does not speak to the presence, frequency, and efficacy of different patterns of coping and values youth may be relying on to combat discrimination. Because minoritized youth may display any or all of these values and ways of coping with different frequencies, it is also important to understand what patterns of these factors individuals may be using, as well as whether certain patterns are more effective than others in protecting low and high ERI youth against discrimination.

### Adding a Person-Centered Perspective

Applied to coping, ‘person-centered’ approaches such as latent class analysis (LCA) and latent profile analysis (LPA) broadly allow researchers to identify unobserved, or latent, sub-groups within the data who are similar to those in the same group and different than those in other groups with respect to the types of coping they employ. In addition to identifying individuals’ distinct patterns of coping, researchers may investigate whether certain factors (e.g., sociodemographics) predict individuals displaying one pattern of coping versus another, as well as whether associations between predictors and outcomes of interest differ based on an individual’s pattern of coping. For instance, Aldridge and Roesch (2008), who used LPA to identify profiles of coping in a diverse sample of 354 adolescents (2.3% White) using 13 coping styles from the COPE (Carver et al., 1989) identified a profile of infrequent copers (labeled *Low Generic Copers*), A profile of *Active Copers*, and a profile of copers (labeled *Avoidant Copers*), who relied on avoidance coping and substance use to cope with stress. Low Generic Copers endorsed less depression than Avoidant Copers but less stress-related growth than did Active Copers. In another study examining profiles of coping with discrimination over time amongst Latinx adolescents, McDermott et al. (2019) observed three profiles: a *Proactive*, a *Confrontative*, and a *Passive & Moderately Proud* profile. Again, the authors found evidence that individuals in these profiles differed with respect to psychological functioning, as those in the *Proactive* profile endorsed the greatest levels of self-esteem over time. The authors also observed that youth who experienced more discrimination were more likely to be in the *Proactive* or *Confrontative* coping profiles (McDermott et al., 2019). Together, these studies using person-centered analyses to examine coping in marginalized youth both show that youths’ coping patterns relate to psychological functioning and show that one’s pattern of coping may be associated to one’s experiences of discrimination. Future work, however, must extend past these findings to examine whether the linkages between discrimination and youth’s psychological functioning are different (i.e., stronger or weaker) based on their coping profile membership.

Based on prior variable-centered work on the S&P construct (Christophe et al., 2019; in press), S&P coping and its related culturally-informed values and ways of coping may, depending on



context, have the ability to specifically protect youth against depressive symptoms resulting from exposure to discrimination. Aldridge and Roesch (2008), in their person-centered analysis, show more broadly that those who have more related ways of coping with stress may endorse less depressive symptomatology. While these lines of inquiry are indispensable in helping us understand the factors implicated in resilience among marginalized youth, adaptive psychological functioning is not measured only by the absence of psychopathology (i.e., fewer depressive symptoms). It is important to examine ‘positive’ outcomes (e.g., McDermott et al., 2019 examining self-esteem) to understand the positive impacts of effective coping on aspects of wellbeing. In the current study, we examine depressive symptoms and environmental mastery, a dimension of psychological wellbeing relating to individual’s perceived agency and control over their environment (Ryff & Keyes, 1995), to gain a more well-rounded understanding of how patterns of coping with discrimination impact greater positive and less negative adaptation in the face of racialized stress.

### Measurement Invariance and Differential Item Functioning

When examining factors such as shift, persist, civic engagement, religious coping, and familism, it is possible that frequency or levels of endorsement systematically differ based on important covariates such as race, gender, and age. These systematic differences may be observed in the mean (e.g., females tend to score higher on familism than do males) or variance of a factor, called mean and variance impact (Curran et al., 2014). In addition, differences can be observed with the level of the item intercept (e.g., females who are at the same mean level of familism as males tend to score higher on item four) or item factor loading – called differential item functioning (DIF; Bauer, 2017). Assessing for potential measurement invariance and DIF, and adjusting for it if it is present, allows one to more reliably compare constructs of interest across various groups (Meitinger et al., 2020). Moderated nonlinear factor analysis (MNLFA) is a newly-developed technique that allows one to examine mean impact, variance impact, and differential item functioning based on multiple covariates, which may be categorical or

continuous<sup>4</sup>, simultaneously (Curran et al., 2014). By testing for any observed impact and DIF among our coping factors of interest, we may create scores adjusted for these systematic differences and measurement artifacts. When examining patterns of coping in our LPA, patterns of coping may be reliably compared between profiles because all coping scores will have been adjusted for any differences due to numerous, potentially-meaningful covariates such as age, gender, race, and SES.

### Current Study & Hypotheses

The current study aimed to utilize the strengths of person-centered analyses to examine whether minoritized youth endorse different patterns of coping and value endorsement<sup>5</sup>, whether relevant sociodemographic factors and ERI endorsement impacts these patterns, and, finally, whether certain patterns of coping factors better protect against the effects of discrimination than others. However, prior to conducting our LPA, we utilized MNLFA to examine mean impact, variance impact, and DIF in our coping factors (shift, persist, civic engagement, religious coping, and familism values) based on a multitude of covariates (e.g., age, level of schooling, race, gender, SES, age\*race), then adjust for any impact and DIF so that our scores on each coping factor used in the LPA were adjusted for any systematic differences in coping frequency based on these covariates. After adjusting for invariance and differential item functioning of our profile predictors, we hypothesized that multiple profiles, or patterns, of coping factors will exist, with at least one profile characterized by high use of a majority of coping factors and one profile characterized by infrequent use of all the aforementioned factors. We also hypothesized that minoritized youth higher in ERI will be more likely to be in profiles characterized by frequent

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<sup>4</sup> The ability to simultaneously test for impact and DIF among multiple covariates and the ability to examine differences based on categorical covariates, continuous covariates, and interactions between covariates constitute some of the main strengths of MNLFA compared to more traditional multi-group confirmatory factor analysis and multiple-indicator multiple-cause models. We refer interested readers to Curran et al., 2014 and Bauer, 2017 for more detailed explanation of these models and their relations to other methods of testing invariance and DIF.

<sup>5</sup> For brevity and because they all have implications for how individuals respond and react to racialized stressors, we refer to these ways of coping (shift, persist, civic engagement, religious coping) and familism value endorsement collectively as ‘coping factors’.

use of many of these related coping factors. Finally, we hypothesized that the association between discrimination and our outcomes of interest will be nonsignificant for those in profiles characterized by more flexible (i.e., high frequency across many related factors) coping. These nonsignificant associations would imply that individuals in these profiles are protected against the negative impacts of discrimination whilst those in other profiles where this effect was significant were not protected.

## METHOD

### Participants & Procedure

Participants were 694 racially and ethnically-minoritized youth ( $M_{age} = 17.24$ ,  $SD = 1.91$ , 73.5% female, 1.7% non-binary) recruited from two samples: an adolescent sample aged 13-17 recruited through Qualtrics Panel ( $N = 367$ ) and a sample of emerging adults aged 18-25 recruited through the psychology pool at a large southeastern public university ( $N = 327$ ). A majority of participants self-identified themselves as from the middle (41.5%), lower middle (24.4%), and working classes (20.0%). Forty-six percent of participants (46.1%) self-identified as monoracial Black or African American, whereas 21.6% identified as Latinx, 12.4% identified as Asian, and 3.3% as another race (e.g., Native Hawaiian, Native American, Middle Eastern). Participants who selected more than one option on our race/ethnicity question were classified as Multiracial/Multiethnic (16.6% of the sample). Participants from the college sample were less likely to identify as Asian ( $t(692) = 3.163$ ,  $p = .002$ ; 16% in adolescent sample and 8% in college sample) or Latinx ( $t(692) = 2.897$ ,  $p = .004$ ; 26% adolescent, 17% college) and more likely to identify as female ( $t(692) = -2.864$ ,  $p = .004$ ; 69% adolescent, 79% college) and Multiracial/Multiethnic ( $t(692) = -2.839$ ,  $p = .005$ ; 13% adolescent, 21% college). Samples did not differ with respect to SES ( $t(692) = -0.618$ ,  $p = .537$ ), non-binary gender identification ( $t(692) = 1.581$ ,  $p = .114$ ), or 'other' race identification ( $t(692) = -.083$ ,  $p = .934$ ).

Parent informed consent and participant assent was obtained from the adolescent sample. Informed consent was directly obtained from the emerging adult sample. After the informed

consent process, all participants completed an online survey through Qualtrics assessing aspects of psychological functioning, coping, identity, and discrimination experiences. Those from the adolescent sample were compensated through their respective Qualtrics Survey Panels, while those from the emerging adult sample received research credit for their participation. Study procedures for both the adolescent (#21-0203) and emerging adult (#20-0010) sample were approved by the IRB.

### Measures

#### SHIFT & PERSIST

Shift and persist was assessed using Lam and colleagues' (2018) 13-item S&P scale, which contains 6 shift and 7 persist items. Participants responded to sample items such as "When something stressful happens in my life, I think about the positive aspects, or the good that could come from the situation" for shift and "I am able to see the good things in my life" for persist on a 4-point scale from 1 (*not at all*) to 4 (*a lot*). Higher values indicated greater use of shift/persist. In a diverse sample of college students, reliabilities for shift and persist were 0.75 and 0.85, respectively (Christophe et al., in press). In our sample of minoritized adolescents and emerging adults, reliability was 0.87 for shift and 0.76 for persist.

#### RELIGIOUS COPING

Religious/spiritually-based coping was assessed by the 7-item positive religious coping subscale of the Brief RCOPE (Pargament et al., 2011). Participants are asked, when they cope with problems in their life, if they "sought God's love and care" and "tried to put my plans into action together with God." Participants responded on a 4-point scale from 0 (*not at all*) to 3 (*a great deal*), with higher scores indicating greater religious coping. Across 11 studies of various sociodemographic backgrounds referenced in Pargament et al. (2011) using the positive religious coping subscale, median reliability was 0.92. Reliability in our sample was 0.96.

## CIVIC ENGAGEMENT

Civic engagement was assessed by the 5-item critical action subscale of the Short Critical Consciousness Scale (ShoCCS; Diemer et al., 2020). Participants indicate how often in the past year they had performed civic actions such as joining in a protest or march and participating in a human/gay/women's rights group on a 1 (*never did this*) to 5 (*at least once a week*) scale. Higher values indicated more frequent civic engagement. Reliability of this subscale was 0.78 (measured by omega total) in a sample of diverse youth (Diemer et al., 2020) and 0.87 in our sample.

## FAMILISM VALUES

Familism value endorsement was assessed using the attitudinal familism scale (Lugo Steidel & Contreras, 2003). Items such as "A person should rely on his or her family if the need arises" were rated on a 10-point scale from 1 (*strongly disagree*) to 10 (*strongly agree*), with higher scores indicative of greater familism values. This scale has been used across minoritized groups, displaying reliabilities of .84 among a diverse sample of middle schoolers (Chiang et al., 2019). Because unidimensionality is required to testing invariance and DIF using MNLFA (Bauer, 2017), we conducted a series of exploratory and confirmatory factor analyses that resulted in a reliable ( $\alpha = 0.849$ ), 10-item measure of familism values from Lugo Steidel and Contreras's (2003) original 18-item scale (see Table S4 in Appendix D).

## DISCRIMINATION

Discrimination was assessed using the 9-item Everyday Discrimination Scale (Williams et al., 1997). Participants indicated how frequently in their daily life "people act as if they think you are dishonest" and "you are treated with less respect than other people are" on a 6-point scale from 1 (*never*) to 6 (*almost every day*). Greater values indicate more frequent discrimination. This scale yielded a reliability of .90 in a past study of discrimination and S&P (Christophe et al., in press). Reliability in our sample was 0.89. Participants also reported one or more reasons they believed

they faced discrimination. Participants identified a majority of discrimination as race-based (64.3%), followed by gender-based (42.7%), and skin-tone based (40.3%).

#### ETHNIC-RACIAL IDENTITY

Ethnic-racial identity was assessed by averaging the 4-item centrality and the 4-item private regard subscales of a version of the Multidimensional Inventory of Black Identity (MIBI; Sellers et al., 1998) that has been adapted for use across ethnic-racial groups. Participants responded to items such as “I am happy that I am a member of my ethnic group” (private regard) and “in general, being a part of my ethnic group is an important part of who I am” on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher scores indicated greater ethnic-racial identity endorsement. The centrality and private regard subscales have been highly correlated and combined in past work examining identity along with the S&P construct (Christophe et al., 2019; Christophe et al., in press) as well as in other work on identity (Kiang & Witkow, 2018). Past reliability in a sample of 175 Latinx adolescents was 0.92, and reliability in our current sample was 0.95.

