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ICPSR is a center within the Institute
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From Director George Alter

We are very proud to present the first-place winners of the 2012 ICPSR Research Paper Competitions in this special edition of the *Bulletin*. The submissions this year addressed a wide range of topics and made extraordinary and unexpected use of ICPSR's data holdings.



Quentin Karpilow of Kenyon College, an ICPSR Summer Intern in 2011, won the first-place prize in the Undergraduate Competition with a paper examining pretrial detention outcomes for people accused of drug felonies. The paper used State Court Processing Statistics, 1990-2006, County Characteristics (2000-2007), 1998 and 2000 Uniform Crime Reports, and the 1999 National Jail Census to examine pretrial release outcomes for adult defendants charged with drug felonies according to their racial or ethnic backgrounds and various community and incarceration settings.

Zornitsa Kalibatseva of Michigan State University won the Master's Competition with her paper that uses the National Comorbidity Survey to examine the differences in symptoms of depression between Asian Americans and European Americans.

The first-place award in the Resource Center for Minority Data Paper Competition was won by Amanda Mireles of Princeton University for her paper in which she analyzed data from the Early Childhood Longitudinal Study to measure academic achievement of Hispanic students.

Congratulations to the winners, and thanks to all participants for their efforts!

About ICPSR

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Racial and Ethnic Threats in Pretrial Release Processing

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Abstract

Although extant research highlights the importance of race in determining pretrial detention outcomes, few studies have examined the ecological factors that shape these extralegal disparities. Building on minority threat theories, this project uses hierarchical modeling techniques to examine how county-level ethnic and racial composition impacts pretrial release outcomes for adult defendants charged with drug felonies. Results indicate that racial and ethnic threats significantly influence the amount of bail set, the probability a defendant posts bail, and the likelihood a defendant is detained prior to trial. The paper concludes with a discussion of the structural differences between racial and ethnic threats.

1. Introduction

Although studies of courtroom racial/ethnic biases have traditionally focused on final sentencing outcomes, recent scholarship marks the pretrial release stage as a crucial site for producing and promoting racial/ethnic injustices (Freiburger & Hilinski 2010). Blacks and Hispanics are more likely than Whites to be denied bail, receive higher bail amounts, fail to post bail, and be detained prior to trial (Schlesinger 2005). The legal and social ramifications of this racial/ethnic bias are severe: While pretrial detention increases the likelihood of conviction (Schlesinger 2007), incarceration limits economic opportunities, destabilizes social networks, and increases chances of criminal recidivism (Freiburger, Marcum & Pierce 2010).

Despite the importance of the pretrial release process to the well-being of the defendant and the equity of the criminal justice system, the literature on pretrial judicial decision-making remains underdeveloped. In particular, extant research has failed to examine how social ecology structures preadjudication racial/ethnic disparities. Given that courtroom actors are nested within the social, economic and ideological contexts of the surrounding community (Johnson 2006), studying the ecological predictors of pretrial detention outcomes can yield key insights into how racial/ethnic bias forms during the pretrial release process.

To address this gap in the literature, the present research uses pretrial detention data on adult drug felony defendants to examine how social context shapes judicial decision-making during the pretrial release process. Drawing upon minority threat theories, this study tests whether county-level racial/ethnic composition impacts (1) the decision to deny a defendant bail, (2) the decision to offer a defendant a nonfinancial release option, (3) the level of bail set by a judge, (4) the likelihood that the accused will post bail, and (5) the probability that the defendant will be released prior to trial. To this end, the following essay is divided into six parts. Section 2 establishes the theoretical framework for examining minority threat effects in the context of

pretrial detention, as well as provides an overview of the relevant empirical literature. Sections 3 and 4 then describe the data and methodology used to test the minority threat hypothesis for pretrial detention outcomes. Section 5 presents model results and section 6 concludes the paper with a discussion of the theoretical implications that stem from these findings.

2. Minority Threats: Theory and Related Literature

Minority threat theories argue that there is a community-level component to courtroom racism. Specifically, the theory posits that White elites view the growth of racial/ethnic minority populations as an imminent threat to their socio-economic dominance (Kane 2003). In an attempt to neutralize this perceived danger, the governing strata will use a variety of social control mechanisms such as policing or imprisonment to “manage” or oppress threatening subpopulations. As a result, defendants adjudicated in counties with large minority communities are expected to face a more punitive judicial environment, with those minorities deemed most dangerous receiving the harshest punishments (Wang & Mears 2010).

In addition to positing that minority threats condition individual-level race/ethnicity effects, a number of theorists hypothesize that minority threat effects have a nonlinear structural form (Liska 1992). Keen & Jacob (2009), for instance, suggest that minority population growth initially leads to a tightening of social control mechanisms; however, once the racial/ethnic group is large enough to significantly influence local political outcomes, stringent social control measures begin to relax as the subpopulation asserts its new governing powers. Consequently, these theories predict an inverted U-shaped relationship between county-level racial/ethnic composition and pretrial adjudication severity.

Despite the extensive theoretical foundations for a minority threat phenomenon, empirical testing has yielded mixed results. Britt (2000), for instance, finds that the proportion of county

population that self-identifies as Black (i.e., percent Black) is positively and linearly correlated with the likelihood of incarceration, but negatively associated with sentence length. In contrast, Ulmer & Johnson (2004), using the same dataset from a later time period, conclude that neither incarceration decisions nor sentencing lengths are significantly associated with percent Black. These studies, however, may have misspecified the structural form of the minority threat. Kane (2003), for instance, finds evidence of nonlinear associations between percent Hispanic and police deployment patterns. Similarly, Wang & Mears' (2010) more recent analyses point to curvilinear relationships between minority populations and sentencing severity; importantly, this study also finds that percent Hispanic and percent Black exert opposite effects on sentencing outcomes, alluding to important differences between racial and ethnic threats.

While inconsistencies plague the minority threat literature on final sentencing, I was only able to identify two studies that directly tested for minority threat effects on pretrial release outcomes. The first utilizes data from 65 counties in a northeastern state to examine the effects of minority population size on the pre-adjudication detention of juvenile delinquents (Armstrong & Rodriguez 2005). Although results indicate that percent minority positively impacts the likelihood of pretrial incarceration, the fact that the sample of defendants is drawn from a single state and that the criminal justice process clearly differs between juveniles and adults limits the extent to which these findings can be generalized. Moreover, Armstrong & Rodriguez's (2005) decision to aggregate African Americans, Asians and American Indians into a single minority threat masks the possibility that minority threat effects vary by racial/ethnic group.

The second study to test the minority threat hypothesis in the context of pretrial detention is an unpublished doctoral dissertation (Junkhyuk 2009). Junkhyuk uses the *State Court Processing Statistics (SCPS)* database to test whether racial composition and economic deprivation explain

between-county variation in pretrial detention outcomes. Strikingly, the study fails to find a consistent relationship between minority population size and criminal justice severity: while percent Black and percent Hispanic are positively correlated with the likelihood of being denied bail, percent Black is found to be *negatively* associated with the amount of bail set for a defendant. These contradictory findings may, however, stem from a number of methodological and theoretical shortcomings. First, the study fails to adequately address the issue of missing data and, as such, may suffer from biased coefficients. More importantly, the study does not test for nonlinear minority threat effects and so may suffer from model misspecification.

Thus, a review of the literature on final sentencing and pretrial detention indicates two areas for further research. The first revolves around the lack of contextual predictors in pretrial detention analysis; the second centers on the unresolved debate over racialized social control and the need to extend tests of the minority threat hypothesis to different criminal justice outcomes. The present study exploits the overlap between these two research agendas by examining whether the racial context in which defendants' are adjudicated influences pretrial release outcomes. Specifically, this paper seeks to (1) test the minority threat hypothesis on pretrial release outcomes, (2) identify the structural form of significant racial/ethnic threat effects, and (3) determine whether Black (Hispanic) threat effects fall hardest on Black (Hispanic) defendants.

3. Data and Variables

3.1 Data

To determine the extent to which minority threats impact the pretrial release process, this study merges data drawn from the *State Court Processing Statistics (SCPS), 1990-2006* with an array of county-level variables. Since the effects of legal and extralegal sentencing predictors

may vary across crime categories (Schlesinger 2005), the scope of the current analysis is restricted to Black, Hispanic, and White defendants charged with drug felonies in 1998 and 2000.

The SCPS data contains detailed information on felony cases adjudicated in large urban U.S. counties. The database is notable for its rich array of data on the demographic characteristics, criminal history, arrest charges, and pretrial release processing of felony defendants. Of course, no dataset is perfect and Schlesinger (2005) highlights three important limitations of SCPS: (1) rural courts are not represented in the sample, (2) the database lacks information on the defendants' employment status, family ties, and residential stability, and (3) the dataset does not contain information on judge characteristics.

Contextual variables are drawn from a variety of data sources. Measures of county racial composition, economic health and education levels are derived from the 2000 Census. Indicators of county crime levels come from the 1998 and 2000 Uniform Crime Reports, while measures of jail space are derived from the 1999 National Jail Census. Data on county political orientations are collected from ICPSR's *County Characteristics (2000-2007)* database and information on state sentencing structures is drawn from Stemen & Wilson (2005).

3.2 Dependent Variables

Five dependent variables are used to represent the pretrial release process: (1) a binary indicator for whether a defendant is denied bail (1=yes), (2) a dichotomous variable for whether a judge grants a defendant a nonfinancial or financial release option (1=nonfinancial), (3) the logged bail amount set by a judge¹, (4) an indicator variable for whether a defendant posts bail (1=yes), and (5) a dummy for whether the defendant is ultimately detained prior to trial (1=yes). The advantage of dividing the pretrial release process into these five critical junctures is that it

¹ A log transformation was used due to severe skewness of the bail amounts.

allows the researcher to distinguish between legal decisions and processing outcomes (Demuth 2003). Legal decisions (variables 1, 2, and 3) are the direct product of judicial decision-making; in contrast, processing outcomes (variables 4 and 5) reflect both the legal decisions and the defendant's ability to respond to those legal decisions (Schlesinger 2005). For instance, whether a defendant posts bail depends both on the level of bail set and the defendant's economic resources.

3.3 Minority Threat Variables

Percent Black and percent Hispanic of county population measure racial and ethnic threats. Since minority population size is by far the most commonly used measurement of minority threats (Wang & Mears 2010), results from this study can be compared to a wide range of minority threat studies. To address the possibility of nonlinear minority threat effects, second degree percent Black and percent Hispanic polynomials are included in analyses.

3.4 Controls

In accordance with the pretrial detention literature, models contain a variety of legal and extralegal variables. To control for the defendant's criminal history, models contain the following measures: total number of prior felony convictions, total number of prison sentences, a dummy indicating whether the defendant ever previously failed to make a court appearance (1=yes), and a dummy that signifies whether the defendant had an active criminal justice status at the time of arrest (1=active). In addition, regressions include a binary indicator coded "1" if the individual is charged with a drug sales crime and "0" otherwise. Female, Black and Hispanic dummy variables (1=yes) control for relevant extralegal characteristics. Following the lead of extant literature (Schlesinger 2005), age and age squared are included.

Models also control for relevant county characteristics. Per capita income and percentage of families living below the poverty line measure county economic health, while UCR index crime rates account for possible associations between pretrial detention outcomes and county crime levels. A measure of local jail capacity is also included.² Since prior research suggests that criminal sentencing is more severe in politically conservative communities (Fearn 2005), regressions use percentage of the county population that voted for George Bush in the 2004 presidential election as a proxy for county political orientation. To account for possible variation in courtroom attitudes towards drug crimes, models also contain a dummy variable for whether there exist statewide habitual offender laws for drug charges. By increasing the sentencing length for drug offenders with prior felony convictions, states that enact habitual drug offender laws take a more punitive stance towards drug crimes. The daily decisions of local judges may reflect this “official” position on drug infractions. Lastly, all models include a year dummy (1=2000).

Table 1 reports the sample means for both dependent and explanatory variables by race/ethnicity, while table 2 provides zero-order correlations for ecological measures. Descriptive statistics indicate that Hispanics face less favorable outcomes than Whites at all five stages of the pretrial release process. In contrast, Black-White differentials seem to vary by pretrial release outcome. Black and Hispanic defendants are also more likely than Whites to be adjudicated in counties with large minority populations, low per capita incomes, high poverty levels, and high crime rates. Table 2 suggests that multicollinearity will not be a problem in analyses. Since intercorrelations do not exceed 0.70 and variance inflation factors were found to be less than 5 for all individual and contextual variables, prior research suggests that standard errors will not be drastically inflated (Kane 2003).

² Jail space was calculated as the total rated capacity of jail facilities within a county divided by the total county-level jail population in 1999. Hence, values greater than 1 indicate that county jails have space to house additional detainees.

