Black/White Disparity in Self-Feelings: Life Course Look at Racial Disparity in Depression, Anxiety, and Self-Derogation

Paradoxically, while black and Hispanic minorities in the US experience higher levels of discrimination and are overrepresented among lower socio-economic strata, yet they report lower levels of depression and higher levels of self-esteem than whites (Barnes, Keyes and Bates 2013, Blazer, Kessler and McGonagle 1994, Hughes and Demo 1989, Williams et al. 2007). Recently, there has been an increase in race and health researchers trying to understand this puzzle (see 2018 ASA Annual Meeting, section on Race, Ethnicity, and Mental Health: Critical Issues). In this paper, we propose to: 1) explore the gap between non-Hispanic whites and blacks at different ages from adolescence to adulthood and across two different generations; 2) compare the gap between non-Hispanic whites and blacks in three different dimensions of negative self-feelings (anxiety, depression, and self-derogation), and; 3) propose a logical mechanism to explain the gap. In particular, we hypothesize that racial difference in locus of control (Rotter 1966, Rotter 1990) explains the gap in negative self-feelings between whites and blacks more completely than minority stress theory (Balsam et al. 2011, Thoits, 2010).

Previous research finds relatively consistently that minorities have lower levels of depression and higher levels of self-esteem than whites (Barnes, Keyes and Bates 2013, Blazer, Kessler and McGonagle 1994, Hughes and Demo 1989, Williams et al. 2007). Similarly, the Center for Disease Control (CDC) reports that one of the main contributors for the recent increase in white mortality (Case and Deaton 2015; CDC 2010) is the gap in suicides – the age adjusted suicide rate is much higher among whites (16.98 per 100,000) than it is among blacks (6.25 per 100,000) in the US in 2016 (CDC 2016). However, the discrepancy in suicide rates between blacks and whites is not new. In 1990, the black to white ratio in age-adjusted death rate

for the fifteen leading causes of deaths showed that blacks were considerably less likely to die due to suicide than whites (Collins and Williams 1995). This discrepancy in mental health and self-feelings between black and white populations is deemed a paradox because, based on minority stress theory (Balsam et al. 2011, Meyer 1995, Mirowsky and Ross 1980, Thoits 2010), minority status is lower in the status hierarchy and minority status is in conflict with the social environment of the majority. Therefore, being included in a minority group should increase stress for minorities. Instead, however, minority group members have lower levels of depression and suicide, and higher levels of self-esteem.

Negative self-feelings is a combination of three different feelings: symptoms of depression, anxiety, and self-derogation (Kaplan and Lin 2000). While they are sometimes considered as a combined construct (Kaplan 2000), it is conceivable that these different aspects of negative self-feelings reveal a different disparity between non-Hispanic whites and blacks. Using data from the Kaplan Longitudinal and Multigenerational Study (KLAMS 2016), we are able to investigate the gap in all three components of negative self-feelings for two generations from adolescence to adulthood.

We anticipate that the black-white disparity in self-feelings is not the same across all developmental stages. The major change in life course and how we relate to the rest of the world comes with the emergence of the adulthood. Therefore, we expect to see the disparity change once a person enters the adulthood (Bridge, et al. 2018). Similar to the difference by age, there could also be racial differences over time. Louie and Wheaton (2018) test the prevalence of mental disorders through adolescence for 3 cohorts of black and white Americans. Blacks born during 1957–1969 reported lower rates of anxiety disorders than their white counterparts; blacks born during 1970–1982 reported no difference in the rates of anxiety disorders relative to whites;

and blacks born during 1983–1991 reported higher rates of anxiety disorders than whites (all measured at ages 4-18). Similar but less distinct trends were observed for mood disorders, impulse control disorders, and any disorders. Thus, the gap in self-feelings for blacks and whites could vary from one cohort to another.

There are few studies that attempt to explain the black and white gap in self-feelings, none so far explain that gap conclusively. Possible contributions include stronger family networks, stronger social networks, and resistance to structural economic changes. Mouzon (2013) investigates family networks as a possible explanation of mental health gap between black and white. Using data from the 2003-2005 National Survey of American Life (N=4,259), she shows that differences in family relationships do not explain the gap in mental health between black and white. Based on a recent ASA presentation (Roxburgh and MacArthur 2018) social support from friends, church members, and partners contribute to better mental health regardless of race. Another recent ASA presentation (Henderson and Moye 2018) asserted that negative recession experiences did not affect depression for blacks as much as it affected the depression for whites.