#### DEPRESSIVE SYMPTOMS

Depressive symptoms were assessed using the 7-item depression subscale of the Depression, Anxiety, and Stress Scale (DASS-21; Lovibond & Lovibond, 1995). Participants will be asked, over the past week, the degree to which statements such as “I felt down-hearted and blue” and “I felt that life was meaningless” on a 0 (*did not apply to me at all*) to 3 (*applied to me very much or most of the time*). Scores will be summed then multiplied by two consistent with the DASS-21 scoring manual (Lovibond & Lovibond, 1995). This scale has produced a reliability of 0.897 in a sample of diverse college students (Christophe et al., in press) and 0.91 in our sample of minoritized adolescents and emerging adults.

## ENVIRONMENTAL MASTERY

Environmental mastery, a dimension of psychological wellbeing related to one's perceived ability to manage one's environment and life, was assessed using the 3-item environmental mastery subscale of Ryff & Keyes's (1995) Scales of Psychological Wellbeing. On a 1 (*strongly disagree*) to 7 (*strongly agree*) participants indicated the degree to which they agreed with statements such as "In general, I feel I am in charge of the situation in which I live." Scores were averaged such that higher values indicate greater environmental mastery. Reliability estimates in our sample were 0.45 for environmental mastery. This Cronbach's alpha, while low, is similar with those from numerous independent samples (Crouch et al., 2017). Given this low reliability, results referring to environmental mastery should be treated with caution.

## RESULTS

### Initial Descriptive Statistics

Before conducting MNLFA latent profile analysis, we examined means and correlations between summary scores of key study variables. Although subsequent analyses will utilize factor scores of shift, persist, civic engagement, religious coping, and familism, which are approximate scores on latent factors (Ng & Chan, 2020) that are not equivalent to mean scores, these descriptives were conducted to gain a broad sense of relations among study variables (see Table 9). Most constructs subsequently examined using MNLFA and entered in our latent profile analysis were positively correlated, except for civic engagement, which was unrelated to shift ( $r = -.041, p = .281$ ) and religious coping ( $r = .000, p = 1$ ) and negatively related to familism ( $r = -.078, p = .040$ ). On average, youth reported 14.27 depressive symptoms ( $SD = 11.722$ ), which falls above the 14 symptoms cutoff signifying 'Moderate' symptom severity. The mean score for environmental mastery was 4.221 ( $SD = 1.164$ ) on a 7-point scale.

Variable	M (S.D.)	Range	Correlations									
			1.	2.	3.	4.	5.	6.	7.	8.	9.	
1. Shift	2.938 (0.712)	1 - 4	1									
2. Persist	2.932 (0.618)	1 - 4	<b>.514</b>	1								
3. Civic Engagement	1.722 (0.877)	1 - 5	-.041	<b>-.132</b>	1							
4. Religious Coping	2.780 (1.081)	0 - 3	<b>.285</b>	<b>.283</b>	.000	1						
5. Familism	6.601 (1.708)	1 - 10	<b>.275</b>	<b>.251</b>	<b>-.078</b>	<b>.360</b>	1					
6. Ethnic-racial identity	3.900 (1.037)	1 - 5	<b>.228</b>	<b>.281</b>	-.020	<b>.238</b>	<b>.305</b>	1				
7. Discrimination	2.419 (0.865)	1 - 6	-.020	<b>-.192</b>	<b>.377</b>	<b>.084</b>	-.015	<b>.098</b>	1			
8. Depressive symptoms	14.27 (11.722)	0 - 42	<b>-.298</b>	<b>-.608</b>	<b>.257</b>	<b>-.119</b>	<b>-.153</b>	<b>-.113</b>	<b>.299</b>	1		
9. Environmental Mastery	4.221 (1.164)	1 - 7	<b>.329</b>	<b>.478</b>	<b>-.088</b>	<b>.167</b>	<b>.136</b>	<b>.114</b>	<b>-.172</b>	<b>-.453</b>	1	

*Note.* Shift, persist, civic engagement, religious coping, and familism values are mean scores that have not yet been adjusted for impact and differential item functioning via moderated nonlinear factor analysis. Bolded values are significant at  $p \leq .05$ .

Table 9. Means and correlations among key study variables (N = 694).

### Moderated Nonlinear Factor Analysis

#### DIMENSIONALITY OF PROFILE INDICATORS

Prior to running MNLFAs, we first conducted confirmatory factor analyses to assess the fit and unidimensionality of our indicators. Establishing the unidimensionality of a factor is needed before a MNLFA may be reliably conducted (Bauer, 2017). Confirmatory factor analyses for shift, persist, critical civic engagement, and spiritually-based coping generally demonstrated adequate model fit and were, more importantly, deemed to be unidimensional (see Table S5 in Appendix D). As previously, stated, exploratory and confirmatory factor analyses were conducted to obtain a unidimensional, 10-item measure of familism values that provided an adequate fit to the data.



## MEAN IMPACT, VARIANCE IMPACT, AND DIFFERENTIAL ITEM FUNCTIONING

After establishing unidimensionality amongst our factors of interest, we proceeded to conduct an MNLFA for each factor using the aMNLFA (automated moderated nonlinear factor analysis) package in *R* (Gottfredson et al., 2019). While we refer readers to Gottfredson et al. (2019) for a comprehensive explanation of the steps and decision rules used when running aMNLFA, this automated process, briefly, involved estimating numerous models examining how, parameter by parameter, estimating potential impact and DIF led to changes in model fit, sequentially trimming nonsignificant parameters whilst using the Benjamini Hochberg procedure to correct for multiple tests<sup>6</sup>, then creating factor scores adjusting for all impact and DIF. This process was repeated for each of our five factors.

We examined mean impact (i.e., systematic differences in mean scores based on covariates), as well as intercept and loading DIF (i.e., systematic differences based on covariates in item intercepts and factor loadings despite equal levels of the latent factor; Curran et al., 2014), based on age (grand mean centered at 17.24 to aid in interpretation), race (dummy coded such that the reference group of the variables ‘Asian’, ‘Latinx’, ‘Multiracial/Multiethnic’ and ‘Other’ referred to Black participants), SES, College (dummy coded where 1 = college sample to account for potential differences between our samples not solely attributable to age), the interaction between age and race, and the interaction between sample and race. Based on recommendations by Gottfredson et al. (2019) to not test for variance impact based on interactions without strong theoretical rationale, we did not include interaction terms when assessing variance impact (i.e., systematic differences in factor variance). Because our goal was to obtain factor scores on each factor adjusted for all observed invariance and DIF to use as indicators in a latent profile analysis, and because indicators in LPA are specified and typically assumed to be uncorrelated with each other within each class (von Eye & Bogat, 2006; Wang & Wang, 2019), we do not account for invariance of covariances between factors.

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<sup>6</sup> Gottfredson et al.’s (2019) automated protocol trims non-significant paths using the Benjamini Hochberg procedure with a false discovery rate at 5%

Examining impact and DIF by factor (see Table 10), older youth ( $\hat{\alpha} = 0.13, p < .001$ ), higher SES youth ( $\hat{\alpha} = 0.09, p = .018$ ), and Asian youth ( $\hat{\alpha} = -0.31, p = .017$ ) endorsed higher levels of shifting. There was also a significant interaction predicting shift mean impact where Latinx youth endorsed less shifting as age increased relative to Black youth ( $\hat{\alpha} = -0.11, p = .035$ ). Non-binary youth endorsed lower levels of persist compared to males ( $\hat{\alpha} = -0.78, p = .016$ ). While critical action generally increased with age ( $\hat{\alpha} = 0.10, p = .019$ ), youth in our college sample endorsed less frequent civic engagement than those in the adolescent/grade school sample ( $\hat{\alpha} = -0.54, p < .001$ ). Non-binary youth endorsed greater levels of civic engagement ( $\hat{\alpha} = 0.82, p = .011$ ). Finally, there was an interaction between age and Multiracial/Multiethnic status such that, as age increased, Multiracial/Multiethnic youth were less civically engaged compared to monoracial Black youth ( $\hat{\alpha} = -0.19, p = .023$ ). Mean impact for religious coping was observed such that nonbinary ( $\hat{\alpha} = -1.20, p < .001$ ), and Asian youth ( $\hat{\alpha} = -0.47, p < .001$ ) demonstrated lower levels of religious coping. Examining impact for familism, Latinx ( $\hat{\alpha} = 0.30, p = .003$ ) and ‘Other’ race ( $\hat{\alpha} = 0.61, p = .009$ ) youth demonstrated greater endorsement of familism than did Black youth. Non-binary youth scored lower on familism compared to males ( $\hat{\alpha} = -0.78, p = .017$ ). DIF was also observed where Asian youth, compared to Black youth at the same underlying level of familism, scored systematically higher on familism item two ( $\hat{\alpha} = 0.14, p = .001$ , *the family should control the behavior of children younger than 18*). Older youth demonstrated higher endorsement of item ten ( $\hat{\alpha} = 0.139, p < .001$ , *a person should often do activities with his or her immediate and extended families, for example, eat meals, play games, or go somewhere together*). No variance impact or item loading DIF was observed for any of our factors and items.

Reference Parameter	Value	Covariate effect								
		Age	College Sample	Non-binary	SES	Asian	Latinx	Other Race	Latinx* Age	Multi * Age
<b>Shift</b>										
Mean	0.00	0.13 (0.04)	-	-	0.09 (0.04)	-0.31 (0.13)	-	-	-0.11 (0.05)	-
Variance	1.00	-	-	-	-	-	-	-	-	-
<b>Persist</b>										
Mean	0.00	-	-	-0.78 (0.32)	-	-	-	-	-	-
Variance	1.00	-	-	-	-	-	-	-	-	-
<b>Critical Action</b>										
Mean	0.00	0.10 (0.04)	-0.54 (0.15)	0.82 (0.32)	-	-	-	-	-	-0.19 (0.08)
Variance	1.00	-	-	-	-	-	-	-	-	-
<b>Religious Coping</b>										
Mean	0.00	-	-	-1.20 (0.30)	-	-0.47 (0.12)	-	-	-	-
Variance	1.00	-	-	-	-	-	-	-	-	-
<b>Familism</b>										
Mean	0.00	-	-	-0.78 (0.32)	-	-	0.30 (0.10)	0.61 (0.23)	-	-
Variance	1.00	-	-	-	-	-	-	-	-	-
Fam2 Intercept	6.56	-	-	-	-	-0.88 (0.26)	-	-	-	-
Fam10 Loadings	1.26	-	-	-	-	-	-	-	-	-
Fam10 Intercept	6.90	0.14 (0.04)	-	-	-	-	-	-	-	-
Fam10 Loading	1.61	-	-	-	-	-	-	-	-	-

*Note.* Beyond factor means and variances, which were set to 0 and 1, respectively, for identification purposes, only items displaying intercept or loading differential item functioning (DIF) are displayed. All impact and DIF estimates presented are significant at  $p < .05$ . Age is centered at the grand mean of 17.24. Latinx and Other race are dummy-coded, with Black as the reference group. Columns for Female, Multiracial, Asian\*Age, and Other\*Age are not displayed, as no impact of DIF was observed based on these covariates or interactions.

Table 10. Parameter estimates from independent moderated nonlinear factor analysis models (N = 694).Latent Profile Analysis

In addition to automating the process of conducting MNLFA, the aMNLFA package also produces factor scores, or scores on each latent factor which have been adjusted for all existing impact and DIF. These adjusted factor scores for shift, persist, critical action, religious coping, and familism values were then entered as indicators of a latent profile analysis using *Mplus* version 8.5. A combination of lower and progressively smaller declines in the Akaike Information Criteria (AIC), Bayesian Information Criteria (BIC), and sample size adjusted BIC (SSABIC), as well as a significant Lo-Mendel Rubin Likelihood Ratio test (LRT) were used as indicators of good model fit. The LRT specifically tests whether a solution with  $k$  number of

profiles fits better than a solution with  $k-1$  profiles (Nylund et al., 2007). While not used in determining the optimal number of classes, we also report model entropy, a measure of how accurately individuals were classified into profiles. Acceptable values of entropy are those greater than 0.80 (B.O. Muthén, 2008).