Table 1: Descriptive Statistics

	Black N=4413	White N=2531	Hispanic N=2814	Total N=9758
Dependent Variables				
Bail denial	0.055	0.056	0.063	0.054
Nonfinancial release	0.317	0.383	0.335	0.34
Bail amount (logged)	8.83	9.01	9.49	9.04
Held on bail	0.46	0.398	0.60	0.47
Pretrial detention	0.34	0.295	0.43	0.34
Individual Level Predictors				
Age	30.96	32.71	29.94	31.31
Female	0.17	0.27	0.12	0.19
Drug sales	0.53	0.37	0.50	0.47
Number of charges	1.97	2.23	2.13	2.07
Prior failure to appear before court	0.37	0.28	0.36	0.34
Number of prior felony convictions	1.41	0.94	0.89	1.11
Number of prior prison sentences	0.54	0.27	0.34	0.42
Active criminal status	0.39	0.34	0.40	0.38
Contextual Level Predictors				
Percent Black	24.74	22.05	18.16	21.01
Percent hispanic	19.54	14.56	32.88	23.03
Per capita income	22959.59	24108.58	22808.45	23139.87
Family poverty	12.06	9.04	12.85	11.45
Crime rate	11.33	9.57	13.95	12.07
Jail space	1.02	0.98	0.99	0.99
Bush votes	35.82	44.95	39.10	39.25
Drug habitual	0.07	0.15	0.12	0.11
Year	0.55	0.57	0.50	0.53

Table 2: Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Percent Black (1)	1.00							
Percent Hispanic (2)	-0.34	1.00						
Per capita income (3)	-0.12	-0.23	1.00					
Family poverty (4)	0.38	0.38	-0.53	1.00				
Crime rate (5)	-0.19	0.46	-0.20	0.16	1.00			
Jail space (6)	0.11	-0.09	-0.13	0.26	-0.27	1.00		
Bush votes (7)	-0.52	0.06	-0.06	-0.53	-0.06	-0.08	1.00	
Drug habitual (8)	-0.26	-0.06	-0.08	-0.17	-0.01	0.17	0.32	1.00

4. Statistical Methods

With roughly 18% of the SCPS case histories containing missing values for at least one variable, missing data problems had to be addressed prior to model estimation. Following the lead of Wang & Mears (2010), this study used Patrick Royston's Imputation by Chained Equations (ICE) program to impute missing values. Like other multiple imputation procedures, ICE begins by filling in the missing data at random (Royston & White 2011). The first variable with missing values is then regressed on the remaining covariates in the dataset. Missing data are replaced with predicted values and the newly imputed variable is then used, along with the other covariates, to impute the missing values of the next variable. Once the missing values for each variable have been imputed, the entire imputation cycle is repeated 10 to 20 times, allowing for the stabilization of imputed values (Royston & White 2011). These iterations ultimately yield a complete dataset with no missing data. The imputation procedure is then repeated to generate multiple imputed datasets. Regression models are estimated separately on each dataset and parameters are then pooled across regression models, yielding the final results (Acock 2005).

The ICE procedure enjoys several advantages over more traditional approaches for working with missing data. First, the ICE package allows researchers to specify different estimation methods for different variables. Consequently, this study was able to use logistic models to impute values for binary variables and linear regressions to predict the missing values of "continuous" variables. Second, multiple imputation methods produce more accurate parameter standard errors that reflect the uncertainty of the imputation process itself (Azur, Stuart, Frangakis & Leaf 2011). As a result, ICE is viewed as superior to list-wise deletion, mean substitution or single imputation methods (Acock 2005).

For each pretrial release outcome, five imputed datasets were generated.³ All model variables were included in the multiple imputation process, although county-level missing values were addressed separately in order to simplify the ICE procedure.⁴ Observations with missing values in the dependent variable were deleted prior to imputation.

In light of the multilevel structure of the data, this study used hierarchical generalized linear models (HGLMs) to analyze minority threat effects. Because similarities are likely to occur among criminal cases that are adjudicated in the same county court, regression techniques that fail to correct for within-county error correlations will bias hypothesis testing results (Ulmer & Johnson 2004). Multi-level modeling, however, not only adjusts parameter standard errors to reflect this error heterogeneity, but also offers researchers the opportunity to explicitly model cross-county variation of the dependent variable. Moreover, by treating individual-level slope coefficients as random effects, researchers can explore how the effects of individual-level characteristics (e.g., race) vary across counties.

Racial and ethnic threats were tested in separate random coefficient models. Kane (2003) justifies the specification of individual racial and ethnic threat models on the grounds that Blacks and Hispanics “pose differential ‘threats’ to dominant group interests” (276). From a statistical standpoint, specifying Black and Hispanic threats as predictors in separate equations has the added advantage of reducing multicollinearity. Of course, testing for racial and ethnic threats in separate models also increases the chances of omitted variable bias. For instance, if Black threats are a function of Hispanic population size, coefficient estimates on percent Black will be biased

³ If the assumption of missing at random is satisfied, 5 imputations are sufficient to generate efficient and accurate estimations (Acock 2005).

⁴ The only contextual variable to contain missing values was jail space. Specifically, jail information was not provided for Bronx, Kings, Queens, New Haven, and Hawaii counties. Following Wang & Mears (2010) suggestion, the three New York counties were assigned New York City’s jail space value. For New Haven and Hawaii, imputed values were calculated based on racial composition, population size, percent Republican and income levels.

in regressions that do not include a percent Hispanic predictor. To explore this potential source of bias, models that included both Black and Hispanic threat predictors were estimated. While standard errors in the combined racial-ethnic threat model were (not surprisingly) higher, coefficient estimates on percent Black and percent Hispanic did not change. Thus, since these findings downplay concerns of omitted variable bias, only results from the separately estimated racial and ethnic threat models are presented in this paper.

Likelihood Ratio (LR) tests were then used to identify random intercepts and coefficients. While it would have been ideal to investigate random effects for all individual-level variables, simultaneously estimating the variance and covariance components for 12 parameters exceeded available computing capacity. Consequently, only the coefficients for Black and Hispanic dummies were allowed to vary across counties. Race/ethnicity coefficients that did not have significant between-county variation were treated as fixed effects. Finally, all models investigated the possibility of cross-level interactions between the percent Black (percent Hispanic) and Black (Hispanic) dummies; only significant interactions are displayed in the final results.

5. Findings

Estimates of the control variables are displayed in table 3. Results from the racial and ethnic threat hypothesis tests are presented in tables 4 and 5, respectively. Since control measures did not vary significantly between models, they are omitted from tables 4 and 5 to conserve space. For all three tables, odds ratios and coefficient estimates are provided for logistic and linear regressions, respectively; Z-scores are reported in parentheses. Estimates of intercept and race/ethnicity parameter variances are provided in the Random Effects section with variance standard errors reported in parentheses; “zero” indicates that race/ethnicity is a fixed effect.

- Pretrial Release Processing-

Table 3 Control Measures	Bail denial	Nonfinancial release	Bail amount (logged)	Held on bail	Pretrial detention
Individual Controls					
Age	1.03 (0.82)	0.97* (-1.76)	0.02** (2.19)	1.08*** (4.15)	1.07*** (4.72)
Age ²	1.00 (-0.95)	1.00* (1.93)	-0.00** (-2.01)	1.00*** (-3.51)	1.00*** (-4.23)
Female	0.79 (-1.60)	1.39*** (4.80)	-0.16*** (-3.84)	1.01 (0.09)	0.77 (-4.09)
Black	1.05 (0.31)	0.89 (-1.39)	-0.01 (-0.27)	1.86*** (6.54)	1.46*** (4.46)
Hispanic	1.49** (1.96)	0.56** (-2.70)	0.18*** (3.25)	2.35*** (3.56)	2.56*** (5.18)
Drug sales	1.45*** (3.25)	0.37*** (-15.74)	0.80*** (23.50)	0.77*** (-3.48)	1.96*** (12.69)
Number of charges	1.02 (0.84)	0.91*** (-4.27)	0.07*** (8.57)	0.96* (-1.93)	1.04** (2.46)
Bail amount (logged)	-	-	-	1.88*** (19.87)	-
Prior failure to appear before court	1.13 (1.01)	0.86 (-2.25)	0.04 (0.96)	1.46*** (4.92)	1.37*** (5.11)
Number of prior felony convictions	1.13*** (3.40)	0.79*** (-8.92)	0.04*** (3.12)	1.10*** (4.01)	1.21*** (9.94)
Number of prior prison sentences	1.06 (1.02)	0.94** (-1.27)	0.11*** (5.40)	1.05 (1.09)	1.12*** (3.46)
Active criminal status	11.27*** (18.39)	0.53*** (-9.45)	0.08** (2.28)	1.67*** (7.26)	2.55*** (16.00)
Contextual Controls					
Per capita	1.00 (-0.59)	1.00 (-0.66)	-0.00 (-1.50)	1.00 (-1.25)	1.00* (-1.89)
Family poverty	0.95 (-0.64)	0.99 (-0.12)	-0.10 (-3.16)	1.00 (0.00)	0.91*** (-3.10)
Crime rate	1.00 (0.17)	0.94 (-2.13)	-0.01 (-0.81)	0.99 (-0.31)	1.03* (1.88)
Jail space	1.48 (0.74)	0.73 (-0.76)	-0.06 (-0.27)	1.48 (1.60)	1.44* (1.77)
Percent Bush votes	1.01 (0.25)	0.96*** (-2.24)	0.00 (0.01)	1.00 (-0.42)	1.00 (0.44)
Drug habitual	1.64 (0.50)	3.79* (1.78)	-0.74** (-1.97)	1.61 (1.09)	0.62 (-1.34)
Year	1.02 (0.15)	1.24*** (2.54)	0.03*** (8.30)	0.92 (-1.07)	1.09** (1.48)
Sample Size	10,166	8,251	6,052	6,322	10,709

Significance levels: * p < .1; ** p < .05; *** p < .01

In line with prior research, table 3 reveals statistically significant race/ethnicity effects.

Interestingly, while Hispanics are more disadvantaged than Whites at all five pretrial release junctures, significant Black-White differentials only appear in processing outcome models. This suggests that Black-White pretrial release disparities stem more from differential access to economic resources than from racial bias in judicial decision-making.

5.1 Racial Threat Model

Table 4 presents the results for the racial threat model.⁵ While Black threats do not predict bail denial and nonfinancial release outcomes, racial composition is significantly correlated with the amount of bail set for a defendant, whether a defendant posts bail, and whether a defendant is detained prior to trial.

Table 4 Racial Threat Effect	Bail denial	Nonfinancial release	Bail amount (logged)	Held on bail	Pretrial detention
Percent Black	1.07 (1.20)	0.97 (-0.81)	-0.06*** (-2.79)	0.95** (-2.02)	0.94*** (-2.81)
Percent Black ²	1.00 (-1.02)	1.00 (0.60)	0.00** (2.46)	1.00 (1.14)	1.00** (2.09)
Random Effects					
Var(intercept)	2.79 (0.70)	1.69 (0.38)	0.44 (0.10)	0.66 (0.16)	0.47 (0.11)
Var(Black)	0.03 (0.39)	0.06 (0.56)	zero	zero	0.07 (0.06)
Var(Hispanic)	zero	0.05 (0.07)	0.02 (0.02)	0.20 (0.11)	0.09 (0.08)
Var(residual)	-	-	1.30 (0.02)	-	-

Significance levels: * p < .1; ** p < .05; *** p < .01

As expected, Black threats are curvilinear for both bail amount and pretrial detention outcomes. In contrast, racial composition is linearly associated with the probability of making bail. This linear relationship may, however, stem from multicollinearity problems. Note, for

⁵ All interactions between percent Black and Black were statistically insignificant and so are not displayed. Also, since residual errors are not estimated in logistic regressions, only the Bail amount model has estimates for the residual error variance.

instance, that the coefficient signs on the percent Black polynomials are consistent across all models that show significant threat effects.

Contrary to theoretical predictions, analyses depict a parabolic (as opposed to an inverted U-shaped) relationship between Black population size and criminal justice severity. Thus, bail amounts and pretrial detention probabilities decline during the earlier stages of Black population growth and then begin to rise once percent Black is sufficiently large. Equally surprising is the finding that larger Black communities increase a defendant's chances of posting bail. These threat effects are plotted below in figures 1 and 2.⁶

Figure 1: Predicted bail amounts versus percent Black

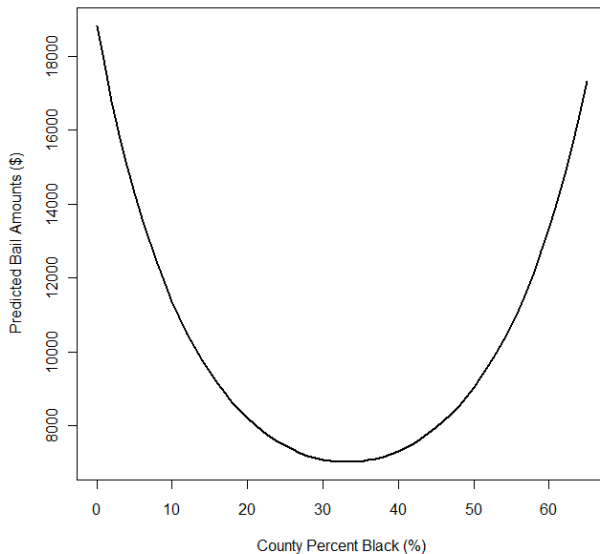
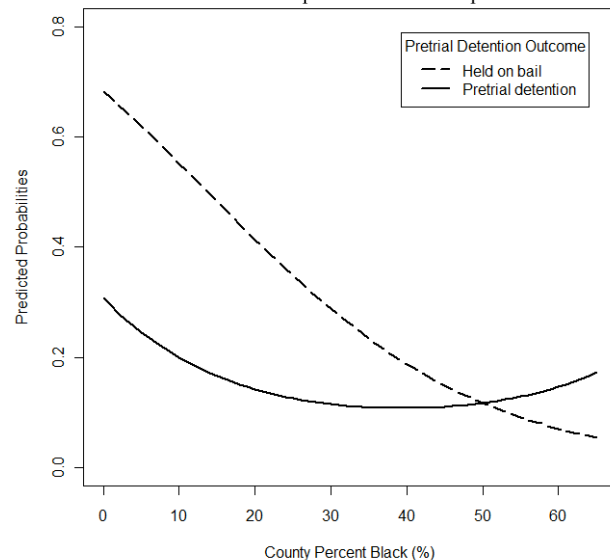


Figure 2: Predicted probabilities of being held on bail/detained prior to trial versus percent Black



5.2 Ethnic Threat Model

Table 5 presents the results from the ethnic threat model. County ethnic composition significantly impacts the probability of posting bail and the likelihood of being detained prior to

⁶ Figures 1 and 2 plot the model predictions for an average, Black male in the sample. To construct this representative Black male defendant, all individual- and contextual-level variables (save for the race/ethnicity, gender, and percent Black predictors) were held at their respective sample means. The probability plot was then generated by allowing percent Black to roam across its sample range (i.e., 1% to 65%). Thus, data points in figures 1 and 2 represent the predicted values for identical, Black, male defendants living in counties with varying Black population proportions. Subsequent probability plots are constructed using similar methods.