Thus, based on previous research, social networks do not explain the self-feelings gap between blacks and whites. However, some of the difference in black and white disparity in mental health can be attributed toward resistance to economic difficulties. One possible factor that might provide a logical connection between suicide and resistance to economic difficulties is locus of control. Locus of control refers to a personal belief about the attribution of fate: whether one attributes successes and failures to one's self or, conversely, to outside forces (Rotter 1966, Rotter 1990). Thus, people with an internal locus of control believe that they themselves can influence their future, whereas those with an external locus of control believe that their future is

largely influenced by forces external to them (Rotter 1990). In addition to relatively higher self-esteem, minority group members report less internal locus of control relative to whites (Hughes and Demo 1989, Lefcourt 2014, Ross and Mirowsky 1989, Shaw and Krause 2001, Tashakkori and Thompson 1991).

The motivational theory of lifespan development (Heckhausen, Wrosch and Schulz 2010) will guide this research in establishing whether external locus of control can act as an adaptive rather than a maladaptive pattern in the development of negative self-feelings. In general, studies indicate that an internal locus of control (or sense of having personal control) is related to lower levels of negative self-feelings (Benassi, Sweeney and Dufour 1988, Kohn and Schooler 1982, Mirowsky and Ross 2003, Pearlin et al. 1981, Wheaton 1983). However, in situations where one does not have control over outcomes, external locus of control might be beneficial. Wortman and Dunkel-Schetter (1979) suggest that cancer patients with internal locus of control might blame themselves for their deteriorating condition. Thus, in situations where individuals lack control, an internal locus of control might become a maladaptive mechanism.

Prior research found that, over time, the continuity in negative self-feelings was stronger for those with an internal locus of control and weaker for those with an external locus of control (Pals and Kaplan 2013). This was especially true for economically disadvantaged neighborhoods. This indicates that external locus of control has long-term benefits, opposite to concurrent or short-term benefit of internal locus of control shown in the majority of literatures considering locus of control. Furthermore, it is possible that black Americans are more likely to attribute bad economic outcomes to external sources while white Americans attribute bad economic outcomes to internal sources. Thus, an external locus of control might be beneficial for

the self-feelings of black Americans while it might not be beneficial for white Americans. This leads to our hypotheses:

H1: There is a gap in self-feelings between non-Hispanic whites and blacks.

H1a: Blacks tend to have more positive self-feelings than whites.

H2: The self-feelings gap between blacks and non-Hispanic whites varies by age.

H3: The self-feelings gap between blacks and non-Hispanic whites is similar in different generations.

H4: The gap between blacks and non-Hispanic whites is different for different components of self-feelings (depression, anxiety, and self-derogation).

H5: Differences in locus of control explain some of the gap in self-feelings between blacks and non-Hispanic whites.

Data

We rely on the unique, multi-generational longitudinal KLAMS dataset (KLAMS 2016; see Figure 1 for the summary outline of this study). KLAMS data measure locus of control and self-feelings for two different generations (parents and children) from adolescence to adulthood. The first-generation data collection started in 1971 and continued with a total of 6 waves of data collection until 1998. The second-generation data collection started in 1994 and has a total of three waves of data collection following the respondents from adolescence to young adulthood. This allows us to investigate the gap in black-white self-feelings (we compare depressive symptoms, anxiety and self-derogation) and locus of control at different ages and in different

historical time points. We can also model the effect of locus of control on the development of self-feelings over the life course for both whites and blacks comparatively.

[Figure 1 about here]

We are only focusing on whites and blacks because we do not have a sufficiently large sample size for Asians or Native Americans. Also, Hispanics in KLAMS data are excluded from this analysis because, due to the structure and timing of data collection, there are no recent immigrants in the data. All Hispanics in the KLAMS data were already in Houston by 1971. Therefore, we feel that the Hispanic sample in KLAMS data is not a good representative sample of average Hispanic population in the US.

Measures

To create the measures of depressive symptoms, anxiety, self-derogation, and locus of control, we use a battery of questions asked in a similar manner in both first and second-generation throughout the study. Keeping the measure exactly the same throughout the study limits somewhat our choice of variables, however, we feel, is absolutely necessary to be able to compare two generations and different time-points. Since our indicators for these constructs are dichotomous, we use the Kuder-Richardson Reliability Coefficient and Polychoric Principal Component Analysis to determine whether these are good indicators of the four underlying measures.