Number of Profiles	AIC	BIC	Sample Size Adjusted BIC	LRT	LRT $p$ -value	Entropy
2	9251.831	9324.510	9273.707	417.690	< 0.001	.868
<b>3</b>	<b>9055.829</b>	<b>9155.763</b>	<b>9085.909</b>	<b>202.835</b>	<b>&lt; 0.001</b>	<b>.901</b>
4	8974.944	9102.133	9013.228	151.479	0.210	.889
5*	8867.909	9022.353	8914.397	116.078	0.0559	.830

*Note.* Fit indices for the final profile solution are bolded. \* = 5-profile solution required a large (4X) increase in the number of random starting values for the model to converge, which is a potential indicator of a poorly specified model.

Table 11. Model fit indices for competing latent profile models.

Based on these model selection criteria, a three-profile solution was judged to best fit the data (see Table 11 for model fit indices). The first and largest profile consisted of *Flexible Copers* ( $N = 322$ , 46.4%), who used greater than average amounts of shifting and persisting, endorsed higher than average familism, and used far more frequent than average religious coping (see Figure 5 for visual depiction of profiles using standardized factor score values). The second profile ( $N = 214$ , 30.8% of the sample) was characterized by scores across most coping indicators near the sample mean. Individuals in this profile were, thus, referred to as *Average Copers*. The third profile consisted of *Infrequent/Non-religious Copers* ( $N = 158$ , 22.8%), who very infrequently employed religious coping, endorsed near-mean levels of critical action, and endorsed lower than average levels of shift, persist, and familism. Notably, all profiles seemed to endorse near mean levels of critical action.

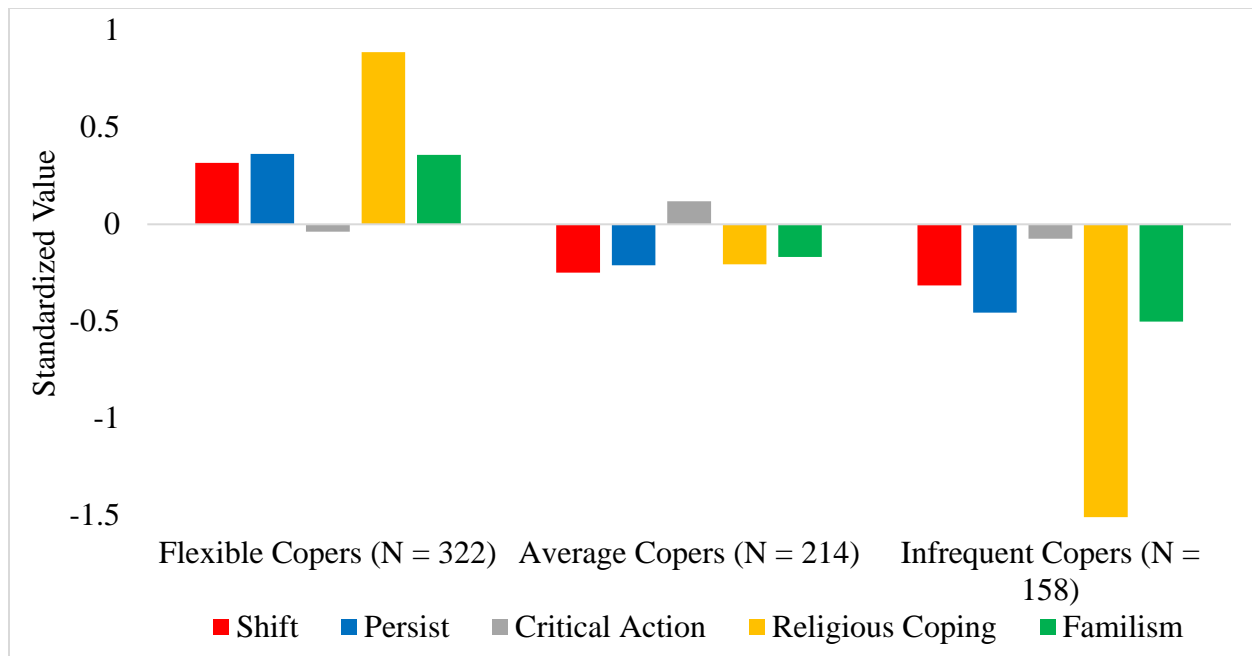


Figure 5. Graph of latent profile indicator factor scores (N = 694)

Multinomial logistic regressions were then run using the *R3Step*<sup>7</sup> procedure in *Mplus* (Asparouhov & Muthén, 2014) to examine whether profile membership differed based on levels of ERI endorsement. Based on recommendations from Bengt Muthén (2020) regarding odds ratio (OR) reporting, we relied on 95% confidence intervals around odds ratios over traditional *p*-values as indicators of reliable effects because confidence intervals account the non-symmetric distributions of an odds ratio. As ERI increased, youth were less likely to be in the *Average* ( $OR = 0.604$ , 95% CI = 0.489-0.744) or *Infrequent Copers* profiles ( $OR = 0.601$ , 95% CI = 0.479-0.755) relative to the *Flexible Copers Profile*.

#### ASSOCIATIONS WITH DEPRESSIVE SYMPTOMS AND ENVIRONMENTAL MASTERY

<sup>7</sup> The *R3Step* procedure is the preferred procedure for examining covariates associated with profile membership without affecting the assignment of individuals to profiles (Asparouhov & Muthén, 2020).

Finally, we manually implemented the two-step BCH<sup>8</sup> procedure in *Mplus* (Asparouhov & Muthén, 2020) to accomplish both examine *mean-level differences* in depressive symptoms between profiles and to uncover whether *associations* between our predictors of interest, discrimination, ERI, and their interaction, and their outcome differed as a function of profile membership. In terms of mean-level differences controlling for the effects of gender, SES, discrimination, ERI, and the ERI\*discrimination interaction (see Table 12), those in the *Flexible Copers* profile endorsed fewer depressive symptoms and greater environmental mastery than those in the *Average* and *Infrequent Copers* profiles.

Outcome	Flexible Copers (P1)	Average Copers (P2)	Infrequent Copers (P2)	Significant Differences	<i>p</i>
	<i>M (S.E.)</i>	<i>M (S.E.)</i>	<i>M (S.E.)</i>		
Depressive Symptoms	11.962 (0.880)	14.165 (1.052)	16.109 (1.245)	P1 > P2 P1 > P3	.039 .001
Environmental Mastery	4.394 (0.101)	4.170 (0.104)	3.914 (0.127)	P1 > P2 P1 > P3	.050 < .001

*Note.* Differences reported are differences observed when controlling for gender, SES, discrimination, ERI, and the interaction between discrimination and ERI.

Table 12. Mean-level differences in depressive symptoms and environmental mastery by profile.

Examining the associations between ERI, discrimination, and their interaction with our outcomes controlling for gender and SES<sup>9</sup>, regression coefficients were first allowed to vary between profiles (see Table S5 in Appendix D for freely estimated regression coefficients). Wald (*W*) tests of parameter constraints were conducted, where a non-significant Wald test indicated that the estimated parameters could be constrained to equality across classes. In other words, a non-significant Wald test indicates that the regression coefficient is not moderated by profile membership. Wald tests indicated that no regression coefficients for discrimination, ERI, or their

<sup>8</sup> The *BCH* procedure is the preferred method for examining continuous distal outcomes (Asparouhov & Muthén, 2020). Running the BCH procedure manually also allows one to control for covariates and examine moderation by profile.

<sup>9</sup> Because gender and SES were used as control variables (i.e., our substantive research questions do not pertain to the effects of gender and SES on depressive symptoms and environmental mastery), the effects of these covariates on outcomes were constrained to equality between classes.

interaction differed between profiles with respect to depressive symptoms ( $W(6) = 1.780, p = .939$ ) or environmental mastery ( $W(6) = 6.087, p = .414$ )<sup>10</sup>. Therefore, while there are mean-level differences between profiles with respect to depressive symptoms and environmental mastery, the associations between our predictors and outcomes were equivalent for all youth regardless of their pattern of culturally-informed coping.

Examining regression coefficients where regression coefficients are equal across profiles, greater SES was associated with fewer depressive symptoms ( $B = -1.012, p = .015$ ) and greater environmental mastery ( $B = 0.153, p < .001$ ; see Figure S1 in Appendix D for a combined visual of the significantly different intercepts but equal effect of discrimination on our outcomes). Among our entire sample of 694 minoritized youth, discrimination was associated with greater levels of depression ( $B = 4.190, p < .001$ ) and less environmental mastery ( $B = -0.246, p < .001$ ). Greater ERI endorsement was promotive of fewer depressive symptoms ( $B = -1.389, p = .002$ ) and greater environmental mastery ( $B = 0.125, p = .015$ ). Gender and the interaction between discrimination and ERI were not predictive of either outcome.

### Sensitivity Analyses

To examine whether profile differences were observable with respect to gender, race, age, and SES, we ran additional multinomial logistic regressions using the *R3Step* procedure. Results from these sensitivity analyses indicated that, compared to Black youth, Latinx ( $OR = 2.057, 95\% CI = 1.209-3.499$ ), Asian ( $OR = 3.623, 95\% CI = 1.290-10.171$ ), and Multiracial/Multiethnic youth ( $OR = 1.897, 95\% CI = 1.008-3.570$ ) were more likely to be in the *Infrequent Copers* profile than the *Flexible Copers* profile. Higher SES youth were, by contrast, less likely to be in the *Infrequent Copers* profile relative to the *Flexible Copers* profile ( $OR = 0.802, 95\% CI = 0.652-0.988$ ). Gender and age were not predictive of profile membership.

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<sup>10</sup> Wald tests were also non-significant when testing for coefficient differences one predictor at a time.

## DISCUSSION

The coping literature has, broadly, neither attended to the unique stressors faced by those from minoritized groups nor sufficiently examined the types of coping that may be needed to combat these stressors (Compas et al., 2017). Shifting and persisting has recently been implicated as a way of coping that protects not only against negative physical health for those exposed to uncontrollable economic stress (Chen & Miller, 2012), but may also play a role in protecting minoritized youth facing uncontrollable discrimination-related stress from greater risk for depression (Christophe et al., 2019; Christophe et al., in press; Christophe & Stein, under review; Stein et al., under review). Furthermore, S&P coping appears to be conceptually and empirically related to other factors such as critical civic engagement and religious/spiritually-based coping, as well as values implicated in coping and wellbeing such as familism values (Christophe et al., in press). To continue to better understand the ways minoritized youth cope with discrimination, and to further examine the relations between S&P coping and other, culturally-informed coping factors at different stages in development, we utilized latent profile analysis to identify the precursors, correlates, and psychological outcomes associated with patterns of shift-&-persist and culturally informed coping employed by a large sample of minoritized adolescents ( $N = 367$ ) and emerging adults ( $N = 327$ ).

Using factors scores adjusted for impact and DIF (see Appendix D for greater discussion of the implications of examining these measures using MNLFA) and consistent with Hypothesis 1, we identified three distinct profiles of culturally-informed coping *Flexible Copers*, *Average Copers*, and *Infrequent Copers*. Our findings broadly align with previous person-centered examinations of coping in minoritized youth by Aldridge and Roesch (2008) and McDermott et al. (2019), who find evidence for heterogeneity in the patterns of coping employed by youth. Additionally, these endorsement of one pattern of coping versus another did not differ as a function of age. While this cross-sectional finding does not suggest that youth endorse the same patterns of coping throughout adolescence into early adulthood, it does suggest that there are no systematic differences in profile membership based on age and early adolescents in our sample that are as young as 13-years-old have undergone sufficient cognitive development to report use of more



abstract, cognitively based coping strategies such as shift-&-persist. This aligns with work positing that, developmentally, cognitively based coping strategies should become more commonly employed starting in adolescence (Compas et al., 2017).