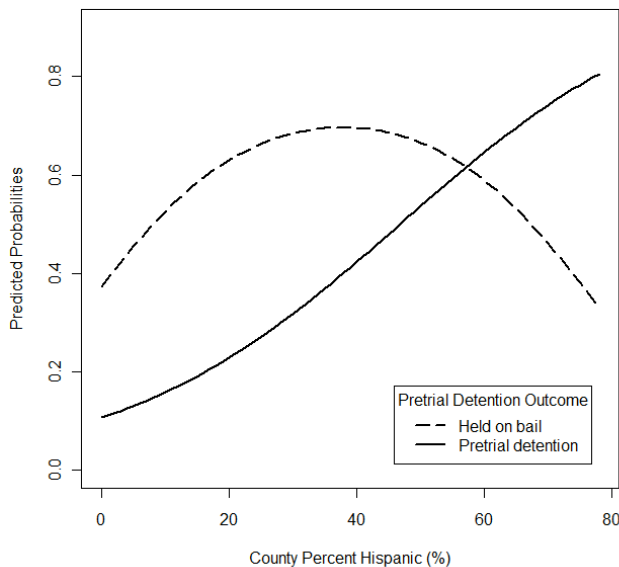
trial, but is uncorrelated with bail denial and nonfinancial release. Ethnic threats are only marginally significant in determining bail amounts.

Table 5 Ethnic Threat Effect	Bail denial	Nonfinancial release	Bail amount (logged)	Held on bail	Pretrial detention
Percent hispanic	0.97 (1.20)	1.01 (0.18)	0.03* (1.89)	1.09*** (4.41)	1.06*** (3.90)
Percent hispanic ²	1.00 (-1.02)	1.00 (-0.58)	-0.00 (-0.46)	1.00*** (-3.08)	1.00 (-1.49)
Hispanic-Percent Hispanic Interaction	-	1.01* (1.83)	-	0.99* (-1.67)	0.99*** (-2.62)
Random Effects					
Var(intercept)	2.66 (0.68)	1.83 (0.43)	0.46 (0.10)	0.56 (0.14)	0.34 (0.09)
Var(Black)	0.00	0.10 (0.06)	0.01 (0.01)	0.00	0.08 (0.06)
Var(Hispanic)	0.16 (0.14)	0.04 (0.08)	0.02 (0.02)	0.17 (0.10)	0.06 (0.06)
Var(residual)	-	-	1.30 (0.02)	-	-

Significance levels: * $p < .1$; ** $p < .05$; *** $p < .01$

The differences between ethnic and racial threats are striking. While analyses find a curvilinear relationship between percent Black and bail amount, percent Hispanic is (marginally) linearly associated with the judicial setting of bail levels. Similarly, while percent Black is linearly

Figure 3: Predicted probabilities of being held on bail and of pretrial detention amounts versus percent Hispanic

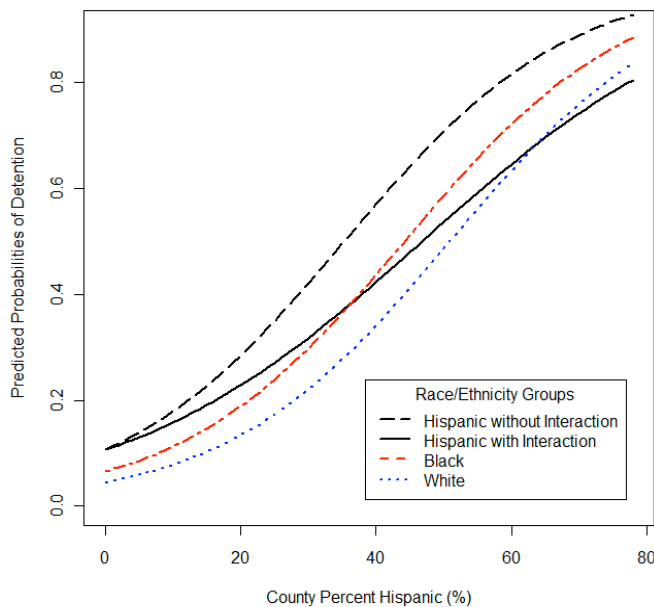


correlated with the likelihood of being held on bail, the county-level presence of Hispanics has a nonlinear effect on making bail. More surprising, however, is the reversal of signs: linear ethnic threat effects carry positive signs and curvilinear ethnic threats follow an inverted U-shaped pattern. This reversal is captured in the predicted probability plot shown in figure 3. Growing

Hispanic populations increase the probability of being held on bail until Hispanics represent approximately 38% of the population; past this point, larger percentages of Hispanics are associated with lower probabilities of not posting bail. In contrast, the likelihood of being detained prior to trial is an increasing function of percent Hispanic.

Results also indicate that Hispanic-White pretrial detention disparities are conditioned by county ethnic composition. Contrary to theory, however, this cross-level interaction term is negative, suggesting that differences in pretrial detention probabilities between Hispanics and

Figure 4: The Effects of Percent Hispanic-Hispanic Interaction on the Probability of Pretrial Detention



Whites diminish as percent Hispanic increases. The predicted probability plot displayed in figure 4 shows how expanding Hispanic communities dampen Hispanic-White pretrial detention differentials. Specifically, observe that, without the percent Hispanic-Hispanic interaction term, Hispanics are consistently more likely to be detained prior to trial than Blacks or Whites. Including this cross-level

interaction, however, causes pretrial detention probabilities to rise slower for Hispanics than for Blacks or Whites. In fact, when Hispanics represent greater than 40% of the county population, Hispanics are less likely than Blacks to be incarcerated prior to trial; similarly, Hispanics face lower detention likelihoods than Whites in counties where Hispanics constitute more than 60% of the total population.

6. Discussion and Conclusion: Theoretical Implications and Future Research

In summary, regression analyses provide mixed support for the minority threat hypothesis. While significant racial/ethnic threats are found for bail amount, posting bail and pretrial detention models, estimated racial threats diverge from theoretical predictions. Moreover, negative cross-level interaction terms contradict expectations that punitive Hispanic threat effects will be more pronounced for Hispanics.

The structural differences between racial and ethnic threats merit additional discussion. One possible explanation for these diverging results focuses on how popular culture differentially relates Hispanics and Blacks to drug crimes. Schlesinger (2005), for instance, finds evidence that “stereotypes of Latino involvement in the drug trade may be even more entrenched than similar stereotypes of Blacks”; in contrast, racial prejudices against Blacks are more salient in the adjudication of violent crimes because Black stereotypes focus on narratives of violence and dangerousness (p. 185). Demuth (2003) similarly notes that the “current drug ‘war’ entails particularly harsh stereotyping of Hispanic males as drug couriers or traffickers,” ultimately arguing that this “identification of drug problems and drug trafficking as closely linked with foreign groups” makes it “especially likely that Hispanic defendants suspected of drug crimes will become targets of increased legal controls” (882).

This intertwining of Hispanic stereotypes and drug narratives may influence the extent to which judges perceive ethnic threats during their adjudication of drug crimes. Specifically, White elites may be more inclined to act upon perceived minority threats in contexts that are linked, either directly or via stereotypes, to the minority group in question.

This theory would explain the observed minority threat patterns. Since the stereotyping of Hispanics as drug dealers has “prepped” judges to look for Hispanic threats linked to drug

crimes, judges are more likely to respond to Hispanic threats when adjudicating drug crimes. As a result, positive linear or inverted U-shaped relationships will form between percent Hispanic and drug crime adjudication severity. In contrast, since Blacks are less salient in drug narratives than Hispanics, the effects of Black threats on drug crime punishments will be delayed since judges are not as prepared for identifying Black threats in the context of drug adjudication. Potentially, this “delay” could translate into a parabolic minority threat effect.

The existence of negative, cross-level interaction terms between ethnic composition and defendant ethnicity also merits consideration. One possible explanation for this theoretical divergence is that larger Hispanic populations may be able to supply Hispanic defendants with more economic resources, thereby increasing the chances that Hispanic defendants can post bail. This supposition is supported by the marginally significant, negative, percent Hispanic-Hispanic interaction term found for the held on bail model. The fact that all three legal decision models fail to unearth significant interaction terms further suggests that Hispanic population growth dampens Hispanic-White pretrial disparities by strengthening the socioeconomic networks supporting Hispanic defendants. Thus, rather than contradicting minority threat theories, these negative interaction terms suggest that large minority communities can use their pooled resources to mitigate minority threat effects and reduce racial/ethnic disparities in the criminal justice system.

Ultimately, this study serves as an exploratory first-step towards understanding how minority threats influence pretrial release outcomes. Future research should investigate whether the structural form of minority threats is tied to the legal and cultural context in which these threat effects manifest. For instance, this paper proposes testing whether minority threat effects for pretrial release outcomes vary across crime categories. In addition, alternative measures of

minority threats should be explored in the context of pretrial detention. Although using percent Black and percent Hispanic facilitates cross-study comparisons, these measures of minority threat are crude. Finer minority threat measurements may reveal new insights into the pretrial release process.

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Running Head: DEPRESSIVE SYMPTOMS IN ASIAN AMERICANS

A Symptom Profile Analysis of Depression in a Nationally Representative Sample of Asian
Americans

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Abstract

Past research has suggested the existence of differences in depressive symptoms, diagnosis, and treatment of depression among ethnic and racial groups. In particular, Asian Americans have been found to experience depression differently than European Americans. Using a symptom profile approach, the presentation of depressive symptoms was examined in a nationally representative sample of Asian Americans and compared to that of European Americans. This study used data from the Collaborative Psychiatric Epidemiology Surveys, which include the National Latino and Asian American Study (NLAAS) and the National Comorbidity Survey-Replication (NCS-R). Depressive symptom profiles of Asian Americans and European Americans who reported depressive experiences were compared in order to analyze the phenomenology of depression in these groups. Findings suggested that Asian Americans reported somatic and affective depressive symptoms equally. When compared to European Americans though, they endorsed a variety of symptoms less frequently. Clinical implications and directions for future research are discussed.

A Symptom Profile Analysis of Depression in a Nationally Representative Sample of Asian Americans

Culture and Depression

According to the World Health Organization (WHO), major depression is reported as the leading cause of disability worldwide and the fourth largest contributor to the global burden of disease (WHO, 2005). Major depression is a chief public health problem and it is projected to be the second largest contributor to global disease burden by 2020 (Murray & Lopez, 1996). The lifetime prevalence rates of depression range from 10% to 25% for women and from 5% to 12% for men (APA, 1994). Depression has been identified in all countries and among all ethnic and racial groups that have been studied (Kessler et al., 2003; Weissman et al., 1996).

The ubiquity and the serious consequences of major depression call for prompt actions in increasing our understanding of its etiology, phenomenology, assessment, diagnosis, and treatment. It is believed that culture plays an important role in the aforementioned processes and affects the way depressive symptoms are experienced and expressed, as well as described and measured. Research on the subject of culture and depressive experience has lead to a wide array of theoretical and clinical publications (e.g., Kirmayer & Jarvis, 2006; Kleinman & Good, 1985).

In their book *Culture and Depression*, Kleinman and Good (1985) bring together anthropologists, psychologists, and psychiatrists to present a unique perspective that challenges the purely biomedical conceptualization of depression. Cross-cultural studies of depression may provide evidence for its universality but they also offer data of cultural variations in depressive mood, symptoms, and illness. Therefore, the authors urge researchers to delve into the various aspects of depression, such as expression of bodily complaints, meaning of variations of affect (e.g., dysphoria, sadness, emptiness), and particular cultural idioms describing mood and distress.

The Western conceptualization of mental health relies on the notion of Cartesian dualism, considering the mind and the body as separate entities. The division of “psyche and soma” in Western medicine assumes that psychology and psychiatry deal with disorders of the mind and emotions, while somatic medicine treats the body and its disorders (Angel & Williams, 2000). However, this partition has proven to be quite controversial since all mental disorders according to the DSM-IV (APA, 1994) and ICD-10 (WHO, 1992) classifications include somatic components. For instance, the current diagnosis of depression relies on both psychological and somatic symptoms. Interestingly, previous research implies that Westerners often describe depression in relation to concepts like guilt, individualism, decision-making, and self-control (Marsella, 1987). In addition, the affective aspect of depression has been suggested to receive more emphasis in North American samples than in Asian samples (Ryder et al., 2008). In contrast, Eastern experience of depression may reflect the integration of body and mind, which would explain the widespread occurrence of somatic symptoms in place of affective ones or the lack of differentiation between the two realms (Ryder, Yang, & Heine, 2002).