Secondly, those in the *Flexible Copers* profile, controlling for the harmful impact of discrimination, endorsed the fewest number of depressive symptoms and endorsed the greatest perceived control over their external environment. This suggests a promotive effect, where the more S&P and culturally-informed coping factors one endorses using, the less depression and greater perceived environmental control they have. While it does not measure the same coping factors, this finding broadly aligns with Aldrige and Roesch's (2008) observation that marginalized youth who used a wider number of coping strategies endorsed fewer depressive symptoms. Although a full discussion of the coping/emotion regulation flexibility literature is beyond the scope of this paper, this literature also broadly suggests that flexibility, similar to having goodness-of-fit between coping strategy choice and stressor controllability (Lazarus & Folkman, 1984), is more adaptive (Aldao et al., 2015). Our findings suggest that the same holds true for coping factors and values informed by marginalized youths' cultural beliefs and identities. Indeed, consistent with Hypothesis 2, youth with stronger ERIs were more likely to be in the *Flexible Copers* profile relative to all other profiles, providing further evidence that minoritized youth are often drawn towards more adaptive ways of coping that a representative of their cultural identities and values (Heppner et al., 2014). These associations are likely transactional across time, where discrimination experiences potentiate identity development, cultural value endorsement, and development of adaptive coping, which are then employed to combat subsequent discrimination (Neblett et al., 2012).

Despite the promotive effects of belonging to the *Flexible Copers* profile on depression and environmental mastery (i.e., mean-level profile differences), we did not find that membership in this or any profile protected youth against the impacts of discrimination (i.e., moderated the discrimination-outcome association). This finding of promotion but no protection partly conflicts with prior variable-centered work pointing towards the protective effect of a higher-order factor composed of shift, persist, civic engagement, and religious coping in reducing the impact

discrimination on minoritized youth's depressive symptoms (Christophe et al., in press). However, we previously found this protective effect using a second-order latent variable, where information regarding the strength of association between those coping factors and the higher-order coping factor was, for each individual, compressed into a single factor score. It is difficult to compare across variable and person-centered approaches, as they make fundamentally different assumptions as to whether one's sample may generalize to a single, larger population (variable-centered) or one's sample includes individuals from substantively different, larger but unobserved populations latent within one's sample (von Eye & Bogat, 2006). Therefore, our findings do not, necessarily, falsify each other. Factors may demonstrate both promotive and protective effects depending on context (Masten et al., 2009), and, in the context of the current study, we did not find that different combinations of coping and cultural value endorsement, rendered discrimination a less harmful stressor as it relates to depressive symptoms and environmental mastery. Despite this 'difference' in protection found across studies, it is important to note that both studies do point towards the promotive impact of these strategies on depressive symptoms controlling for discrimination. To facilitate the future study of the contexts and outcomes for which culturally-informed coping factors are promotive and/or protective, variable-centered approaches and person-centered will be needed. Investigations where both approaches are employed simultaneously may help the field understand the contexts where and cultural assets and coping factors are protective across entire populations of individuals versus only protective for certain populations.

Interestingly, overall variability in civic engagement among our sample was low and civic engagement, thus, was not an important factor in differentiating different coping profiles. There exist many barriers to civic participation for minoritized and low-SES youth such as access to transportation and nearby opportunities, as well as familial obligations and discouraging experiences with discrimination (Mathews et al., under review). Action may, therefore, not demonstrate as much variability as other aspects of critical consciousness such as such as motivation (i.e., motivation to act to reduce social inequality; Diemer et al., 2020). Further, civic engagement was not correlated on a bivariate level with religious coping. In a prior study, these factors were found to positively correlate and to both load onto a higher-order coping factor

along with shift and persist (Christophe et al., in press). Our measures of religious coping and civic engagement differ from those we have used in previous work; therefore, it is unclear as to whether these conflicting findings are due to the different measures used, or if there is not, truly, a significant linkage between these constructs. Specifically, we previously (in press) used items from the communal action subscale of the Anti-Racism Action Scale (Aldana et al., 2019), which focus on attending and taking leadership roles in social justice oriented groups, whereas the critical action subscale of the ShoCCS (Diemer et al., 2020) focuses on more on group participation, contacting political representatives, and protesting. These items are more akin to those in Aldana et al.'s (2019) political change action subscale. It is both a conceptual and an empirical question whether shifting and persisting is more strongly linked to less 'critical' community organizing than critical and more risky civic actions such as protesting. In better understanding culturally-informed coping factors that may be related to S&P coping, future work should work to clarify the nature of the associations between S&P, different types of civic action, and religious coping. Other dimensions of critical consciousness such as reflection and motivation may also be differentially associated with religious coping and may have more variability to better differentiate parents of culturally-informed coping.

Finally, our sensitivity analyses provided initial evidence that race and SES might also impact the likelihood of exhibiting a certain pattern of S&P and culturally-informed coping over another pattern. Specifically, our findings tentatively suggest that Black and higher SES youth were generally overrepresented in the *Flexible Copers* profile. The majority of work on S&P coping in the context of uncontrollable stress does not find that S&P coping is protective for high-SES youth (e.g., Chen et al., 2015; Lam et al., 2018). Null effects among high-SES individuals are thought to be present because high-SES youth are thought to face fewer uncontrollable stressors and thus have less need of ways of coping specifically adapted for use in the context of uncontrollable stress (Chen & Miller, 2012). This notion that high-SES youth have lower exposure to uncontrollable stress may not hold, however, for high-SES minoritized youth and when considering discrimination as an uncontrollable stressor.

For instance, discrimination has been found to be a stronger predictor of major depressive disorder for Black youth with higher subjective social status (Assari et al., 2018a). One potential mechanism behind this effect may be due to an interaction between SES and social context. For instance, Black youth living in predominately White areas both endorsed higher baseline discrimination and steeper increases in discrimination across time (Assari et al., 2018b). Higher SES was associated with greater depressive symptoms for Black youth in predominately White areas compared to other areas (Assari et al., 2018a). If Black, high-SES youth tend to live in Whiter neighborhoods, and this neighborhood functions as a risk for greater exposure to discrimination and more depression, it is understandable that Black youth might build a flexible arsenal of S&P and culturally-informed coping factors to combat this more frequent and potentially more harmful exposure to uncontrollable discrimination-related stress. Existing scholarship on S&P, as well as other ways of coping (e.g., striving) that may lead to skin-deep resilience, or occupational/educational attainment but poor physiological functioning (Brody et al., 2016), has not attended to the ecological context in which discrimination and coping occurs. Future longitudinal work may benefit from an exploration of S&P and culturally-informed coping specifically in Black populations of varying SES to better understand how the use and effects of coping may differ based on neighborhood, SES, and changes in discrimination exposure over time.

## LIMITATIONS AND CONCLUSIONS

While the current study contributes the literature by using a large sample of minoritized adolescents and emerging adults to identify profiles of culturally-informed coping and profiles associations with discrimination and important metrics of psychological functioning, it is not without its limitations. Firstly, our cross-sectional design, while bolstered by our 300+ person cohorts of adolescents (ages 13-17) and emerging adults (ages 18-25), gives us only a snapshot of coping patterns and their associations with discrimination, ERI, and outcomes. Coping itself may change over time as a function of development and in response to the frequency and nature of different stressors at various periods in development. Our cross-sectional design allowed us to

observe null differences in the impact of coping profile based on age, a between-person test, but does not allow us to examine how within-person changes in coping patterns across time may change the efficacy of how patterns of coping protect against discrimination and promote wellbeing. Future work should aim to examine growth and change in these culturally-informed coping patterns across time, with attention to how stability or changes in one's pattern of coping is associated with changes in wellbeing and changes in how well one copes with discrimination. In these future longitudinal examinations, it will be important to establish measurement invariance and identify DIF not only across various groups or variables of importance (e.g., race, age, etc.) but also across time. Again, while we examined minimal mean impact and DIF based on age or cohort, examining within-person differences via longitudinal invariance testing may provide additional information as to any substantive measurement differences.

Finally, future studies will benefit from employing behavioral measures of familism that tap into how youth may behaviorally express their familism values as a way of broadly coping with discrimination. While attitudinal familism may, especially starting in adolescence and onward, lead to the behavioral enactment of familistic behaviors (Stein et al., 2014), the two are, nonetheless, separate constructs. Individuals may, following exposure to discrimination, cognitively cope by finding strength from the warmth, respect, and security given to and given by one's family (i.e., attitudinal familism assessed in this study) and they may engage in subsequent behaviors to express these values as a way of coping (e.g., spending extra time with the family). Indeed, recent work reconceptualizing the nature of coping in Latinx youth has identified that youth may cope with stressors not just individually, but also as a family unit – a true expression of familistic behaviors (Gonzalez et al., 2020). Given that minority youth's proclivity to cope with discrimination at the family level (Chandra & Batada, 2006), future work examining familism's role in coping should examine both attitudinal and behavioral aspects of familism.

In conclusion, this study contributes to a small but growing literature on how minoritized youth cope with discrimination by identifying patterns of culturally-informed, shift-&-persist coping methods, examining what predisposes youth to employ one pattern of coping versus another, and

examining how these coping patterns promote positive psychological functioning broadly and in the face of discrimination. Furthermore, this study utilizes moderated nonlinear factor analysis, to identify and coping scores based on small, but potentially impactful, systematic measurement differences in these constructs based on numerous factors such as race, gender, age, SES, etc. Ultimately, we identified three distinct patterns of culturally-informed coping that early adolescents to emerging adults were equally likely to display regardless of their stage in development. Examining the implications of displaying these different patterns of coping, we found that those who flexibly use a wide range of S&P and culturally-informed coping factors endorse fewer depressive symptoms and greater perceived control over their environments, even after controlling for factors such as discrimination. While one's pattern of coping did not reduce the harmful impact of discrimination on these outcomes, our findings suggest that minoritized adolescents and emerging adults generally benefit of having a flexible set of culturally-informed coping methods at their disposal.

## CHAPTER V: INTEGRATIVE DISCUSSION

Shift-&-persist coping is a form of coping characterized by a cognitive reappraisal and acceptance of uncontrollable stressors combined with endorsement of purpose, optimism, and a hopeful orientation towards the future (E. Chen & Miller, 2012). Because they allow the individual to cope by adapting themselves to the harsh demands of their environment (i.e., secondary control coping; Lazarus & Folkman, 1984), S&P ways of coping have been conceptualized as particularly adaptive when stressors are chronic and uncontrollable (E. Chen, 2012). While the protective aspect of S&P in reducing the impact of uncontrollable stress such as poverty and discrimination on numerous metrics of physical health has been well-established (E. Chen et al., 2015; Lam et al., 2018), the efficacy of S&P has not been tested in the context of psychological health and wellbeing. Furthermore, individuals may call upon multiple psychological assets, coping strategies, and values/beliefs to combat the psychological effects of uncontrollable discrimination stress. Racially and ethnically minoritized youth are often drawn towards coping in ways that are informed by their cultural beliefs and identities; these types of culturally-informed coping factors have also been theorized to be particularly effective (Heppner et al., 2014). Many of these coping factors are often themselves characterized by the reframing, acceptance, purpose, and optimism that are core to S&P, and may, indeed, be culturally-informed expressions of shifting and persisting. In this integrative dissertation, I presented three studies from a program of research investigating 1) the protective impact of S&P coping on depression and psychological wellbeing, 2) the underlying associations between S&P and two culturally-informed coping factors, civic engagement and spiritually-based/religious coping, and 3) how patterns of S&P, culturally-informed coping, and the endorsement of familism values may promote psychological health and reduce the harmful impact of discrimination. By addressing these gaps in the literature, these studies add needed nuance to the efficacy of S&P and related coping factors on mental health for marginalized youth exposed to discrimination.

Study 1, which examined how S&P and ethnic-racial identity may protect Latinx youth exposed to economic hardship and discrimination from greater depressive symptoms, was the first study

to examine the mental health implications of S&P coping. In this study, we observed that, for Latinx youth who engaged in greater S&P coping, economic hardship became progressively less predictive of depressive symptoms. However, when examining ethnic-racial discrimination, this protective effect only held among youth for whom race/ethnicity was a relatively less important and less positive piece of the self. This study was the first to examine whether the protective effects of S&P coping could be extended to mental health and was the first study to explicitly examine S&P coping in the context of ethnic-racial discrimination. Albeit not in the expected direction, the fact that youth's level of ERI endorsement impacted the degree to which S&P protected against discrimination speaks to the notion that additional intraindividual assets may need to come online to help mitigate racialized stressors relative to general stressors (Stein et al., 2012). Furthermore, Study 1 points to the fact that high ERI Latinx youth are negatively impacted by ethnic-racial discrimination regardless of their level of S&P coping. This finding pointing towards the benefits of S&P coping for low, but not high, ERI youth exposed to discrimination has been found when examining depressive symptoms in 9<sup>th</sup> grade in an independent sample of Mexican origin youth (Stein et al., under review). These associations may speak to the notion of ERI as a double-edged sword (Yip, 2018), where high ERI youth are particularly impacted by discrimination because a very central part of their identity is under attack. Because most minoritized youth endorse strong ERIs, it is important to understand the factors that promote resilience in this large majority of high ERI youth. Study 1, therefore, served a catalyst for Studies 2 and 3 to build upon by examining whether additional coping factors that may embody culturally-informed ways of shifting and persisting may help protect low *and* high ERI youth from the negative psychological effects of discrimination.

Building off of the foundations for the study of S&P and psychological health laid by Study 1, Studies 2 and 3 use different quantitative modalities, namely variable-centered (Study 2) and person-centered (Study 3) approaches, to examine associations between S&P and culturally-informed coping factors. Additionally, they examine the conditions under which these factors are promotive and protective of psychological health for minoritized youth exposed to discrimination. Study 2 first provides empirical support for the associations between shift, persist, civic engagement, and spiritually-based coping. Specifically, the associations between



these factors were well-explained by the existence of a higher-order coping factor, culturally-informed S&P, that may represent the essence of S&P coping that is then expressed in various culturally-informed (civic engagement and spiritually-based coping) and general (S&P as it is typically measured in the literature; see Lam et al., 2018 for example). Among a sample of minoritized college students, this factor was found to both promote fewer depressive symptoms and render the typically promotive effect of ERI on depression non-significant. Culturally-informed S&P was also protective such that discrimination was no longer associated with depressive symptomatology for youth who were high in culturally-informed S&P, regardless of their level of ERI endorsement. In line with the future directions stemming from Study 1, this study seems to suggest that engaging in high levels of culturally-informed S&P coping, which may be observed through shift, persist, civic engagement, and spiritually-based coping, does seem to protect against the negative impacts of discrimination. However, these conclusions may be tempered by the findings presented in Study 3, and the resolution of these seemingly conflicting findings may have implications for the continued study and measurement of S&P and culturally-informed coping.

Building off Study 2, Study 3 uses person-centered analyses to examine whether subgroups of minoritized adolescents and emerging adults exist who differ which respect to their endorsement or patterns of shifting, persisting, using religious coping, engaging in the civic space, and endorsing familism values. We identified three distinct profiles, the most notable and distinct of which was a profile of *Flexible Copers* who were average in civic engagement, high in shift, persist, familism value endorsement and especially high in their use of religious coping. Relative to other profiles and, importantly, controlling for the effects of discrimination and ERI, youth in this profile endorsed the greatest levels of environmental mastery, an important component of psychological wellbeing, and the fewest depressive symptoms. This finding is roughly similar to the promotive effect observed in Study 2. However, unlike Study 2, we found no evidence that the strength of the association between discrimination differed based on one's profile membership. This means that a pattern characterized by more frequent S&P and culturally-informed coping was promotive of desirable psychological outcomes but not protective against the deleterious impact of discrimination on those outcomes.

As discussed in the discussion section of Study 3, making direct comparisons of findings across these studies is difficult for numerous reasons, many of which relate to the different underlying assumptions of variable centered approaches, which assume population homogeneity and excel in prediction, and person-centered approaches, which test for population heterogeneity and excel in description (Laursen & Hoff, 2006). These findings, therefore, do not inherently falsify one another, but speak to the ways our understanding of these processes may be informed by the methodologies we use. Study 3 would suggest that it is meaningful to examine subgroups of minoritized youth based on their patterns of S&P and culturally-informed coping, as profiles differ in their mean endorsement of depression and environmental mastery. However, one could argue that coping profile membership does not matter if one is concerned with identifying factors that reduce the raw impact of discrimination on youth outcomes. Similarly, the findings described in Study 2 are concerned almost entirely with the impact of discrimination, are less sensitive to whether mean-level differences between people exist in depressive symptoms and go as far as to assume that there are no distinct groups of people with respect to our coping factors.

Together, what these findings may collectively imply is that discrimination is a harmful, pervasive stressor that cannot be nullified by one, or even several internal factors. Seminal models of resilience processes among minoritized youth (Neblett et al., 2012; Spencer et al., 1997) highlight the numerous intra-individual and contextual factors that all may play a role in promoting positive outcomes and combatting the negative effects of racialized stress. Because discrimination has been so consistently found to be harmful (Benner et al., 2018) and resistant to commonly proposed protective factors (Yip et al., 2019), scholars may be well-served not to assign the value of a factor such as S&P or other culturally-informed coping factors solely based on whether it is protective. Studies 2 and 3 align in their finding that these factors, controlling for discrimination and identity, promote healthy psychological adaptation, even if they disagree as to how and if these factors make discrimination less harmful than is typical. Especially when planning and evaluating interventions intended to cultivate ‘adaptive’ coping and various cultural assets (e.g., identity, values, etc.) among minoritized youth, scholars may be well-served by thinking through whether partial or full protection against discrimination is likely and reasonable. As has been demonstrated in the study of identity (Yip et al., 2019) and S&P coping

through Studies 2 and 3, even if protection is not consistently observed, the identification and cultivation of promotive factors is valuable and worthwhile. Through increased scholarly inquiry, with studies employing multiple modalities across multiple developmental periods and examining multiple relevant outcomes, we may eventually gain a better understanding of the boundary conditions within which S&P and culturally-informed coping factors promote and maybe protect against the harmful impact of discrimination.

### FUTURE DIRECTIONS AND CONCLUSIONS

While these studies represent the first three empirical studies to examine S&P in the context of mental health, identity, and culturally-informed coping factors, they each have distinct limitations which, if addressed in future work, will greatly contribute to our collective understanding of how minoritized youth effectively combat discrimination. Rather than re-listing these limitations, which may be seen in each respective study, I offer future directions for this program of research that build off the limitations of these studies.

While these three studies include samples spanning the periods of adolescence and emerging adulthood, they do not examine the development of S&P, ERI, and related coping factors, as well as their implications and effects, over time. Scholarship on the development of coping and emotion regulation strategies would suggest that the use of more abstract, cognitively-based coping strategies come online during adolescence as youth's metacognitive skills rapidly develop (Compas et al., 2017). While we did not observe age-related changes in the patterns of coping factors utilized by minoritized youth in Study 3, this finding does not address intra-individual change over time in the ways one copes with uncontrollable stress. It is possible that early or late development of S&P, ERI, and any of our coping factors may have implications for one's trajectory of psychological functioning across time. Discrimination has been shown to have a long-lasting impact on internalizing symptoms (Stein et al., 2019) and youth who are late in developing the skills needed to combat discrimination may be especially impacted across time.

There may also be specific periods in development where discrimination is particularly predictive of psychopathology, meaning that successful coping with discrimination during that window of development may be particularly important. Using data from three waves of the Midlife in the United States study, we found evidence for ‘sensitive periods’ (Gee et al., 2019) for risk (discrimination) and protective factors (S&P) at different points in the life course. Specifically, examining decade by decade impacts of discrimination and S&P on peaks and valleys in the trajectory of depressive symptoms from age 20 to 69, we observed that discrimination is particularly predictive of depression and S&P is particularly protective against depression during the 30’s and 40’s, or midlife period (Christophe & Stein, under review). Assessing various metrics of physiological stress via salivary cortisol, Adam et al. (2015) observed that, when entered in the same model, discrimination in adolescence, but not discrimination in young adulthood (~ages 19-30), predicted flatter declines in cortisol when Black participants were in adulthood (~ age 32). This study implies that adolescence may be a sensitive period in which the effects of discrimination play a particularly important role for later stress physiology related to later points in development. Given that adolescence (Seaton, 2020) and midlife (Christophe & Stein, under review) may be sensitive periods for discrimination, it will be equally important to examine whether these sensitive periods also increase the ‘potency’ or efficacy of protective factors (Gee et al., 2019) such as S&P and culturally-informed coping factors

Additionally, given the conceptual and empirical associations between these coping factors demonstrated in Study 2, it is possible that the development of one coping factor may potentiate the development of others over time and in a bidirectional, ‘snowballing’ fashion. For instance, marginalized youth may attend religious services and learn the value of religious coping early in development, then be connected with and find meaning from the civically engaged events organized by one’s religious organization. Religious participation has broadly been observed as a correlate of civic engagement (Lewis et al., 2013), and as Mora (2013) observes in a sample of Catholic Mexican immigrants, these associations may be attributable to social network development, social skill development, and existing connections between religious centers and secular, civically-focused organizations. Momentary religious centrality has also been shown to

predict greater civic engagement in Muslim American adolescents and mediate the association between maternal religious socialization and civic engagement (Balkaya-Ince et al., 2020). While these associations do not specifically address religious *coping* as a catalyst for civic engagement, it is possible that these coping factors may, depending on context, develop in tandem and lead to a greater use of these factors across time and development.

It is equally important to examine the short-term consequences of S&P, ERI, and culturally-informed coping factors as it is to understand their predictors correlates, and effects across longer periods of time. Daily diary or ecological momentary assessment methodologies, which involve collecting numerous assessments per individual over a short period of time (e.g., 14 data points over two weeks) may be used to begin to examine these stress and culturally-informed coping and resilience processes at a more micro-level. For instance, Wang (2021) found that adolescents who experience more negative peer ethnic/racial processes, including racially-motivated discrimination and teasing, over a two-week period exhibit lower school engagement, greater negative affect, and fewer positive feelings related to their race/ethnicity. In addition to this between-person effect, Wang observed that, on days when an individual experienced more negative ethnic/racial processes than their two-week average, they endorsed less engagement in school on that day. This finding is consistent with the small but burgeoning literature linking daily exposure to discrimination to negative daily scholastic and psychological functioning (see Potter et al., 2019 for review).

Examining these processes at the daily level may also shed light on the ways of coping and cultural assets youth call upon to combat daily stressors. For instance, Wang and Yip (2020) observed that, on days when adolescents experienced greater discrimination than their 2-week average and had gotten a good prior night's sleep, the association between discrimination and positive well-being was mediated by greater problem-solving coping. Explorations of the daily mediating and moderating effect of coping with discrimination are very rare, and to our knowledge, there are no studies specifically examining daily-level S&P coping or culturally-informed coping factors. By continuing to examine the implications of using S&P and culturally-informed coping factors across long periods of time and by adding an examination of how these

factors may be called upon as in-the-moment responses to discrimination, we may come to a more well-rounded understanding of short- and long-term responses to discrimination. Additionally, empirical investigations as to how daily coping in response to discrimination changes in frequency and efficacy between and across periods in development may also shed light on how and whether youth's efforts to cope with discrimination must evolve over time. This more well-rounded understanding may also facilitate clinical and community interventions that are tailored to the stressors youth are face with (Potter et al., 2019) and are aimed at supporting the use of coping factors and cultural assets that promote optimal proximal and distal psychological functioning.

In conclusion and despite their limitations, these three studies extend our understanding of resilience processes in minoritized youth by examining the ways in which and conditions when S&P coping and culturally-informed factors implicated in combatting racialized stress (civic engagement, spiritually-based/religious coping, and familism values) are promotive of better psychological health and protective against the negative psychological impacts of discrimination. These three studies provide further evidence for that discrimination is a very harmful uncontrollable stressor whose negative impact on psychological function may be reduced only under certain conditions. S&P coping may, in isolation reduce the impact of discrimination for youth with relatively weak ERIs. Endorsement of an underlying way of coping informed by one's cultural beliefs and characterized by strategies embodying the core components of S&P coping, and a flexible and frequent use of many of these coping factors may promote less depression and better psychological wellbeing. However, the degree to which a culturally-informed shift and persist way or pattern of coping may reduce the negative impact of discrimination on depressive symptoms remains unclear and must be examined further both longitudinally and using a variety of complementary and 'competing' analytical approaches. By building off the foundation laid by these three studies, the field may begin to make new inroads in understanding contexts in which S&P coping, ERI, and culturally-informed coping factors may promote psychological resilience for minoritized youth facing uncontrollable, racialized stressors.