The chief symptom in major depression in the West is considered to be sadness or depressed mood. However, in many societies people who suffer from major depression do not complain primarily of sadness. The symptoms that stand out for those people may be changes in appetite, headaches, backaches, stomachaches, insomnia, or fatigue (Kleinman, 1996). Such symptoms and complaints would take people suffering from depression to their primary care doctor and they may be less likely to be diagnosed with a mental disorder. According to the DSM-IV (APA, 1994), the presence of sadness, or a lack of interest, is necessary for a major depressive episode diagnosis to be considered. Parallel with that, other current depressive symptoms in the DSM-IV are drastic changes in appetite or weight, sleep problems,

psychomotor retardation or agitation, fatigue or low energy, difficulty concentrating or indecisiveness, worthlessness or inappropriate guilt, and suicidal ideation, plan, or attempt. In order to receive a Major Depressive Episode (MDE) DSM-IV diagnosis, at least five symptoms need to be endorsed for a period of two or more weeks most of the day, nearly every day. It is worth noting that some of the DSM-IV symptoms are directly related to Judeo-Christian religious concerns with guilt, sin, sloth, despair, and worthlessness (Marsella & Kaplan, 2002). However, these presentations may not be equally applicable in cultures that embrace different religions and societal norms.

One of the major problems with ethnocultural variations of depressive disorders is evident in the measurement of depressive experiences. The existing assessments of depressive symptoms may have limited cultural validity and this may reduce their clinical utility in non-Western populations (Marsella, 1987). The symptoms of major depression that are described by the DSM-IV and measured by clinicians may not be equally culturally sensitive to depressive experience (i.e., may be endorsed differently) in all populations. Therefore, Marsella (1980; 1987) proposed to measure depression based on five different dimensions: affective, somatic, interpersonal, cognitive, and existential. According to Marsella, all of these components are present in the depression diagnosis. Yet, in Western culture more attention may be placed on affective and existential symptoms (e.g., depressed mood, discouragement, hopelessness), while non-Western populations may be more likely to experience dysfunction through somatic symptoms (e.g., loss of appetite, sleep problems). To illustrate this, Marsella, Kinzie and Gordon (1973) used factor analysis to explore the expression of depressive symptoms among Japanese, Chinese, and European Americans. The authors found different depressive symptom profiles among the three groups: the Chinese Americans were more likely to emphasize somatic

complaints (e.g., headaches, insomnia, and indigestion), the Japanese Americans experienced more interpersonal problems (e.g., afraid to meet new people, does not feel like socializing, and feels ashamed), and the European Americans reported more affective and existential symptoms (e.g., loss of interest in life, hopelessness, depressed mood, suicidality, and memory problems). In addition, the authors found that Chinese and Japanese participants differed from European participants by reporting poor appetite more often, while European participants endorsed the urge to eat more frequently than the participants of Asian descent. A depressive symptom profile that allows us to map the endorsement of each symptom can reveal invaluable information about the phenomenology of the disorder in particular ethnocultural groups and may provide important implications for diagnosis and treatment.

Depression among Asian Americans

Asian Americans are one of the fastest growing and most diverse groups in the U.S. According to the U.S. Census Bureau (2004), by 2050 the Asian population in this country is projected to grow 213 percent, from 10.7 to 33.4 million people. This expected increase in the Asian population in the U.S. calls for a better understanding of this group's mental health. Among Asians and Asian Americans¹, reports about the lifetime prevalence of depression vary greatly. Some epidemiological studies indicated a relatively low lifetime prevalence rate of depressive disorders (6.9%) among Chinese Americans (Takeuchi et al., 1998) in comparison to European Americans (17.9%; Breslau et al., 2006). Takeuchi, Hong, Gile, and Alegria (2007) reported that 9.1% of Asian Americans in the National Latino and Asian American Study endorsed any affective disorder. Regardless of the true prevalence of depression among Asian Americans, it has been established that once they have a mental disorder, it tends to be very

¹ When referring to Asian Americans, we include both immigrants from Asian countries to the U.S. (first generation) and Americans of Asian descent (second, third, or fourth generation). Studies of Asian populations will be discussed because they may be relevant to first generation Asian Americans.

persistent and they are less likely to seek treatment for psychological problems than European Americans (Meyer, Zane, Cho, & Takeuchi, 2009). Moreover, Alegría et al. (2008) found that Asian Americans with a past-year depressive disorder were significantly less likely to access depression treatment and to receive adequate care compared to non-Latino Whites. Thus, if Asian Americans suffer from depression, they may be less likely to have the disorder detected and treated, which may result in a worse prognosis (Marin & Escobar, 2008).

The observed health disparities in depression treatment call for a closer examination of the manifestation and experience of depression among Asian Americans. Research on depressive symptoms and psychological distress among Asians and Asian Americans has found higher endorsement rates of somatic symptoms (e.g., Kleinman, 1977; Lu, Bond, Friedman, & Chan, 2010; Marsella et al., 1973). As a result, it has been concluded that somatization, or somatic expression of distress, is common among Asian cultures, while in Western cultures there is more emphasis on verbal and emotional expression of psychological distress, such as sadness or hopelessness (Chun, Enomoto, & Sue, 1996; Hwang et al., 2008).

One of the proposed explanations for the emphasis on somatic symptoms among Asian Americans has been the holistic representation of mind and body. Support for this proposition has been found in previous research on depressive symptoms among Asian Americans that examined the factor structure of the CES-D (Center for Epidemiological Studies Depression Scale). The CES-D assesses four domains of depression: negative/depressed affect, positive affect, interpersonal problems, and somatic symptoms (Radloff, 1977). However, these dimensions do not always hold and fewer factors often emerge among ethnic/racial minority populations (e.g., Chung & Singer, 1995; Edman et al., 1999). For example, Edman et al. found that in a sample of Filipino American adolescents, only two factors provided a reasonably good

fit: the first one included depressed affect, somatic complaints, and interpersonal problems and the second one consisted of the positive affect items. This finding implies that depressive symptoms may cluster in a different way among Asian Americans. In addition, Kanazawa, White, and Hampson (2007) investigated cultural variations in depressive symptoms among Native Hawaiians, Japanese Americans, and European Americans using the CES-D and found that Japanese Americans reported lower levels of positive affect compared to European Americans. This discrepancy was attributed to the differences in emotion regulation rather than in levels of depression. Additionally, Lu et al. (2010) examined the CES-D in a sample of Hong Kong Chinese and Anglo American students. While the authors found support for four factors in both samples, they observed a tendency among the Chinese participants to report somatic symptoms and a tendency among Anglo Americans to report both somatic and affective symptoms. Furthermore, Lu and colleagues concluded that American participants considered somatic and affective experiences as two different dimensions that comprise depression equally and Chinese individuals were more likely to report their somatic symptoms, despite their awareness of the psychological problem. The observed tendency among the Chinese participants to concentrate on somatic symptoms is arguably more socially acceptable and may be related to the assumption that a cure can be found more easily for such complaints.

Despite the various reasons that have been proposed to explain somatization, researchers recently have offered an alternative explanation. A recent study by Ryder and colleagues (2008) explored depressive symptom presentations among Chinese and Euro-Canadian outpatients and concluded that the type of assessment (spontaneous problem report, symptom self-report questionnaire, or structured clinical interview) influenced the type and frequency of the symptoms that the patient reported. In this study, Chinese outpatients were found to report more

depressive somatic symptoms in spontaneous report and structured interviews, while Euro-Canadian outpatients reported significantly more depressive affective symptoms (e.g., depressed mood, anhedonia, worthlessness, guilt) in all three assessment modalities. Based on their findings, Ryder and colleagues suggested that researchers may have spent too much time on discussing Chinese somatization of depression. Instead, they argue that it is more likely that Westerners overemphasize the affective aspects of depression compared to other cultures. This phenomenon is referred to as the “psychologization” of depression. Similarly, Kirmayer and Young (1998) argued that somatization is “the most common clinical expression of emotional distress worldwide” (p.420), although its features and prevalence may vary across cultures.

The affective/somatic dichotomy in depression among Asians has been examined in multiple studies. However, very few studies have explored the endorsement of specific depressive symptoms among Asian Americans. Most of the existing studies that investigated racial and ethnic differences in the expression of DSM depressive symptoms included African Americans, Hispanics, and European Americans (Breslau, Javaras, Blacker, Murphy, & Normand, 2008; Iwata, Turner, & Loyd, 2002). Only one such comparative study of depressive symptoms included an Asian American group (Uebelacker, Strong, Weinstock, & Miller, 2009). Uebelacker et al. (2009) examined differences in DSM-IV major depression symptoms among English-speaking African Americans, Hispanics, non-Hispanic Whites, Asian Americans, and American Indians. The authors used differential item functioning to detect whether certain depressive symptoms were easier to endorse for one racial/ethnic group when the level of depression severity was equal between groups. The results indicated that in comparison to European Americans, Asian Americans were more likely to endorse suicidal ideation given equal levels of depression severity. In addition, poor concentration discriminated European Americans

more than Asian Americans. However, Uebelacker and colleagues did not find any evidence to support their hypothesis that somatic symptoms would be endorsed more often among all racial/ethnic minorities, including Asian Americans. This study did not examine the two affective depressive symptoms in the DSM-IV, namely depressed mood and anhedonia, because the sample consisted of individuals who received an MDD diagnosis and the endorsement rates of these two symptoms were too high.

Based on the reviewed research, there is strong evidence to support that depressive symptoms and experience are shaped by culture. Previous research studies that investigated depressive symptoms among Asians and Asian Americans looked at outpatient and community samples (e.g., Kanazawa et al., 2007; Ryder et al., 2008), explored depression predominantly among one Asian ethnic subgroup (e.g., Chinese, Korean, or Japanese), employed qualitative methods that may make it difficult to replicate results (Bernstein et al., 2007), and used self-report questionnaires (e.g., BDI or CES-D) rather than structured interviews. Therefore, it is important to investigate depressive symptomatology among Asian Americans in more depth by addressing these limitations. Thus, the main focus of this study was to obtain and analyze a detailed depressive symptom profile of Asian Americans in a nationally representative U.S. sample using a diagnostic interview that allowed the examination of DSM-IV MDE criteria.

The Current Study

Relatively few studies have examined particular symptoms of depression among Asian Americans and none of these studies employed a large nationally representative U.S. sample of Asian Americans. In this study, systematic analyses were performed to examine the frequencies of discrete depressive symptoms in order to form a symptom profile of depression among Asian Americans. The symptom profile of depressed Asian Americans was compared to that of

depressed European Americans in order to detect possible similarities and differences in the manifestation of depression between the two ethnocultural groups. Based on the existing literature, differences in affective and somatic symptoms were expected. The study also examined reports of distress and impairment associated with the depressive episode among Asian Americans and European Americans.

The goal of the study was to answer the following questions:

- 1) What depressive symptoms have the highest endorsement rate among Asian Americans (e.g., depressed mood, appetite changes, or loss of energy)?

Hypothesis: It was expected that Asian Americans would have the highest endorsement rates for somatic symptoms (e.g., appetite changes, sleep disturbance, and loss of energy).

- 2) What specific symptoms are endorsed more often by Asian Americans than by European Americans and vice versa?

Hypothesis: It was expected that Asian Americans would endorse somatic depressive symptoms more (e.g., appetite changes, sleep disturbance, psychomotor disturbance, and loss of energy) than European Americans, who would endorse affective depressive symptoms more often (e.g., depressed mood, discouragement, anhedonia, and self-reproach) than Asian Americans.

The ultimate goal of this study was to provide information about the nature and expression of depression among Asian Americans. A more nuanced understanding of these factors will allow for better recognition, assessment, and diagnosis of depression in this population in both primary care and mental health settings. In addition, this study's findings will be relevant to creating, adapting, and applying the most suitable treatments for depression.

Method

To address the research questions, secondary data analysis was conducted using data drawn from the Collaborative Psychiatric Epidemiology Surveys (CPES; Pennell et al., 2004) accessed through the online database of the Inter-university Consortium for Political and Social Research. The CPES includes the National Comorbidity Survey-Replication (NCS-R), the National Latino and Asian American Study (NLAAS), and the National Survey of American Life (NSAL; Heeringa et al., 2004). These surveys collected comprehensive epidemiological data on lifetime and 12-month prevalence of psychiatric disorders and rates of mental health use among the U.S. population and included a large number of racial and ethnic minority groups. In order to examine the proposed research questions, data for Asian Americans were drawn from the NLAAS and data for European Americans and Asian Americans were drawn from the NCS-R. The NLAAS is the first nationally representative community household epidemiological survey of Latinos and Asian Americans in the U.S. The rationale, overview, and procedures for the development of the NLAAS are described in detail in Alegría, Takeuchi, et al. (2004). The NCS-R is a nationally representative survey of English-speaking household residents aged 18 or older who live in the coterminous United States. The CPES studies are compatible in the sampling methods and measures they used and allow comparisons of psychiatric disorder characteristics between European, Hispanic, African American, and Asian American adults. The CPES dataset was selected for this study because it is the largest available epidemiological dataset that included a nationally representative sample of Asian Americans and European Americans.

Sampling Design

The NLAAS and the NCS-R used a four-stage stratified probability sampling procedure to recruit and survey adult non-institutionalized Asian Americans and European Americans. The core sampling process started with sampling in Metropolitan Statistical Areas (MSA) and single

counties. The second stage involved area segments sampling and the third stage comprised of housing units sampling. In the final stage, eligible respondents in each household were randomly selected. The sampling procedures have been described in more detail in Heeringa et al. (2004).

Participants

Participants in this study were 2095 Asian Americans drawn from the NLAAS, 189 Asian Americans from the NCS-R, and 6696 non-Latino Whites from the NCS-R. All participants were 18 years or older living in the coterminous United States. Among the NLAAS respondents there were 600 Chinese, 508 Filipino, 520 Vietnamese, and 467 Other Asians. The Asian American participants from the NCS-R ($n = 189$) were part of the Other Asian category.