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APPENDIX A: REVIEW SUMMARY TABLE

Study	Study Type	N	Race	Age	Measure	Outcome	Key Finding
<b>Shift-&amp;Persist</b>							
E. Chen et al., 2011	X	121	39% Asian or 'other'	12.61 SD = 2.63	Shift – cognitive restructuring scale RSQ Persist – 6 items – Life Orientation Test	Asthma	S&P associated with better asthma profiles for low-SES youth
E. Chen et al., 2012	L	1207	MIDUS-II sample 31.4% non-white Low-SES 15.8% non-white high-SES sample	Range = 25-74	Shift – positive reappraisals subscale – Primary & Secondary Control Questionnaire & stress reactivity subscale – Multidimensional Personality Questionnaire Persist – Live for Today subscale – MIDUS study	Allostatic load	S&P associated with lower allostatic load for low-SES adults
Kallem et al., 2013	X	1523	47.8% Latinx 38.3% Black	12.4 SD = 1.3	Shift – 3 items – secondary control coping Persist – 6 items – Meaning in Life Questionnaire	BMI	S&P associated with lower BMI for low-SES youth
E. Chen et al., 2013	X	163	53% non-white	14.53 SD = 1.03	See Kallem et al., 2013	Inter-Leukin-6 (IL-6)	Positive impact of supportive role models on IL-6 mediated through S&P
Miller et al., 2014	L	272 mother-child dyads	100% African American	11 at T1 19 8 years post-trial	Did not directly measure S&P	Inflammation composite	Strong African American Families intervention lead to decreased inflammation 8 years post-trial – effects strongest for low-SES

E. Chen et al., 2015	X	122 mother-child dyads	57% non-white	16 SD = 1.18	1 <sup>st</sup> S&P measure developed	Inflammation & Glucocorticoid sensitivity	families & partially mediated through increased parenting quality Less inflammation greater glucocorticoid sensitivity for youth & mothers
Bao et al., 2016	X	997	100% Native Chinese	15.04 SD = 1.69	<u>Shift only</u> – 5 items – cognitive reappraisal, 2 items – acceptance, 5 items – emotion regulation	Sleep problems	Mediation of Low-SES on sleep problems through economic discrimination not significant for those high in shift
Lam et al., 2018	L	308	20% Black 8% Asian 8% Latinx 14% Multiracial	13 SD = 2.51	Added items to E. Chen et al., 2015 S&P measure	Asthma	Fewer daily asthma symptoms + better asthma QOL for low social status youth Better asthma QOL & control when unfair treatment was high
L. Chen et al., 2019	L	645	100% native Chinese	10.67 SD = 1.79	Shift – 6 items – cognitive reappraisal & 4 items – emotion regulation Persist – 7 items – Future Expectations Scale	Cortisol awakening response & diurnal cortisol	Higher cortisol at waking & steeper decline throughout day
Christophe et al., 2019	X	175	100% Latinx (14% 1 <sup>st</sup> generation)	12.9 range 10-15	Shift – 8 items - COPE positive reinterpretation & growth & acceptance Persist – 5 items – Meaning in Life Questionnaire	Depressive symptoms	Fewer depressive symptoms for high economic hardship youth

Stein et al., under review	L	674	100% Mexican Origin (28% 1st generation)	11.57 SD = 2.57 at Wave 5	Shift – 5 items – secondary control coping Persist – 6 items – optimism	Depressive symptoms	Fewer depressive symptoms for low-ERI youth facing high discrimination S&P concurrently predicts fewer 9 <sup>th</sup> grade depressive symptoms S&P predicts 9 <sup>th</sup> grade depressive symptoms & slope depressive symptoms across high school for low-ERI youth facing high discrimination
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**Critical Civic Engagement**

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White-Johnson, 2012	X	303	100% African American	20.1 SD = 3.03	Ethnic-racial discrimination ERI - MIBI	Civic engagement	Discrimination, centrality, & private regard predict greater civically-engaged attitudes & behaviors
Metzger et al., 2018	X	2,647	30% Latinx 10% Black 7% Asian 9% 'other'	13.4 range = 8-20	Optimism Future Orientation	Civic engagement	Empathy & future orientation predicted many types of civic engagement
Hope & Jagers, 2014	X	634	100% African American	15-25	Ethnic-racial discrimination	Civic engagement	Discrimination predicts a greater number of civically-

Moore et al., 2016	X	259	50.1% African American 15.1% Latinx 5.8% bi/multiracial 2.3% Asian	20.86 SD = 1.92	Agency Systems Worldview	Civic engagement	engaged behaviors High systems worldview associated with greater civic engagement across levels of agency
Godfrey & Cherng, 2016	X	12,240	65% White 16% Latinx 14% Black 4% Asian	16.46 SD = .61	County-level income inequality SES	Civic engagement	Income inequality predicted greater civic engagement. Association was stronger for low-SES and minoritized youth
Hope et al., 2018	L	504	43.8% Black 56.2% Latinx	18.2 SD = .47	Microaggression Political activism	Stress Anxiety Depression	For Latinx students, political activism associated with fewer stress & depressive symptoms across levels of microaggression
Hope et al., 2019	X	897	100% Black	19.7 range = 14-29	Interpersonal, cultural, & institutional discrimination ERI	Civic engagement (low-risk & high-risk activism)	Interpersonal discrimination predicted greater high-risk activism Cultural discrimination & ERI centrality predicted low risk activism
Balkaya et al., 2019	L	95	100% Muslim American 76% South Asian 21% Middle	16.5 SD = 1.6	Religious identity – religious private regard & centrality	Civic engagement – attitudes & behaviors	Religious private regard at T1 associated with greater T3 civic attitudes

			Eastern/ North African 3% 'other Asian' 10% 1 <sup>st</sup> generation				Religious centrality at T1 associated with greater civically- engaged behaviors at T3
Watson- Singleton et al., 2020	L	232	100% Black	19.7 SD = 2.87	Discrimination, Black Lives Matter support and action, perseverative cognition	Depressive symptoms	Discrimination not related to T2 depressive symptoms for those high in Black Lives Matter support
Wray- Lake et al., 2019	L	276	60% White 29% Asian 6% Latinx 4% Black	20.03 SD = 1.22	Civic engagement (4 types), basic psychological needs satisfaction	Well- being	Civic engagement composite associated with greater well-being across 7 days, partially mediated through basic psychological needs satisfaction

<b>Spiritually-based/religious Coping</b>							
Utsey et al., 2000	X	220	100% African American	28.16 SD = 10.71	Africultural Coping Systems Inventory (ACSI)	ACSI measure ment validation	Spiritually- based coping positively correlated with seeking social support & focusing on the positive
Ano & Vasconcelles , 2005	M	k = 49 N = 13,512	35% non- white	Range = 17-97	Religious coping	Positive & negative psycholog ical adjustmen t	Religious coping associated with greater positive psychological adjustment & less negative psychological adjustment

Lewis-Coles & Constantine, 2006	X	284	100% African American	33.10 SD = 12.13	Individual, institutional, & cultural racism	Spiritually-based coping	Institutional racism associated with greater use spiritually-based coping for African American women
Utsey et al., 2007	X	351	100% African American	25.7 Range = 18 – 69	Risk – stress + discrimination Traditional coping Cultural coping – spiritual + collective coping	QOL	Cultural coping had a stronger effect on QOL than risk factors & traditional coping
Utsey et al., 2008	X	215	100% African American	19.17 SD = 1.78	Time orientation – present & future Religiosity Racial pride	Life satisfaction	Religiosity positively associated with optimism Future orientation associated with greater life satisfaction through greater optimism
Gaylor d-Harden & Cunningham, 2009	X	268	100% African American	12.9 SD = 1.27	Ethnic-racial discrimination	Spiritually-based coping	Institutional racism associated with greater use of spiritually-based coping regardless of gender
Foster, 2009	L	29	57.6% non-white	20 SD = 4.9 at T1	Pervasiveness of discrimination	Religious coping	Higher pervasiveness associated with more religious coping over 28-day time frame
Chapman & Steger, 2010	X	221	45% African American 55% white	20 SD = 5.8	Positive religious coping	Anxiety	Positive religious coping associated

Ghaffari & Çiftçi, 2010	X	174	100% Muslim 1 <sup>st</sup> generation immigrants	27.17 SD = 8.52	Religious attitudes Religious behaviors discrimination	Self-esteem	with fewer anxiety symptoms regardless of race Discrimination moderated relations between religious attitudes, religious behaviors, & self-esteem. Positive impact of religious attitudes and behaviors breaks down when discrimination was high
Wei et al., 2010	X		100% Asian American 23.9% Korean 21.4% Chinese	20.16 SD = 2.79	General stress Racial discrimination stress Spiritual coping Family support Other coping strategies	Depressive symptoms	Racial discrimination and general stress associated with greater depressive symptoms. Family support associated with fewer depressive symptoms. Spiritual coping did not predict depressive symptoms over stressors and other supports and coping strategies
Ahmed et al., 2011	X	240	100% Arab American	15.57 SD = 1.65	Cultural resources – ERI + religious support & coping Socio-cultural adversity – discrimination + acculturative stress	Psychological distress	Cultural resources predicted lower distress over & above

Greer, 2011	X	188	100% African American Women	25 SD = 10.71	Racism & Sexism ACSI subscales	Psychological symptoms	socio-cultural adversity Racial+gender discrimination associated with more psychological symptoms. Moderation by ACSI coping strategies was non-significant
Fernandez & Loukas, 2014	X	247	100% Mexican-American (Generation status not reported)	26.81 SD = 8.46	Positive & negative religious coping Discrimination	Depression	Discrimination was not associated with depression when positive religious coping was high
Assari et al., 2015	L	227	100% Black	14.85 SD = .68 at T1	Religious participation	Morning cortisol	Participation negatively associated with morning cortisol at baseline & 6-yr follow-up for males
Ajibade et al., 2016	X	199	100% African American	27.76 SD = 9.71	ERI Religious commitment	Life satisfaction Meaning in life	Associations between ERI & life satisfaction + ERI & meaning in life mediated through religious commitment
Balkaya et al., 2019					See Critical Civic Engagement section		Religious private regard at T1 associated with greater T3 civic attitudes Religious centrality at T1 associated with greater



civically-  
engaged  
behaviors at  
T3

<b>Familial Cultural Values</b>							
Berkel et al., 2010	L	750	100% Mexican American 29.7% 1 <sup>st</sup> generation	10.42 SD = .55 at T1	Familism Peer discrimination	Internalizing & externalizing symptoms	Familism mediates relations between peer discrimination & outcomes
Umaña - Taylor et al., 2011	X	207	100% Latinx 35.4% 1 <sup>st</sup> generation	16.23 SD = 1.0	Familism values Ethnic-racial discrimination	Risky behaviors Depressive symptoms	Familism protects against risky behaviors when discrimination is low
Chen et al., 2013					See S&P section		Association between supportive role models & IL-6 mediated through S&P
Miller et al., 2014					See S&P section		Intervention increased parenting quality & support Parenting associated with less inflammation 8 years post-intervention
Brody et al., 2014	L	331	100% African American	11.2 at T1	Perceived discrimination Emotional support	Allostatic load	Association between discrimination & allostatic load decreases when family support is high
Campos et al., 2014	X	1245	58.9% Asian 23.6% White 17.5% Latinx	19.93 SD = 2.106	Familism Closeness to family Social support	Psychological health	Familism associated with greater psychological health through greater

Stein et al., 2015	X	173	100% Latinx 78% Mexican origin	14.08	Discrimination Familism	Depressive symptoms School belonging	closeness to family and social support across all racial/ethnic groups Familism associated with fewer depressive symptoms. Discrimination associated with greater depressive symptoms & less school belonging. Familism did not serve as a moderator
Cheng et al., 2016	X	207	100% Mexican-origin 16% 1 <sup>st</sup> generation	26.57 SD = 9.24	Discrimination Acculturative stress Familism	Depressive symptoms	Familism protected against negative effect of acculturative stress but not discrimination
Tsai et al., 2016	L	421	100% Mexican-origin 12.6% 1 <sup>st</sup> generation	15.03 SD = .83 at T1	Family stressors Provision of emotional support Familial obligation Role fulfillment	Internalizing symptoms Externalizing symptoms	Youth more likely to provide parental emotional support on days of family stressors – pattern stronger for youth with high family obligation
Corona et al., 2017	X	198	100% Latinx 22% 1 <sup>st</sup> generation	20.6 SD = 1.78	Familism Acculturative stress Discrimination	Depression Anxiety	Acculturative stress not associated with depression when familism support is high

Stein et al., 2018	X				See Christophe et al., 2019	Latinx cultural assets – familism + ERI + enculturative behaviors Peer discrimination Foreigner objectification	Externalizing symptoms	Association between discrimination & anxiety reduced when endorsement familism referents is high Latinx cultural assets protect against greater externalizing symptoms under conditions of high peer discrimination & foreigner objectification
Chiang et al., 2019	X	257	38.3% African American 28.5% Latinx 5.8% 'other'	13.92 SD = .54		Familism – values & behaviors	Inflammatory processes	Familism values associated with greater IL-10 sensitivity for Latinx & Black youth For Black youth, familism behaviors associated with greater cortisol & IL-10 sensitivity + decreased cytokine response
Stein et al., in press	X				See Christophe et al., 2019	Familism values Parent-child relationship quality Meaning in life Support seeking coping	Externalizing symptoms Internalizing symptoms	Familism associated with fewer externalizing symptoms through relationship quality Familism associated with fewer

Gonzalez et al., 2020	X	See Christophe et al., 2019	COPE (Carver et al., 1989)	COPE – examining factor structure	internalizing symptoms through meaning in life. Familism positively associated with support seeking coping Original factor structure of the COPE did not hold Social support was one of the 3 factors identified in this Latinx sample
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X = Cross-sectional, L = Longitudinal, M = Meta-analysis.