Measures

The NLAAS measures were translated in four Asian languages: Cantonese, Mandarin, Tagalog, and Vietnamese. The NLAAS Core battery compares to the NCS-R and NSAL instruments with identical measures of psychiatric illness, service use, and impairment. The NLAAS and the NCS-R used the core CPES questionnaire, which was based on the World Health Organization's (WHO) version of the Composite International Diagnostic Interview (CIDI 3.0). The CIDI is described in detail in Kessler and Üstün (2004). The WMH-CIDI starts with a screening section, which included questions about particular disorders. If the participant endorsed one of the questions for a particular disorder, s/he was asked to complete the module associated with the disorder later. Thus, participants who completed the Depression Module endorsed one or more of the following three questions:

1) “Have you ever in your life had a period of time lasting several days or longer when most of the day you felt sad, empty or depressed?”

2) “Have you ever had a period of time lasting several days or longer when most of the day you were very discouraged about how things were going in your life?”

3) “Have you ever had a period of time lasting several days or longer when you lost interest in most things you usually enjoy like work, hobbies, and personal relationships?”

This study aimed to explore depressive symptoms among all participants who completed the Depression Module. The rationale for examining this sample was that it would provide more variation within the sample and allow examining participants with subthreshold levels of depression who may be otherwise ignored.

Ethnicity. The NLAAS targeted Asian American participants of Vietnamese, Filipino, and Chinese background. There was a fourth category of “Other Asian” that included participants of all other Asian ethnicities in the NLAAS and all Asian participants from the NCS-R. The four categories were combined to create one category of Asian Americans. European Americans were drawn from the NCS-R study.

Depressive symptoms. The Depression section of the WMH-CIDI included questions about depressive symptoms during the most severe major depressive episode in the participant’s life. Most of the questions were relevant to a DSM-IV MDE symptom (e.g., depressed mood, psychomotor retardation/agitation) and were rated as *present* or *absent*. Based on DSM-IV MDE diagnostic rules, the endorsement or denial of a symptom (e.g., worthlessness) defined further inquiry about other related symptoms (e.g., guilt).

Lifetime DSM-IV Major Depressive Episode. Lifetime DSM-IV Major Depressive Episode diagnosis was coded as present or absent. This variable was provided based on a SAS algorithm that considered the number of symptoms and rule outs.

Procedure

Data collection for NCS-R and NLAAS took place between February 2001 and December 2003. Initially, households and respondents were selected based on the probability sampling described earlier. NCS-R surveys were conducted by 342 certified interviewers, while NLAAS data were collected by 275 trained bilingual and bicultural interviewers. The interviewers obtained informed consent and conducted interviews by phone or in person using computer-based software. All instruments were translated and back translated in Cantonese, Mandarin, Tagalog and Vietnamese according to standard techniques (Alegria, Vila et al., 2004). Participants received monetary compensation for their participation. The development and implementation of all CPES studies is described in detail in Pennell et al. (2004).

Data Analyses

Of the combined NCS-R and NLAAS sample, only participants who endorsed depressive experiences in the screening questions and continued to answer questions about symptoms of their most severe depressive episode were included in the analyses. The study used both within-group (among Asian Americans) and between-group (between Asian Americans and European Americans) comparisons. All analyses were conducted using the Complex Samples Module in IBM SPSS version 19.0 using sample weights and controlling for sample design effects due to sample stratification and clustering. Specific CPES sample weights for NCS-R and NLAAS were utilized for all analyses. An alpha of .05 was used to evaluate the significance of all analyses.

Frequencies. Frequencies of depressive symptom endorsement for Asian Americans were examined and compared to identify which depressive symptoms are most often endorsed.

Chi-Square Analyses. To examine the rates of endorsement of depressive symptoms between Asian Americans and European Americans, a series of Pearson chi-square analyses

were conducted. Significant results, as indicated by p -values of less than .05, suggest that differences exist in endorsement rates of depressive symptoms between the two racial groups.

Results

Screening

Twenty-three percent ($n = 2073$; 310 Asian Americans and 1763 European Americans) of the pooled NLAAS and NCS-R samples ($n = 8980$) endorsed depressed mood, lack of interest, or discouragement for a period of two weeks or longer during their lifetime and answered the questions about depressive symptoms. One fifth ($n = 1598$; 19.7%) of the pooled NLAAS and NCS-R samples screened positive for suspected lifetime history of depression. The proportion of Asian Americans with Major Depressive Episode (9.1%, $SE = 0.8\%$; unweighted $n = 221$) was significantly lower than that of European Americans (20.3%, $SE = 0.5\%$; unweighted $n = 1377$), $\chi^2(1, N = 88) = 38.660, p < 0.001$.

Descriptives

Descriptive statistics are presented in Table 1. The age range for participants was 18-91. The mean age was 39.22 ($SE = 0.88$) for Asian Americans and 44.15 ($SE = 0.65$) for European Americans. Both racial groups had more females than males (61.3% vs. 38.7% for both groups). Within the Asian American sample there were 9.6% Vietnamese, 16.3% Filipino, 31.1% Chinese, and 42.9% Other Asian. Three quarters (77%) of the participants at risk for depression met criteria for DSM-IV MDE. However, European Americans (78.3%) were more likely to be diagnosed with MDE than Asian Americans (69%), ($\chi^2(1, N = 71) = 3.037, p = .001$).

Question Endorsement, Symptom Prevalence, and Symptom Profile

The endorsement rates of depressive symptoms according to DSM-IV MDE criteria for each racial group are presented in Table 2. Among the most frequently endorsed symptoms

(>70%) for Asian Americans were feeling depressed, feeling discouraged, trouble sleeping, low energy, trouble concentrating, loss of self-confidence, and feeling less talkative.

Chi-Square Analyses: Ethnicity X Depressive Symptoms

The endorsement rates of depressive symptoms among Asian and European participants were compared and results are presented in Table 3. Significant differences in endorsement rates were found between Asian Americans and European Americans for 9 of the 28 questions, with Asian Americans endorsing less frequently than European Americans all 9 questions (see Figure 1). In particular, Europeans were significantly more likely than Asians to report feeling sad/empty/depressed ($\chi^2(1, N = 71) = 1.346, p = .030$), feeling discouraged about life ($\chi^2(1, N = 71) = 2.288, p = .006$), loss of interest ($\chi^2(1, N = 71) = 1.223, p = .021$), larger appetite ($\chi^2(1, N = 71) = 1.549, p = .044$), weight gain ($\chi^2(1, N = 71) = 1.307, p = .028$), loss of self-confidence ($\chi^2(1, N = 71) = 1.442, p = .019$), feeling guilty ($\chi^2(1, N = 71) = 1.820, p = .010$), desire to be alone rather than with friends ($\chi^2(1, N = 71) = 3.191, p = .001$), and crying often ($\chi^2(1, N = 71) = 1.079, p = .019$).

Discussion

This study examined a symptom profile of depression among a nationally representative sample of Asian Americans and compared it to that of European Americans. Overall, Asian Americans at risk for depression had high endorsement rates (> 70%) for a variety of depressive symptoms, including depressed mood, discouragement, insomnia, loss of energy, trouble concentrating, loss of self-confidence, and decreased talkativeness. This pattern is relatively consistent with our hypothesis stating that somatic symptoms will be most prevalent among depressed Asian Americans. Indeed, trouble sleeping and low energy are somatic in nature and the endorsement rate of appetite/weight changes was above 70% when endorsement rates of

decreased (64.9%) and increased (8.3%) appetite were jointly considered. However, high endorsement rates of affective symptoms were also observed among Asian Americans. In particular, feeling sad, feeling discouraged about things in life, and losing self-confidence were most often endorsed. The high endorsement rates of affective symptoms could be explained in three different ways. First, the results are consistent with findings that Asian Americans experience depressive affective symptoms and are aware of the underlying psychological problems in depression (Lu et al., 2010). Second, the high endorsement rates of affective symptoms among Asian Americans might be related to their acculturation level as more acculturated Asian Americans may be more likely to manifest depression similarly to European Americans (Lee, 2002). Third, the diagnostic measure (WMH-CIDI) in the CPES used a screening process that emphasized affective symptoms of depression (i.e., felt sad, empty, or depressed; felt discouraged; lost interest in things). Therefore, it is possible that the participants who completed the Depression Module were already primed to report their affective symptoms.

Whereas these results suggest that the core features of depression may be present in different racial/ethnic groups, it is important to consider this finding in the context of the methodology that was used as noted in the following classic example from cross-cultural psychology. The International Pilot Study of Schizophrenia (IPSS) conducted by the World Health Organization in the 1970s provided the first data for cross-cultural comparisons of schizophrenia and concluded that psychoses present similarly across cultures. However, Kleinman (1988) later criticized the IPSS' methodology for using stringent inclusion and exclusion criteria, which yielded an "artificially homogenous sample" (Thakker & Ward, 1998, p.516). Kleinman suggested that the observed "similarity was an artifact of methodology" (p.19). In the present study, a similar phenomenon may have been observed, as the screening questions

for depression were based on DSM-IV MDE criteria and the participants included in the MDE sample were selected based on these possibly rigid criteria. However, having strict exclusion/inclusion criteria in cross-cultural studies may result in the exclusion of those participants who showed the greatest diversity of symptoms which might not fit with the DSM-IV diagnostic approach (Thakker & Ward, 1998).

To examine similarities and differences in depressive symptoms among Asian Americans and European Americans, the frequencies of endorsement were compared. Nine differences were found and, for all of them, European Americans endorsed the symptom significantly more often than Asian Americans. In particular, European Americans endorsed feeling sad, empty, or depressed, feeling discouraged about things in life, losing interest in almost all things, having a larger appetite, gaining weight, losing self-confidence, feeling extreme guilt, wanting to be alone rather than with friends, and crying often. These findings were only partially consistent with our hypothesis, which predicted that Asian Americans would endorse somatic symptoms more often and European Americans would be more likely to endorse affective symptoms. We observed that while the first part of this hypothesis was not supported, the second one was confirmed. European Americans were more likely to endorse depressed mood, anhedonia, and self-reproach symptoms. This finding is consistent with the recent propositions that Westerners are more likely to “psychologize” depression than Asians while somatic complaints are ubiquitous (Kirmayer & Young, 1998; Ryder et al., 2008).

We can speculate that the expression of negative emotions is more socially acceptable among European Americans than Asian Americans due to possible differences in the interaction between self-construal and emotional regulation. Independent self-construal involves construing the self as an individual, whose behavior is organized and meaningful based on the person’s own

feelings, thoughts, and actions. Interdependent self-construal entails perceiving oneself as part of social relationships and realizing that one's behavior is contingent on and organized by the person's perception of others' thoughts, feelings, and behaviors (Markus & Kitayama, 1991). Markus and Kitayama suggested that independent self-construal is observed in Western cultures and interdependent self-construal is more common in Asian cultures, although variations within cultures are possible. In terms of emotional regulation, the authors implied that a person's self-construal can affect the expression, intensity, and frequency of emotions. Specifically, those with independent selves learn how to communicate very effectively their "ego-focused" emotions, such as sadness or frustration. In contrast, people with interdependent self-construal need to control and de-emphasize their private feelings in order to fit into the interpersonal context. Therefore, European Americans may put more weight on expressing negative affect (e.g., depressed mood, discouragement, crying often) than Asian Americans when they suffer from depression. Using the self-construal framework, we can also discuss European Americans' higher endorsement of wanting to be alone rather than with friends. The desire to be on one's own when one is depressed may be related to the concept of independence and individualism seen more often among Western cultures. Conversely, Asian Americans may either seek help from their social network or they may simply not have the choice to be on their own because isolation and avoidance are not socially appropriate. In addition, European Americans' tendency to endorse self-reproach symptoms more often than Asian Americans is consistent with Marsella's suggestion that guilt and worthlessness may be more salient to Westerners because they are related to the Judeo-Christian religion and individualism (Marsella, 1987; Marsella & Kaplan, 2002).

Another important finding was the higher endorsement rates of increased appetite and weight gain among European Americans and not Asian Americans. Although we did not have a hypothesis for this particular symptom, it is important to note that Marsella et al. (1973) reported a similar pattern, with Japanese and Chinese Americans endorsing a lack of appetite and European Americans endorsing an urge to eat. This finding also emphasizes the importance of keeping the appetite and weight change symptoms separate when examining cultural variations in depressive symptoms. That is, if we collapse all appetite/weight change symptoms together, we may not be able to detect meaningful differences.

Clinical Implications

The reported findings have important implications for mental health professionals and primary care physicians who work with Asian Americans. A culturally informed assessment of depressive symptoms among Asian Americans may not emphasize affective symptoms, such as feeling sad, empty, or depressed or losing interest in things that were previously enjoyed. While these symptoms may be present among depressed Asian Americans, they may not be the most salient ones or the reason why the clients sought help in the first place. In addition, taking into consideration the effect of gender, acculturation, and acculturative stress of the client may be essential for the assessment, diagnosis, and treatment of depression among Asian Americans.

Limitations

This study had several limitations that need to be addressed in future research. First, the screening process that was used in the WMH-CIDI limited our sample to Asian American participants who reported past experiences of sad, empty, or depressed mood, discouragement, and lack of interest. While this screening process is consistent with the current DSM-IV diagnosis, it might have eliminated Asian American participants who experienced depression

differently. However, we believe that the sample that we examined still presented with reasonable cultural variations in depression and provided valid data to answer our research questions. Another limitation of the current study was the small cell counts to examine differences in depressive symptoms based on ethnicity. While one of the strengths that the CPES dataset has is the oversampling of Chinese, Filipino, and Vietnamese participants, we could not take advantage of this feature because of the small number of individuals in each ethnic group.

Directions for Future Research

The systematic examination of symptom profiles of mental disorders among ethnic and racial minorities and cross-culturally can provide valuable information for improving assessment, diagnosis, and treatment. In the case of depression, it may be particularly important to examine symptoms among individual ethnic groups of Asian Americans and other racial minorities. In addition, while we found cross-racial differences, testing the mechanisms behind these differences in depressive symptoms among Asian Americans will be an important next step. Another topic that deserves more attention is the effect of acculturation on the overall prevalence of depression and depressive symptoms in particular. Lastly, future research of depressive symptoms endorsed by both depressed and non-depressed Asian Americans may shed some light in elucidating the diagnostic validity of the DSM-IV MDE diagnosis. In general, having a more loosely defined sample as opposed to a strictly defined sample will allow us to examine cultural variations of depression and other disorders more thoroughly.

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Table 1

Descriptives

		Asian	European
Variables		(<i>n</i> = 310)	(<i>n</i> = 1763)
		M(%) (SE)	M(%) (SE)
Ethnicity	Vietnamese	9.6% (1.8)	NA
	Filipino	16.3% (1.5)	NA
	Chinese	31.1% (3.3)	NA
	Other Asian	42.9% (2.9)	NA
Gender	Male	38.7% (2.7)	38.7% (1.4)
	Female	61.3% (2.7)	61.3% (1.4)
Age		39.22 (.88)	44.15 (.65)
Education	0-11 years	9.7 (2.2)	12.8 (1.0)
	12 years	15.3 (1.9)	30.3 (1.2)
	13-15 years	25.8 (2.5)	30.2 (0.9)
	≥ 16 years	49.2 (2.4)	26.7 (1.3)
Marital Status	Married/Cohabiting	53.7 (2.5)	54.5 (1.6)
	Divorced/Separated	14.2 (1.7)	24.8 (1.1)
	Never Married	32.2 (1.9)	20.6 (1.7)
MDE Dx	Endorsed	69.0% (2.2)	78.3% (1.0)

Table 2

Frequency of Depressive Symptoms among Asian American (n = 310)

Symptom Item Unweighted <i>n</i>	Frequency (%) SE		
<u>Depressed Mood</u>			
Felt sad, empty or depressed	89.0	0.9	276
Discouraged about things in your life	80.1	1.8	247
<u>Anhedonia</u>			
Lose interest in almost all things	68.3	2.0	214
<u>Appetite/Weight change</u>			
Smaller appetite	64.9	2.7	203
Larger appetite	8.3	2.0	24
Gain weight	9.7	1.7	28
Lose weight	53.1	3.1	171
<u>Sleep disturbance</u>			
Insomnia	74.1	2.0	225
Sleep a lot more than usual	13.7	1.4	36
<u>Loss of energy</u>			
Low energy	83.3	2.5	245
<u>Psychomotor retardation/agitation</u>			
Talk/move more slowly	52.5	2.7	149
Restless and jittery	10.7	1.9	29
<u>Cognitive difficulties</u>			
Trouble concentrating	72.9	3.5	217
Slow thought	55.3	3.3	170
Indecisive	56.6	2.8	162
<u>Self-reproach</u>			
Lost self-confidence	71.5	2.3	217
Feel not as good as other people	61.5	3.3	181
Feelings of extreme guilt	59.9	2.7	179
<u>Suicidality</u>			
Thought of death	51.0	3.7	151
Would be better off dead	43.1	3.1	123
Thought of committing suicide	26.4	3.0	81
Made a suicide plan	11.8	1.7	34
Made a suicide attempt	8.9	1.4	25
<u>Other psychological problems</u>			
Irritable, grouchy, or in a bad mood	59.9	2.7	179
Nervous or anxious	59.3	2.7	169
Wanted to be alone rather than with friends	67.0	2.1	207
Less talkative	80.8	2.7	238

Often in tears	60.4	2.4	181
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Note: Symptoms in bold indicate high frequency of endorsement (over 70%).

Table 3. *Endorsement and Prevalence of Depressive Symptoms among Asian Americans (n = 310) and European Americans (n = 1763)*

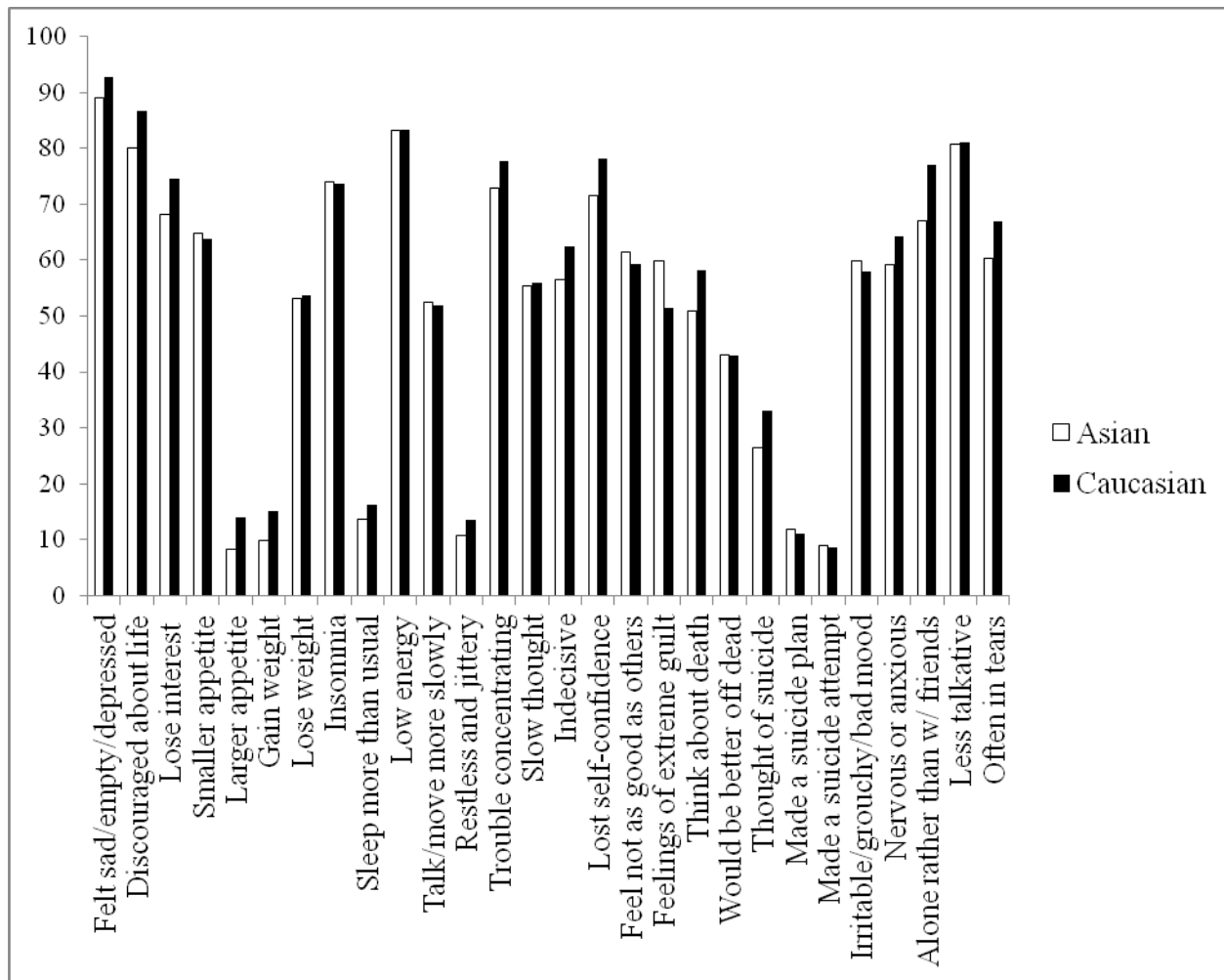
Symptom Item	Asian	SE	European	SE	Total	χ^2	p
<u>Depressed Mood</u>							
Felt sad, empty or depressed	89.0	1.7	92.8	0.7	92.7	1.346	.030
Discouraged about things in your life	80.2	2.4	86.8	0.8	86.6	2.288	.006
<u>Anhedonia</u>							
Lose interest in almost all things	68.3	2.4	74.5	1.1	74.3	1.223	.021
<u>Appetite/Weight change</u>							
Smaller appetite	64.9	3.6	63.9	1.4	63.9	.023	.807
Larger appetite	8.3	2.1	13.9	0.9	13.8	1.549	.044
Gain weight	9.7	2.0	15.1	0.8	14.9	1.307	.028
Lose weight	53.1	3.6	53.6	1.6	53.6	.006	.892
<u>Sleep disturbance</u>							
Insomnia	74.1	2.3	73.7	1.3	73.7	.005	.873
Sleep a lot more than usual	13.7	2.0	16.2	1.0	16.1	.261	.318
<u>Loss of energy</u>							
Low energy	83.3	2.7	83.4	1.1	83.4	.000	.982
<u>Psychomotor retardation/agitation</u>							
Talk/move more slowly	52.5	3.1	52.0	1.1	52.0	.006	.883
Restless and jittery	10.7	2.3	13.4	1.0	13.3	.353	.317
<u>Cognitive difficulties</u>							
Trouble concentrating	72.9	3.8	77.8	0.7	77.7	.791	.171
Slow thought	55.3	3.5	55.9	1.2	55.9	.010	.862
Indecisive	56.6	3.3	62.4	1.2	62.3	.832	.102
<u>Self-reproach</u>							
Lost self-confidence	71.5	2.7	78.2	1.0	78.0	1.442	.019
Feel not as good as other people	61.5	3.5	59.4	1.3	59.5	.109	.563
Feelings of extreme guilt	42.5	3.3	51.4	1.3	51.2	1.820	.010
<u>Suicidality</u>							
Thought of death	51.0	4.0	58.3	1.3	58.0	1.226	.095
Would be better off dead	43.1	3.3	42.9	1.4	42.9	.001	.952
Thought of committing suicide	26.4	3.2	33.0	1.2	32.8	1.131	.075
Made a suicide plan	11.8	2.1	11.0	0.9	11.0	.033	.746
Made a suicide attempt	8.9	1.5	8.5	0.6	8.5	.013	.788
<u>Other psychological problems</u>							
Irritable, grouchy, or in a bad mood	59.9	3.4	58.0	1.0	58.0	.082	.593
Nervous or anxious	59.3	3.2	64.3	1.4	64.2	.635	.148
Alone rather than with friends	67.0	2.4	77.0	0.9	76.7	3.191	.001
Less talkative	80.8	3.0	81.2	0.8	81.2	.005	.911

Often in tears

60.4 2.6 66.9 0.9 66.7 1.079 .019

Note: Percents are weighted. Statistical tests are design adjusted. Boldface type indicates a significant chi-square test for difference at the $p = 0.05$ level.

Figure 1. Frequency of Depressive Symptoms among Asian Americans and European Americans



CULTURAL CAPITAL INVESTMENTS:
CONCERTED CULTIVATION AND THE ACADEMIC ACHIEVEMENT OF HISPANIC
KINDERGARTEN STUDENTS

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ABSTRACT

This study extends analysis of the role of cultural capital investment in the form of concerted cultivation on measures of academic achievement in the Hispanic population. Previous studies have limited analyses to white and black students only. Using data from the Early Childhood Longitudinal Study—Kindergarten Class of 1998-99 (ECLS-K), this study quantitatively tests Lareau's (2003) theory of concerted cultivation and its impact on measures of academic achievement for Hispanic students. Consistent with Bodovski and Farkas (2008), concerted cultivation is measured using 29 items concerning perceptions of parental responsibility, leisure time, parental relationships with school, and the number of children's books at home. This study uses three distinct outcome measures of academic achievement—general knowledge, mathematics, and literacy. Results of ordinary least squares regression analyses indicate that, for Hispanic students, concerted cultivation is positively and strongly associated with parental socioeconomic status but only modestly associated with measures of academic achievement.

CULTURAL CAPITAL INVESTMENTS: CONCERTED CULTIVATION AND THE ACADEMIC ACHIEVEMENT OF HISPANIC KINDERGARTEN STUDENTS

INTRODUCTION

The 2000 U.S. Census identified the Hispanic population as the largest minority group (U.S. Census Bureau 2010). A decade later, 2010 U.S. Census population reports show the Hispanic population increased from 13 to 16 percent of the total United States population (U.S. Census Bureau 2011). The population increase is nearly four times the growth of the total population (U.S. Census Bureau 2011). At the same time Hispanic student academic achievement has continued to trail behind white and black student achievement with disproportionately low levels of educational attainment (Schneider, Martinez, and Owens 2006).

Research findings suggest that schools are not the primary source of academic achievement gaps between racial and ethnic groups (Lee and Burkam 2002; Lareau 2003; Bodovski and Farkas 2008; Bodovski 2010). There are significant gaps in school readiness and academic performance between racial and ethnic groups as early as kindergarten, which raises questions concerning the role and influence of family environment and parenting behaviors on gaps in early childhood school readiness and achievement (Coley 2002; Denton-Flanagan and Reaney 2004; Lee and Burkam 2002; Raver 2007).

This paper extends previous work by Katerina Bodovski and George Farkas (2008) and Bodovski (2010) who examined the role of concerted cultivation in the academic achievement of white and black students. No previous study has examined whether the influence of cultural capital investment, in the form of concerted cultivation, holds in the case of Hispanic students.