Table S1. Summary of Reviewed, Quantitative Published Studies on S&P, Critical Civic Engagement, Spiritually-based Coping, and Familial Cultural Values in Minoritized Groups.

APPENDIX B: COPING & CULTURE

Item	Original Measure	Rotated Factor Loadings	
		Shift	Persist
I try to grow as a person as a result of the experience.	COPE-1	.06	<b>-.42</b>
I get used to the idea that it happened.	COPE-13	<b>.49</b>	-.14
I accept that this has happened and that it can't be changed.	COPE-21	<b>.45</b>	-.21
I try to see it in a different light, to make it seem more positive.	COPE-29	<b>.73</b>	.20
I look for something good in what is happening.	COPE-38	<b>.70</b>	.03
I accept the reality of the fact that it happened.	COPE-44	<b>.62</b>	-.11
I learn to live with it.	COPE-54	<b>.68</b>	-.10
I learn something from the experience.	COPE-59	<b>.71</b>	.01
I understand my life's meaning.	MIL-1	.06	<b>-.81</b>
My life has a clear sense of purpose.	MIL-4	-.07	<b>-.89</b>
I have a good sense of what makes my life meaningful.	MIL-5	.04	<b>-.82</b>
I have discovered a satisfying life purpose.	MIL-6	-.08	<b>-.77</b>
My life has no clear purpose.	MIL-9*	<b>.40</b>	.10
Eigenvalues After Eotation	--	3.14	3.19
Percentage of Variance	--	28.59	17.90
$\alpha$	--	.75	.85

*Note.* Factor loadings over .4 appear in bold. \* indicates reverse-scored item. (COPE: Carver, Scheier, & Weintraub, 1989) (MIL: Steger, Frazier, Oishi, & Kaler, 2006).

Table S2. Principal components analysis for the shift-&-persist measure.

To justify measuring shift and persist as one construct, a principle components analysis with an oblique rotation (direct oblimin) was conducted in SPSS version 25. Sampling adequacy was acceptable (KMO = .79). Two components, a shift and a persist component, were requested, both producing eigenvalue's over Kaiser's criterion of 1. Together, these two components explained 46.49% of the variance in the 13 items. An oblique rotation, which allows the two factors to be correlated with each other (Field, 2013), was conducted due to the proposed significant correlation between shift and persist. The rotated factor loadings, the post-rotation eigenvalues,

the percentage of the variance explained by each factor, and the reliability of each factor are shown in Table S2. Overall, the items that load onto each factor suggest that factor 1 represents shift, while factor 2 represents persist. When treated as subscales of the one construct shift-&-persist, these subscales were significantly positively correlated ( $r = .279, p < .001$ ). Based on these findings, in conjunction with theoretical work asserting that shift and persist are most effective when operating in tandem (Chen & Miller, 2012) and past empirical work measuring shift-&-persist as one construct (Lam et al., 2018), subsequent analyses were conducted using the 13-item measure of shift-&-persist.

## APPENDIX C: CULTURALLY-INFORMED S&P

### Schmid-Leiman Transformation

To illustrate the contribution of the higher-order factor relative to the 1<sup>st</sup> order factors in explaining variance in the observed items, we performed a Schmid-Leiman Transformation (Schmid & Leiman, 1957). This process does not alter the explanatory power of the second-order factor model (Wang & Wang, 2019), but does allow for a more nuanced understanding of the relative strength of the 1<sup>st</sup> and 2<sup>nd</sup>-order factors (see Brown, 2015 for detailed description). Standardized results are presented in Table S3. Of particular interest would be Column C, which estimates how strongly each observed item loads directly on the higher-order factor. Columns G and H illustrate the unique amount of variance in each item explained by the 2<sup>nd</sup> and 1<sup>st</sup>-order factors, respectively. This can be accomplished because, through this transformation, the first-order factors are orthogonal with the higher-order factor, culturally-informed S&P (Brown, 2015). As expected, the 1<sup>st</sup>-order factors appear to account for a greater amount of variance than does the 2<sup>nd</sup>-order, culturally-informed S&P factor. Nonetheless, the 2<sup>nd</sup>-order factor is, in some cases, explaining as much as 56% of the variation in certain items, further providing evidence for the utility of measuring culturally-informed S&P. Again, given that this higher-order construct is intended to theoretically represent the shared variation between conceptually-overlapping, culturally-informed coping strategies practiced by members of marginalized groups, we did not expect the extremely high magnitude of 2<sup>nd</sup>-order factor loadings and variance explained frequently found in measures of other higher order constructs such as *g* (intelligence) or *p* (psychopathology; Caspi et al., 2014). Nonetheless, results of this transformation, combined with the protective effects of culturally-informed S&P suggest that measuring spiritually-based coping and critical civic engagement adds to the study of S&P in the context of discrimination.

### Sensitivity Analyses

Firstly, to demonstrate the utility of using a higher-order factor model with culturally-informed S&P over a correlated-factor model, we used the factor score regression approach to enter each 1<sup>st</sup> order factor (shift, persist, CCE, and spiritually-based coping) from our correlated factors

model, along with ERI and discrimination, as predictors of depression. Overall, these results were difficult to interpret. Spiritually-based coping predicted greater levels of depression ( $b=.165, p=.002$ ) despite not being correlated with depression. Discrimination predicted greater depressive symptoms ( $b=.131, p=.005$ ), while persist predicted fewer symptoms ( $b=-.530, p<.001$ ). Shift, which was negatively correlated with depression ( $r=-.275, p<.001$ ) did not predict depressive symptoms ( $b=.060, p=.375$ ), nor did ERI ( $b=-.061, p=.182$ ) or CCE ( $b=-.029, p=.571$ ). These inconsistent results highlight and mirror problems with suppressor effects and conceptually difficult to interpret beta coefficients frequently found in coping research among minoritized groups (Gaylord-Harden et al., 2010) and support the use of a more-interpretable higher-order factor that accounts for and partially explains the complex association between these constructs.

Finally, based on literature that the impact of component strategies such as CCE might be differentially predictive of psychological functioning based on race (Hope et al., 2018), we used the factor scores from our higher-order model (Model C) tested whether path coefficients in our factor score regression model differed between monoracial Black and Latinx participants. Because our multiple regression model was tested using MLR, we employed a simple procedure to compute a scaled chi-square difference test (see Satorra & Bentler, 2010 for equation). Compared to the fully constrained model, where all paths were fixed to equality across race, neither the fully unconstrained model ( $\chi^2\Delta(7)=12.038, p=.099$ ), where all paths were free to vary by race, nor any combination of unconstrained specific paths resulted in a significant improvement in model fit, tentatively implying that the model results were equivalent across racial/ethnic groups.

This sensitivity analysis should be interpreted with caution, as the comparison of regression paths across groups, importantly, assumed metric/weak invariance, or invariance of factor loadings across groups (Hsiao & Lai, 2018), including both first-order and higher-order factor loadings. As stated in the limitations, we did not have the sample size to conduct full higher-order measurement invariance testing. Problems that arose from our small comparison groups included 3 of the persist items missing a response options in the Black or Latinx group;



measurement invariance for categorical items cannot be tested when certain categories are not reported by any members of a group. Solutions include conducting measurement invariance assuming normality, which we deemed inappropriate due to the binary nature of our critical civic engagement items, and collapsing across categories, which leads to a loss of information and has the potential to change the basic nature of our model (Muthén, 2005). With increased sample sizes this issue would be likely to resolve. Additionally, given our small N's for Black (N = 198) and Latinx participants (N = 81), we are likely highly underpowered to find any noninvariance in our sample even if it were to exist at the population level. Future work should utilize larger and more numerically balanced samples of ethnic minority youth to test for multigroup measurement invariance by race.

Column	A	B	C	D	E	F	G	H
Item	1 <sup>st</sup> -order Factor Loading	2 <sup>nd</sup> - order Loading	<b>Item: 2<sup>nd</sup>- Order Factor (A*B)</b>	√ of Residual Variance	Residualized Primary Loading (A*D)	Factor Loading R <sup>2</sup> (C <sup>2</sup> +E <sup>2</sup> )	<b>2<sup>nd</sup>- Order R<sup>2</sup> (C<sup>2</sup>)</b>	<b>1<sup>st</sup>- order loading R<sup>2</sup> (E<sup>2</sup>)</b>
Persist 1	0.816	0.775	<b>0.632</b>	0.632	0.515	0.665	<b>0.400</b>	<b>0.266</b>
Persist 2	0.8	0.775	<b>0.62</b>	0.632	0.505	0.64	<b>0.384</b>	<b>0.255</b>
Persist 3	0.307	0.775	<b>0.238</b>	0.632	0.194	0.767	<b>0.057</b>	<b>0.038</b>
Persist 4	0.876	0.775	<b>0.679</b>	0.632	0.553	0.359	<b>0.461</b>	<b>0.306</b>
Persist 5	0.599	0.775	<b>0.464</b>	0.632	0.378	0.631	<b>0.216</b>	<b>0.143</b>
Persist 6	0.42	0.775	<b>0.326</b>	0.632	0.265	0.684	<b>0.106</b>	<b>0.070</b>
Persist 7	0.696	0.775	<b>0.539</b>	0.632	0.440	0.532	<b>0.291</b>	<b>0.193</b>
Shift 1	0.794	0.819	<b>0.650</b>	0.574	0.455	0.835	<b>0.423</b>	<b>0.207</b>
Shift 2	0.827	0.819	<b>0.677</b>	0.574	0.474	0.49	<b>0.459</b>	<b>0.225</b>
Shift 3	0.729	0.819	<b>0.597</b>	0.574	0.418	0.094	<b>0.356</b>	<b>0.175</b>
Shift 4	0.914	0.819	<b>0.749</b>	0.574	0.524	0.177	<b>0.560</b>	<b>0.275</b>
Shift 5	0.7	0.819	<b>0.573</b>	0.574	0.402	0.484	<b>0.329</b>	<b>0.161</b>
Civ 1	0.648	0.173	<b>0.112</b>	0.985	0.638	0.419	<b>0.013</b>	<b>0.407</b>
Civ 2	0.869	0.173	<b>0.150</b>	0.985	0.856	0.754	<b>0.023</b>	<b>0.733</b>
Civ 3	0.609	0.173	<b>0.105</b>	0.985	0.600	0.37	<b>0.011</b>	<b>0.360</b>
Civ 4	0.939	0.173	<b>0.162</b>	0.985	0.925	0.882	<b>0.026</b>	<b>0.855</b>
Spir 1	0.954	0.375	<b>0.358</b>	0.927	0.885	0.911	<b>0.128</b>	<b>0.783</b>
Spir 2	0.934	0.375	<b>0.350</b>	0.927	0.866	0.872	<b>0.123</b>	<b>0.750</b>
Spir 3	0.698	0.375	<b>0.262</b>	0.927	0.647	0.487	<b>0.069</b>	<b>0.419</b>
Spir 4	0.967	0.375	<b>0.363</b>	0.927	0.897	0.935	<b>0.131</b>	<b>0.804</b>

Note. Values have been rounded to the thousandths place.