LITERATURE REVIEW

Cultural Reproduction of Inequality

Using a cultural reproduction of inequality perspective to analyze cultural capital investments of family resources in children by race and ethnic group provides a unique context for studying how income and socioeconomic inequalities differentially influence the skill acquisition and educational attainment of different groups. The differential returns of cultural capital investments on early childhood achievement suggest investments may be more beneficial for particular race and ethnic groups. A cultural reproduction of inequality perspective emphasizes the ways in which the kind and distribution of knowledge within society is distributed in class based ways. The notion of cultural capital was first developed by Pierre Bourdieu as a theoretical hypothesis and explanation for the observed disparities between children of varying social classes in educational attainment (Weininger and Lareau 2003).

Bourdieu (1986) argued that cultural habits and dispositions, beyond economic factors, generate a type of cultural resource that he called cultural capital. Bourdieu argues that: “[Because] the social conditions of [cultural capital’s] transmission and acquisition are more disguised than those of economic capital, it is predisposed to function as symbolic capital” (Bourdieu 1986: 49). He further asserts that the transmission of cultural capital is the “best hidden and socially most determinant educational investment” (Bourdieu 1986: 48). Schools value symbolic kinds of knowledge directly and indirectly associated with the cultural capital of dominant groups in society (Bourdieu and Passeron 1977). Thus, the investment in cultural capital prior to schooling within family and childrearing practices is critical to understanding the cultural reproduction of inequality and the intergenerational transmission of class advantage.

Theory of Concerted Cultivation

Intergenerational transmission of class advantage within families is one form of the cultural reproduction of inequality. In an ethnographic study of 12 families, Annette Lareau (2003) examines the role of cultural logic in childrearing. Lareau (2003) argues that the mechanism by which class advantage is produced and reproduced is through distinct class based approaches to childrearing (Lareau 2002, 2003). Middle-class parents engage in a parenting style Lareau (2003) calls “concerted cultivation” and working-class parents engage in “the accomplishment of natural growth.” The class based approaches to parenting each have distinct cultural logics (Lareau 2003). Cultural logic encompasses beliefs and actions. While middle and working-class mothers may express similar beliefs, behaviors still differ and thus, cultural logics also differ.

The theory of concerted cultivation as an approach to childrearing asserts that middle-class parents actively foster a child’s talents, opinions, and skills. In contrast, the theory of the accomplishment of natural growth asserts that working-class parents actively attempt to provide the necessities for children to grow. Lareau (2003) suggests that such class based approaches to childrearing vary along three key dimensions: the organization of daily life, the use of language, and social connections.

The organization of daily life for children in middle-class families is very different from their working-class counterparts. Middle-class children’s days are filled with scheduled adult supervised activities. The children’s activities often determine the schedule for the entire family (Lareau 2003). In contrast, working-class children have open-ended agendas. Play is generally informal and impromptu with kin or neighboring children. Working-class parents place a much higher premium on respect for adults, related or not related, thereby creating clear boundaries between adults and children in working-class families (Lareau 2003).

Language use between middle-class parents and children varies in distinct ways from the language use between working-class parents and children. Lareau (2003) reports that, in middle-class families, steady flow of conversation are interrupted by silence compared to the homes of their working-class counterparts whose steady silence is interrupted by speech. Not only does language use create very different home environments in which children grow, children of different classes are taught to use language differently (Lareau 2003). Children in working-class families obey directives and appear to be subdued and silent in the presence of adults. Children in middle-class families, in contrast, experience a home environment in which steady patterns of conversation with parents is the norm. Middle-class parents engage in conversation, reasoning, and negotiation with children. This approach fosters a strong vocabulary in middle-class children so that children were often observed using their learned vocabulary skills to argue or disagree with parents (Lareau 2003). Although Lareau (2003) does not argue that one approach to childrearing is intrinsically better than the other, she does maintain that the concerted cultivation approach to childrearing, in terms of language use, may prove to be beneficial for middle-class children because society is increasingly placing a premium on “assertive, individualized actions executed by persons who command skills in reasoning and negotiation” (Lareau 2003: 133).

Social connections also vary by class. Middle-class children observe parents’ assertive interventions in school. Lareau reports that the middle-class parents demonstrate to children that they have a right to approach teachers and administrators with classroom concerns (Lareau 2003; 177). Middle-class parents also often “scanned the horizon for opportunities to activate their cultural capital and social capital on behalf of their children” (Lareau 2003; 180). Working-class parents do not have the same attitudes toward social institutions, like schools. Children of

working-class parents observe parents' obedience to and dependence on people in positions of authority and learn to be weary in their interactions with authority.

Based on the three key dimensions, Lareau (2003) finds that middle-class children demonstrate emerging signs of a “sense of entitlement” and working-class children, “a sense of constraint” (Lareau 2003; 163).

FIGURE 1: Typology of Differences in Childrearing

	Child-Rearing Approach	
	Concerted Cultivation	Accomplishment of Natural Growth
Key Elements	Parent actively foster and assess child's talents, opinions, and skills	Parent cares for child and allows child to grow
Organization of Daily Life	Multiple child leisure activities orchestrated by adults	“Hanging out,” particularly with kin, by child
Language Use	Reasoning/directives Child contestation of adult statements Extended negotiations Between parents and child	Directives Rare questioning or challenging of adults by child General acceptance by child of directives
Interventions at Institutions	Criticism and intervention on behalf of child Training of child to take on this role	Dependence on institutions Sense of powerlessness and frustration Conflict between child-rearing practices at home and at school
Consequences	Emerging sense of entitlement on the part of the child	Emerging sense of constraint on the part of the child

Source: Lareau (2003: 31)

Middle-class children observe their parents' interactions with institutions in a distinct way and imitate the assertive demeanor. The skills middle-class children instinctively learn from their parents are skills rewarded in social institutions like schools. Although Lareau (2003) does not suggest either approach to childrearing is inherently “good” or the “right way,” it is clear that the “sense of entitlement” middle-class children develop has its benefits for future interactions with various social institutions.

Lareau (2003) also suggests that the distinct cultural logics interwoven in concerted cultivation and the accomplishment of natural growth are not simply the result of varying economic and social resources. Parents transmit advantage to children “in patterns that are sufficiently consistent and identifiable to be described as ‘cultural logic’ of childrearing” (Lareau 2000; 772). Cultural logic in childrearing approaches, in conjunction with economic and social resources, produces emerging senses of entitlement in middle-class children and senses of constraint in working-class children, having crucial influences on the ways in which children interact with social institutions such as schools.

Previous literature on the unique social and cultural characteristics of the Hispanic population suggests there is reason to be attuned to the independent role of racial and ethnic background in shaping the lives of children. Therefore, Lareau’s (2003) concentration on the power of social class may be problematic, because prior literature suggests that racial and ethnic background plays an important independent role in shaping the cultural capital investments and returns of family resources in children.

CONCEPTUAL FRAMEWORK

Research Questions

The research questions in this paper examine differences in parental cultural capital investment in children’s development independently by socioeconomic status and race and ethnic background. Rising inequality affects the economic, social, and cultural capital resources rich and poor families can invest in children. Disparities in such investments, though, differentially affect the skill acquisition, educational attainment, and intergenerational mobility of children by race and ethnic background.

This paper addresses the following research questions for white, black, and Hispanic kindergarten students: To what extent is concerted cultivation driven by socioeconomic status?

And to what extent does concerted cultivation have an effect on the (i) general knowledge, (ii) mathematics, and (iii) literacy achievement of kindergarten students?¹

Hypotheses

(H1) Concerted cultivation is distinct from SES for Hispanic students.

(H2) SES is positively and significantly associated with concerted cultivation for Hispanic students.

(H3) There is a positive relationship between concerted cultivation and kindergarten general knowledge achievement of Hispanic students

(H4) There is a positive relationship between concerted cultivation and kindergarten mathematics achievement of Hispanic students.

(H5) There is a positive relationship between concerted cultivation and kindergarten literacy achievement of Hispanic students.

DATA

Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999

The data used in this study are from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 (ECLS-K). The ECLS-K data (N= 21,260)² are a nationally representative longitudinal survey funded by the U.S. Department of Education, National Center for Education Statistics (NCES). The ECLS-K are the multifaceted data designed to provide a comprehensive description of children's development and early school experiences. This approach makes ECLS-K the most appropriate data set to study approaches to parenting as it relates to children's subsequent academic performance.

In general, ECLS-K data focuses on three general themes: (i) schooling and performance, (ii) status and transitions, and (iii) the interaction of school, family, and community. The ECLS-

¹ Analyses are completed in two parts: (1) Concerted cultivation acts as a dependent variable in Hypotheses 1 and 2 to measure the influence of SES on Concerted cultivation, and (2) Concerted cultivation in Hypotheses 3, 4, and 5 acts as an independent variable to measure its influence on measures of academic achievement.

² Consistent with Bodovski and Farkas (2008), the subsample used in this study is approximately 15,000.

K data specifically offer descriptive information concerning children's cognitive, emotional, social, and academic development as it relates to these three broad themes. Information from children, their families, teachers, and schools was collected from kindergarten through 8th grade in the fall and spring of kindergarten (1998-1999), the fall and spring of 1st grade (1999-2000), the spring of 3rd grade (2002), and the spring of 5th grade (2004), and the spring of 8th grade (2007).

Sample Design and Performance Test Measures

The ECLS-K sampling frame is a multistage cluster design. First, primary sampling units were drawn from county-level population data. Second, 100 primary sampling units were drawn and stratified based on size, race, and per capita income, then public and private schools with kindergarten grades were drawn from the remaining sample of primary sampling units, and the final stage included sampling kindergarten children from within schools (U.S. Department of Education, NCES).

Dependent Variables

General Knowledge Assessment. The general knowledge assessment tested students' science and social studies knowledge. This assessment consisted of questions concerning a child's conception, understanding, and ability to draw inferences of the social, physical, and natural world. The measure of general knowledge used in this study is an Indirect Cognitive Assessment (ARS) developed by ECLS-K to holistically measure teachers' evaluations of students' general knowledge achievement along with students' direct cognitive general knowledge assessment scores. This measure of general knowledge overlaps and augments the information gathered from students' individually direct cognitive assessment administered and standardized (IRT-scaling). The indirect cognitive assessment is used because this measure

captures both the process and product of children's learning. These scores, as a result, reflect a broader sample of national curriculum standards and guidelines because they are not restricted by upper or lower bounds of direct assessment structures. General knowledge scores were rescaled to range from one to five and standardized in this study to have a mean of 0 and standard deviation of 1.

Mathematics Assessment. Mathematics assessment measures student acquisition of skills, instead of specific knowledge and was designed to measure processes and products of students' conceptual, procedural, and problem solving knowledge. All mathematics assessment scores were rescaled to range from one to five and standardized in this study to have a mean of 0 and standard deviation of 1.

Literacy Assessment. Literacy assessment tested skills such as recognition and comprehension, instead of specific knowledge to augment the information gathered from students' individually administered and standardized (IRT-scaling) direct cognitive assessment. The indirect cognitive assessment scores were rescaled to range from one to five and then standardized in this study to have a mean of 0 and standard deviation of 1.

Explanatory Variables

Concerted Cultivation. This study uses a scale of concerted cultivation created by Bodovski and Farkas (2008) to measure a concerted set of parenting strategies defined by Lareau (2003). Consistent with Lareau's (2003) definition, Bodovski and Farkas (2008: 909) assert that: "rather than any particular activity by itself, it is a concerted set of these activities that create positive outcomes for children." The quantitative measure of concerted cultivation is the sum of three dimensions of childrearing.

The first quantitative dimension measures "parental perceptions of their responsibilities towards their child" (Bodovski and Farkas 2008: 909). Parental survey questions asked how

often parents participated in the activities presented in Figure 2 (Bodovski and Farkas 2008). All items were summed and then z-scored.

FIGURE 2: First Quantitative Dimension of Concerted Cultivation

Variable	Description
<u>Parental Perceptions of Responsibilities:</u>	
P4HMWORK	How often Help Homework
P4TELLST	How often You Tell Child Stories
P4SINGSO	How often You All Sing Songs
P4HELPAR	How often You Help Child Do Art
P4GAMES	How often You All Play Games
P4NATURE	How often You Teach Child Nature
P4BUILD	How often You All Build Things
P4SPORT	How often You All Do Sports
P4DWRNM	How often Practice Numbers
P4READBO	How often You Read to Child
P4LISTEN	Listen to Child When Busy
P4OPINIO	Encourage Child to Express Opinion

The second quantitative dimension “concerns the ways children spend their leisure time, in particular their participation in organized activities” (Bodovski and Farkas 2008: 910).

Parental survey questions asked whether the child participated in the activities or educational trips presented in Figure 3 (Bodovski and Farkas 2008). Participation in any single activity was coded 1 and 0 otherwise. All organized activities and educational trips were summed and then z-scored.

FIGURE 3: Second Quantitative Dimension of Concerted Cultivation

Variable	Description
<u>Leisure Time:</u>	
P4DANCE	Takes Dance Lessons
P4ATHLET	Participation In Athletic Events
P4MUSIC	Take Music Lessons
P4ARTCRF	Takes Art Lessons
P4ORGANZ	Participate in Organized Performing
P2CRAFTS	Takes Craft Lessons
P4LIBRAR	Visited the Library
P2CONCRT	Gone to a Play, Concert, Shows
P2MUSEUM	Visited a Museum
P2ZOO	Visited a Zoo, Aquarium

The third quantitative dimension measures “parents’ relationships with social institutions, particularly schools” (Bodovski and Farkas 2008: 910). Parental survey questions measured parental participation in the activities and events presented in Figure 4 (Bodovski and Farkas

2008). All parental questions included were dichotomous. All dichotomous variables were summed. The sum was then z-scored.

FIGURE 4: Third Quantitative Dimension of Concerted Cultivation

Variable	Description
<u>Parents' Relationship with Social Institutions</u>	
ATTENB	Attended an Open House or Back-to-School Night
ATTENP	Attended a Meeting of PTA or PTO or Parent Teacher Student Organization
PARGRP	Gone to a Regularly-Scheduled Parent-Teacher Conference with Child's Teacher or Meeting with Child's Teacher
ATTENS	Attended a School or Class Event, Such as a Play, Sports Event, or Science Fair
VOLUNT	Acted as a Volunteer at the School or Served on a Committee
FUNDERS	Participated in Fundraising for Child's School

Consistent with Bodovski and Farkas (2008), in addition to these dimensions, the number of children's books at home was z-scored to have a mean of 0 and standard deviation of 1. Together the scale of concerted cultivation is the standardized sum of each standardized dimension and measure of children's books at home.

FIGURE 5: Number of Children's Books at Home, Additional Component of Concerted Cultivation

Variable	Description
<u>Children's Books at Home</u>	
P4CHILBOO	Number of Children's Books Have/Are in Your Home Now

Race/Ethnic Background. In this study, a race variable was created and coded into four race and ethnic groups: white, black, Hispanic, and other³. A dummy variable was then created for black, Hispanic, and other⁴. Race and ethnicity dummy variables are used to estimate separate models for each race and ethnic group: white, black, and Hispanic students. For example, for each analysis of an outcome variable (i.e. general knowledge, mathematics, and

³ Although Asian and Pacific Islanders and Native Americans are distinct racial and ethnic groups, in this study these groups were joined to form others because it is beyond the scope of this study to examine the impact of these mechanisms for Asian and Pacific Islander and Native Americans.

⁴ White is the reference category for race and ethnic background dummy variables when models include all students.

literacy) a model is first estimated for all students. This model is then independently estimated for only white students, only black students, and then only Hispanic students.

The analysis for each outcome measure is estimated in separate models in this way (i.e. all students, white students, black students, and Hispanic students) to approximate the effect of *each* explanatory variable as it interacts with the racial and ethnic group designated for that specific model. This design does not presuppose that the effect of *any* single explanatory variable is equal for all racial and ethnic groups. Instead, separate analyses by race and ethnic group for each outcome measure takes into account the complexity of the ways in which race interacts with a variety of explanatory variables (i.e. child and family social background characteristics).

Socioeconomic Status. This variable is created from parent interviews in the fall and spring of kindergarten. Questions include information on: father/male guardian's education, mother/female guardian's education, father/male guardian's occupation, mother/female guardian's occupation, and household income. Parent's occupation reflects the average of the General Social Survey (GSS) prestige score of the occupation. All components of the SES variable were imputed, summed, and then z-scored. The composite SES variable is a continuous variable that ranges from -4.75 to 2.75. In all regression analyses, socioeconomic status functions as a continuous variable.

Poverty. This variable is created from composite variables measuring income, household person totals, and Census-defined thresholds. This variable is dichotomous (i.e. below poverty threshold and at or above poverty threshold). The poverty variable was created and coded 1 for below the Census-defined poverty threshold and 0 at or above the poverty threshold.

Female. This composite gender variable is dichotomous (i.e. male or female) and a female dummy variable is created. In all analyses, male is the reference group.

Kindergarten Repeater. A kindergartener repeater variable was created and coded as 1 and students whose records did not were coded as 0.

Age. This variable is calculated by determining the number of days between the child assessment date and the child's date of birth divided by 30 to calculate the child's age in months. This age variable functions as a continuous control variable.

Non-English Household. A non-English household dummy variable was created. Children's households who reported primarily speaking a non-English language were coded as 1 and children's households who reported primarily speaking English were coded as 0. In all analyses, English household is the reference group.

Child Citizenship. A child citizen dummy variable was created. Children whose parents indicated the child was a citizen were coded as 1 and children who were not were coded as 0.

Single Parent Household. A single parent household dummy variable was created based on ECLS-K family classifications.

Parents' Educational Expectations for Child. This is a continuous variable ranging from 1 to 6 (i.e. less than high school to Ph.D., MD or other higher degree). The z-score of this range was computed to have a mean of 0 and standard deviation of 1.

Child Care. This variable is classified into categories: no non-parental care, relative care in child's home, relative care in another home, non-relative care in child's home, non-relative care in another home, Head Start, center-based program, 2 or more program, and location of care varies. For this study, relative, non-relative, Head Start, center based, and multiple care participation were coded as 1 and no participation was coded as 0.

FINDINGS

TABLE 1: Descriptive Statistics for Base Year, Early Childhood Longitudinal Study
Kindergarten Class of 1998, Percents Presented.

<i>Characteristic</i>	<i>Concerted Cultivation</i>	<i>General Knowledge</i>	<i>Math</i>	<i>Literacy</i>
Race				
White	60.6	60.5	60.9	60.6
Black	12.9	12.8	12.5	12.9
Hispanic	16.3	16.4	16.9	16.4
Other	10.1	10.3	9.6	10.0
Socioeconomic Status				
Quintile 5 (High)	21.6	22.6	22.0	21.1
Quintile 4	21.8	21.8	21.6	21.8
Quintile 3	19.9	19.9	20.2	20.2
Quintile 2	18.6	18.3	18.6	18.4
Quintile 1 (Low)	18.1	17.5	17.5	18.5
Poverty Status				
At or Above Poverty Threshold	81.7	82.1	82.0	82.2
Below Poverty Threshold	18.3	17.9	17.9	17.8
Gender				
Male	50.9	50.7	50.8	50.9
Female	49.1	49.3	49.2	49.1
Kindergarten Status				
Kindergarten First Time	96.2	95.7	95.6	95.8
Kindergarten Repeater	3.8	4.3	4.4	4.2
Household Language				
English Household	87.7	88.6	88.4	88.5
Non-English Household	12.2	11.4	11.6	11.5
Child Citizen				
Child U.S. Citizen	98.3	98.3	98.4	98.3
Child Not U.S. Citizen	1.7	1.7	1.6	1.7
Family Structure				
Two Parent Household	82.1	80.2	80.4	80.1
Single Parent Household	17.9	19.8	19.6	19.9
Parental Expectations				
High School or Less	8.9	8.8	9.0	8.9
Two or More Years of College	14.0	13.6	13.5	13.8
Finish 4 Year College Degree	76.9	77.6	77.5	77.2
Child Care				
No Non-Parental Care	18.4	18.5	18.8	18.6
Relative Care	13.3	13.2	13.3	13.3
Non-Relative Care	10.7	10.6	10.8	10.6
Head Start	8.4	8.6	8.2	8.3
Center Based	44.2	44.3	44.1	44.3
Multiple Care	4.7	4.6	4.7	4.8
Total Observations	14,737	10,483	9,882	12,076

TABLE 2: OLS Regression Coefficients of Concerted on Socioeconomic Status (ECLS-K data).

	All Students	White Students	Black Students	Hispanic Students
	Concerted Cultivation	Concerted Cultivation	Concerted Cultivation	Concerted Cultivation
SES (Continuous)	1.450*** (0.0225)	1.314*** (0.0313)	0.945*** (0.0615)	1.632*** (0.0574)
Constant	-0.0404** (0.0180)	0.320*** (0.0244)	-0.643*** (0.0513)	-0.440*** (0.0465)
Observations	14,737	8,931	1,894	2,403
R-squared	0.220	0.165	0.111	0.252

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Hypothesis 1

Findings suggest concerted cultivation is distinct⁵ from socioeconomic status. All Pearson's correlation coefficients are statistically significant at p<0.05. However, the coefficients vary across race and ethnic groups. For example, the correlation between concerted cultivation and socioeconomic status is smallest for black students (0.3331) and largest for Hispanic students (0.5018) relative to white students (0.4058). This suggests that, relative to white families, concerted cultivation is the most different (i.e. least correlated with socioeconomic status) for black families and least different (i.e. most correlated with socioeconomic status) for Hispanic families.

For all groups, despite differences, the relatively low Pearson's correlation coefficients support Lareau's (2003) argument that concerted cultivation is conceptually and practically distinct from socioeconomic status. The present study extends analysis to the Hispanic population and results strongly support Hypothesis 1 that concerted cultivation is conceptually and practically distinct from SES for Hispanic student. Further, concerted cultivation is best

⁵ Distinct in this study is defined as the absence of perfect correlation.

captured by socioeconomic status for Hispanic families than for any other single race or ethnic group.

Hypothesis 2

Findings also suggest SES is positively and significantly associated with concerted cultivation for all racial and ethnic group, though the coefficients vary between groups. This suggests that, relative to white families, an increase in SES result a smaller increase in concerted cultivation among black families and larger increase among Hispanic families.

TABLE 3: Impact of Concerted Cultivation on Academic Achievement Measures (ECLS-K data).

Outcome Measures	OLS Regression Coefficients in Models for:			
	All Students	White Students	Black Students	Hispanic Students
General Knowledge	0.042***	0.036***	0.041***	0.025**
Mathematics	0.040***	0.041***	0.042***	0.025**
Literacy	0.046***	0.039***	0.062***	0.035***
*** p<0.01, ** p<0.05, * p<0.1				

Note: All models control for socioeconomic status, poverty, gender, kindergarten status, child age, household language, child citizenship, family structure, parental expectations, and child care.

Hypothesis 3

Concerted cultivation is positively but not significantly associated with early general knowledge achievement for Hispanic students. All things equal, the impact of concerted cultivation on general knowledge is largest for black students (0.041) and smallest for Hispanic students (0.025). This suggests that, relative to white students, an increase in concerted cultivation results in a larger increase in general knowledge achievement for black students and a smaller increase for Hispanic students.

Hypothesis 4

Concerted cultivation is positively but not significantly associated with early mathematics achievement for Hispanic students. The impact of concerted cultivation on mathematics is

positive and significant for all racial and ethnic groups, though the impact of concerted cultivation on mathematics is largest for black students (0.042) and smallest for Hispanic students (0.025). This suggests that, relative to white families, an increase in concerted cultivation results in a larger increase in mathematics achievement for black students and a smaller increase for Hispanic students.

Hypothesis 5

Concerted cultivation is positively but not significantly associated with early literacy achievement for Hispanic students. Similar to general knowledge and mathematics, the magnitude of the impact of concerted cultivation on literacy assessments varies by racial and ethnic group. The impact of concerted cultivation on literacy is largest for black students (0.062) and smallest for Hispanic students (0.035). This suggests that, relative to white families, an increase in concerted cultivation results in a larger increase in literacy achievement for black students and a smaller increase for Hispanic students.

CONCLUSION

Although the majority of research on the intergenerational transmission of advantage in childrearing has focused either on white students or on black students, the demographic influx among Hispanics makes it increasingly important to consider the early role of cultural capital investments through class-based approaches to childrearing in shaping children's life chances.

The findings of this study suggest that concerted cultivation is most strongly associated with social class for Hispanic families and least for black families. The positive influences of concerted cultivation on all three measures of academic achievement for Hispanic students are weaker than they are for white and black students.

Identifying the effects of differential investments and returns of cultural capital through concerted cultivation by race and ethnic groups highlights the importance of studying the validity

of cultural capital measures in the context of different racial and ethnic groups and how income and socioeconomic inequality differentially influence children's early skill acquisition and educational attainment as areas of future research inquiry.⁶

By and large, the extent to which advantage—or disadvantage—is reproduced varies by race. The returns of parental cultural capital investment, in the form of concerted cultivation, are not equal across race and ethnic groups. The disadvantages with which children enter schools are visible, yet the processes of cultural reproduction which develop such disadvantages often remain invisible. Thus, contrary to previous literature, the current study demonstrates the importance of analyzing the independent role of racial and ethnic background as a factor to help explain growing socioeconomic achievement gaps from a cultural capital investment perspective.

⁶ The current study did not have access to ECLS restricted-use data. Future work with restricted-use data access would do well to explore the influence of immigrant generation and country of origin on investments and returns of concerted cultivation.

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ICPSR 2012 Research Paper Competition Winners

Undergraduate

“Racial and Ethnic Threats in Pretrial Release Processing”
Quentin Karpilow, Kenyon College

Master's

“A Symptom Profile Analysis of Depression in a Nationally Representative Sample of Asian Americans”
Zornitsa Kalibatseva, Michigan State University.

Resource Center for Minority Data Competition

First Place: “Cultural Capital Investments: Concerted Cultivation and the Academic Achievement of Hispanic Kindergarten Students”
Amanda Mireles, Princeton University.

Second Place: “Black Feminism and Hip Hop: A Cross-Generational Disconnect”
Danae Ross, Wayne State University



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ICPSR invites submissions for our 2013 Research Paper Competitions from undergraduates and master's students at member institutions. We are holding three contests this year:

- The ICPSR Research Paper Competition, for analyses on any topic using data from the ICPSR Archive or Thematic Collections.
- The IFSS Research Paper Competition, for analyses on any topic using data from the Integrated Fertility Survey Series.
- The RCMD Research Paper Competition, for analyses on issues relating to minorities in the United States, including immigrants, using data from the Resource Center for Minority Data.

All competitions are open to undergraduate and master's students.

The competition has the following requirements:

- **Originality.** Each paper must be an original analysis

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- **One submission.** Students may submit only one paper, whether as sole author or one of the coauthors.

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