Table S3. Schmid-Leiman Transformation of higher-order factor model.

## APPENDIX D: PATTERNS OF S&P COPING

### Creating a Unidimensional Measure of Attitudinal Familism

Although researchers have often used composite scores of all 18 items as a measure of overall familism values (Schwartz, 2007), Lugo Steidel and Contreras (2003) posit a four-factor structure of the Attitudinal Familism Scale. Because items used in MNLFA should first be determined to measure a unidimensional factor based on past empirical and conceptual work, as well as preliminary data analysis (Bauer, 2017; Curran et al., 2014), we first conducted an exploratory factor analysis using an oblique rotation on the whole sample ( $N = 694$ ) due to concerns of multidimensionality. Relying on a scree plot and eigenvalues above one, a three-factor solution was judged to best fit the data. However, after trimming items with loadings below  $|.50|$  and items that cross-loaded on another factor at above  $|.30|$ , common practices outlined by Matsunaga (2010), only two factors remained. These factors included: a 10-item factor including at least one item from each of Lugo Steidel and Contreras's (2003) original four factors, and a second factor containing only two items relating to living with parents until one is married and giving childhood earnings to one's parents.

This 10-item factor provided broad conceptual coverage of the familism construct across Lugo Steidel and Contreras's (2003) proposed dimensions of familism values: support, honor, interconnectedness, and subjugation of the self. When assessed using confirmatory factor analysis on the same, full sample, this 10-item factor provided an adequate fit to the data ( $\chi^2 (35) = 167.612, p < .001, RMSEA = .074, CFI = 0.943, SRMR = .037$ ). Given these items' broad conceptual coverage of familism and their adequate model fit when specified as a single factor in our confirmatory factor analysis (see Table S1 for list of retained items and standardized factor loadings), this 10-item factor ( $\alpha = 0.849$ ) was retained as our unidimensional measure of familism and used in subsequent analyses.

### Contribution Using MNLFA on Measures Used as Profile Indicators

To facilitate the most accurate possible representations of the patterns of coping employed by our sample of minoritized adolescents and emerging adults, we first conducted an extensive exploration of measurement invariance and DIF using MNLFA. While the scalar invariance of Diemer et al.'s (2020) short critical consciousness scale was recently established across race/ethnicity, grade level (used as a proxy for age), and gender, all tested independently of each other (Rapa et al., 2020), this is the first study to examine invariance and DIF of Lam et al.'s (2018) S&P scale. Additionally, none of these scales have been evaluated for invariance and DIF using MNLFA, a technique that provides a more rigorous test of measurement invariance than typical multi-group CFA by allowing researchers to test for invariance among multiple constructs at a time, test for invariance using continuous variables (e.g., age), and test for invariance due to interactions between different constructs (Curran et al., 2014; Bauer, 2017; Gottfredson et al., 2019). Overall, our tests indicated several small but significant systematic differences in factor means, particularly for the shift and critical action factors. While our sample of 13 to 25-year-olds differs from Rapa et al.'s (2020) sample of fourth to 12<sup>th</sup> graders, our findings do suggest that, when invariance is estimated simultaneously across multiple constructs, factor means for Diemer et al.'s (2020) critical action subscale may vary based on age, gender, and the interaction between Multiracial/Multiethnic status and age. Beyond identifying potential measurement invariance, however, we used Gottfredson et al.'s (2019) aMNLFA R package to compute factors scores on each of these coping factors that were adjusted for all observed invariance and DIF. These adjusted factor scores, thus, functioned as more accurate indicators of coping frequency than would mean scores that, inherently, do not account for invariance.

Item Number	Standardized Factor Loading	Item
FAM1	.620	Children should always help their parents with the support of younger brothers and sisters, for example, help them with homework, help the parents take care of the children, and so forth.
FAM2	.514	The family should control the behavior of children younger than 18.
FAM5	.680	A person should always support members of the extended family, for example, aunts, uncles, and in-laws, if they are in need even if it is a big sacrifice.
FAM6	.575	A person should rely on his or her family if the need arises.
FAM8	.585	Children should help out around the house without expecting an allowance.
FAM10	.708	A person should often do activities with his or her immediate and extended families, for example, eat meals, play games, or go somewhere together.
FAM11	.518	Aging parents should live with their relatives.
FAM12	.680	A person should always be expected to defend his/her family's honor no matter what the cost.
FAM16	.697	A person should help his or her elderly parents in times of need, for example, helping financially or sharing a house.
FAM17	.718	A person should be a good person for the sake of his or her family.

Table S4. Item and Confirmatory Factor Analysis Standardized Factor Loadings of our 10-item Familism Measure.

Fit Index	Persist (7 items)*	Shift (6 items)	Civic Engagement (5 items)	Religious Coping (7 items)	Familism Values (10 items)
$\chi^2$ (df)	360.080 (14)	90.583 (9)	65.508 (5)	114.584 (14)	167.612 (35)
p-value	<.001	<.001	<.001	<.001	<.001
RMSEA	.189	.114	.132	.102	.074
CFI	.756	.957	.963	.982	.943
SRMR	.100	.035	.030	.014	.037

*Note.* Latent variables measurement models estimated separately. \* = If three persist reverse-coded items were allowed to correlate, model fit is adequate ( $\chi^2$  (11) = 114.758,  $p < .001$ ,  $RMSEA = .117$ ,  $CFI = .927$ ,  $SRMR = .045$ ) and constitutes a significant improvement over the original model ( $\chi^2\Delta$  (3) = 245.322,  $p < .001$ ). Given restrictions when conducting aMNLFA, however, these items were not allowed to correlate when testing for mean impact, variance impact, and DIF.

Table S5. Model Fit Statistics of Factors Prior to MNLFA (N = 694).

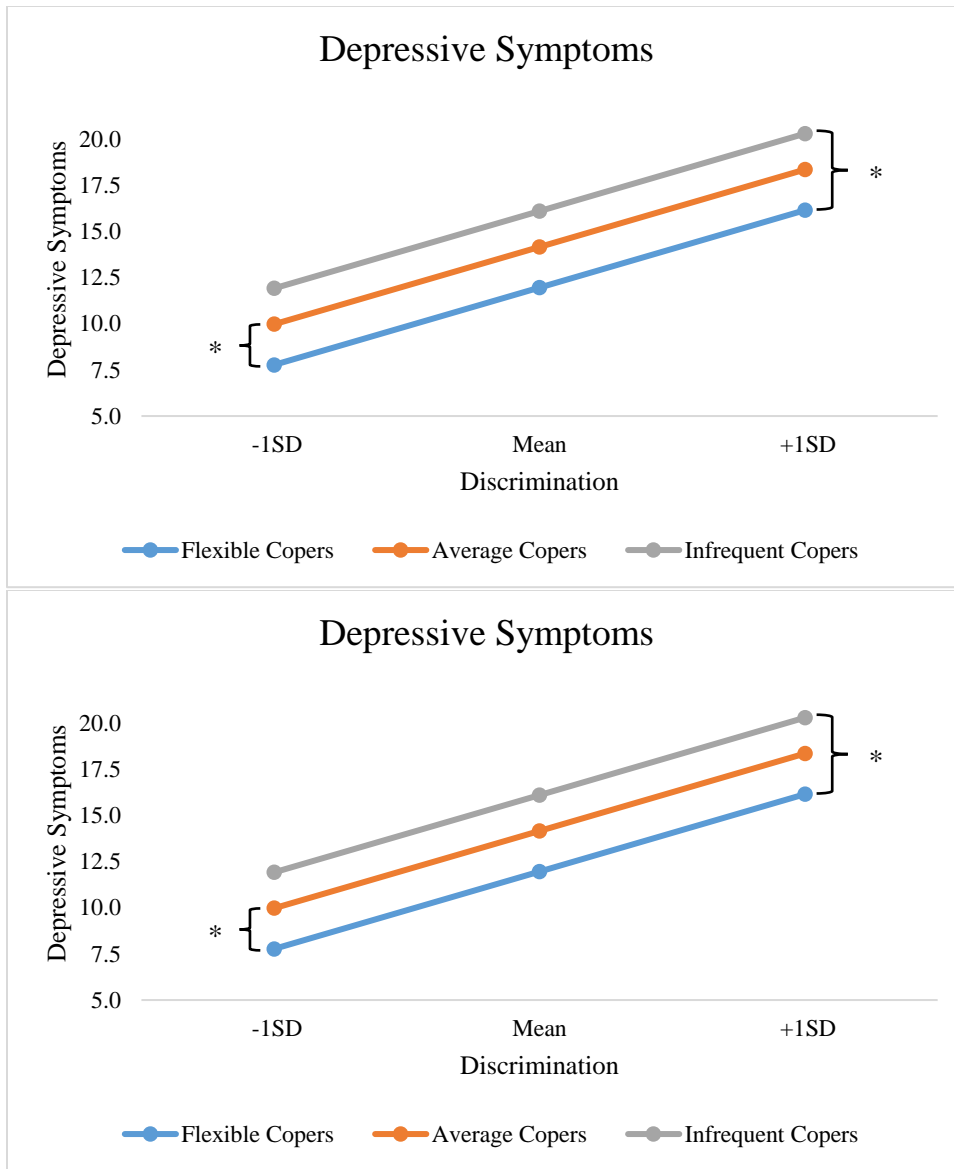
Profile	Profile Indicator				
	Shift	Persist	Critical Action	Religious Coping	Familism
Flexible Copers (N = 322)	0.317	0.362	-0.038	0.887	0.358
Average Copers (N = 214)	-0.250	-0.210	0.118	-0.207	-0.168
Infrequent Copers (N = 158)	-0.315	-0.455	-0.075	-1.509	-0.501

Table S6 Standardized Factor Scores by Profile.

Outcome/Predictor	Flexible Copers		Average Copers		Infrequent Copers	
	<i>B (S.E.)</i>	<i>p</i>	<i>B (S.E.)</i>	<i>p</i>	<i>B (S.E.)</i>	<i>p</i>
<b>Depressive Symptoms</b>						
ERI	-1.268 (0.635)	.046	-1.170 (0.800)	.144	-2.203 (1.101)	.045
Discrimination	4.230 (0.811)	<.001	3.436 (1.093)	.002	4.731 (1.269)	<.001
ERI*Discrimination	0.175 (0.745)	.815	-0.942 (1.295)	.467	-1.100 (1.185)	.353
Female	1.104 (0.915)	.227	1.104 (0.915)	.227	1.104 (0.915)	.227
SES	-1.017 (0.424)	.016	-1.017 (0.424)	.016	-1.017 (0.424)	.016
<b>Environmental Mastery</b>						
ERI	0.209 (0.083)	.011	0.139 (0.092)	.131	0.019 (0.123)	.879
Discrimination	-0.257 (0.088)	.004	-0.226 (0.109)	.039	-0.216 (0.136)	.114
ERI*Discrimination	-0.048 (0.096)	.617	-0.073 (0.133)	.585	0.091 (0.126)	.473
Female	-0.039 (0.095)	.680	-0.039 (0.095)	.680	-0.039 (0.095)	.680
SES	0.143 (0.041)	<.001	0.143 (0.041)	<.001	0.143 (0.041)	<.001

*Note.* Wald tests indicate that values of each predictor across the different profiles are not significantly different from each other, justifying their being constrained to equality.

Table S4 Predictors of Depressive Symptoms and Environmental Mastery Estimated Freely by Profile.



*Note.* As outlined in the associations with depressive symptoms and environmental mastery section, the effect of discrimination on outcomes is equal across profiles (i.e., slopes are equal), but those in the *Flexible Copers* profile endorse fewer depressive symptoms and greater environmental mastery than all other profiles. \* =  $p \leq .05$ .

Figure S1. Plot of the Discrimination's Effect on Depressive Symptoms and Environmental Mastery).