We measure depressive symptoms, anxiety, and self-derogation with five to six items each throughout the study. Depressive symptoms are measured indicating whether a person (1) wishes to be as happy as others seem to be; (2) feels in good spirits most of the time; (3) often loses track of what they were thinking; (4) has difficulties concentrating; (5) has trouble sitting

still for a long time; and (6) has trouble sleeping. Anxiety is measured by (1) anxiousness; (2) biting fingernails; (3) bad dreams; (4) headaches; and (5) sweaty hands. Self-derogation is measured by (1) feeling as a failure; (2) feeling useless; (3) feeling no good at all; (4) being not satisfied with oneself; (5) lack of respect towards oneself; and (6) not feeling proud about oneself. The Kuder-Richardson Reliability Coefficient is lowest for anxiety. It is .48 in one wave (generation one time 2) and between .50 and .58 in other waves. For depressive symptoms, the Kuder-Richardson Coefficient varies from .54 to .66. For self-derogation, the Kuder-Richardson Coefficient varies from .56 to .75. The Polychoric principal analysis for all of these constructs always suggests only one factor as the eigenvalue drops below 1 for the second factor.

Three classic measures are used to capture respondents' level of locus of control: "It is mostly luck if one succeeds or fails", "You can do very little to change your life", and "Often I feel that I don't have enough control over the direction my life is taking." We count the number of times a respondent has indicated that they have external locus of control (answer "yes" to above question). The same measure has been used in all waves of data except for the fifth wave in first-generation (approximately 28 year old respondents). In this wave we do not have these measures of locus of control and therefore, we have to skip this wave of data for the analysis including locus of control.

In all the models, we control for gender, race (non-Hispanic white vs. black), and socioeconomic status (SES). We are unable to measure socio-economic status in a similar manner in all different waves due to different ages of the respondents. For the first-generation respondents in first three waves (7^{th} grade, 8^{th} grade, and 9^{th} grade) we measure socio-economic status through the measurement of parental education. We use the mean of reported parental years of education. If only one parent's education is reported, then we use just this education

level. The original question in phrased: “What is the most schooling your mother (father) or step-mother (step-father) has had?” There are 4 answer choices: “Did not graduate from elementary school”; “Graduated from elementary but not from high school”; “Graduated from high school”; and “Graduated from college”. Similarly, we use the mean of parental education in wave 4 (when the respondents are in their twenties), however, at that time the parental education is measured in more precise terms. The answer choices range from “No formal schooling” to “Post-graduate degree”, total 11 different levels of education are captured. In the two adult waves (in early 30s and in late 30s) we use the household income as the measure of socioeconomic status. We convert the original categorical measure of household income to income in thousands of dollars using the middle point in each category. In the second-generation, we have a better measure of socioeconomic status – we use the parental income from the latest parental survey at the time when the second-generation respondents were in adolescence. Since we are able to use the parents’ own report of their income, this is a more reliable measure than asking the adolescents about their parents’ income of level of education.

Analysis

For preliminary analyses, we estimated a series of simple linear regression models predicting depression, anxiety, and self-derogation at nine different time points (6 time points for parental generation and 3 time points for children’s generation). The models include race, gender, and a measure of SES. These regressions enable us to see the black-white disparity over time (over life course and between two different generations) and it allows us to compare the black-white disparity between different components of negative self-feelings.

Table 1 presents a summary of these regressions. This is a summary of 27 different regression models (9 different time-points for predicting 3 different components of negative self-feelings). To facilitate the comparison, we have not reported the coefficients for the control variables here. Instead, Table 1 presents the unstandardized coefficients for blacks (compared to whites) showing the disparity in reported self-feelings between blacks and non-Hispanic whites at different time points.

[Table 1 about here]

In both generations blacks have higher depression and anxiety than whites in adolescence, however, this reverses in adulthood when blacks have lower levels of depression and anxiety than whites. For the first-generation, blacks have higher depression than whites in ages 12 to 15 (coefficients, .053; .057, and .070, all significant at $p<.001$ level). However, the pattern reverses in young adulthood. Blacks have lower level of depression than whites at around age 25 (-.037; $p<.001$) and in mid adulthood (-.039; $p<.001$). Similar pattern applies for the second-generation. Blacks have higher level of depression than whites in adolescence (.023; $p<.01$), but the discrepancy reverses in adulthood when blacks have lower level of depression than whites (-.048; $p<.01$).

a similar pattern applies to anxiety: blacks in both generations have higher level of anxiety than whites in adolescence, but the discrepancy reverses in adulthood where blacks have lower level of anxiety than whites (the discrepancy in adulthood in thesecond-generation is only marginally significant; $p<10$).

Self-derogation, however, paints a different picture. Throughout the life course in both generations, blacks have significantly lower level of self-derogation than whites. Blacks have a

lower level of self-derogation than whites both in adolescence and in adulthood in both generations. All coefficients, except the one in second wave for the second-generation are significant at least at .05 level. All but one of the discrepancies for self-derogation in the first-generation are significant at .001 level. Clearly, through the different time points and two generations, blacks tend to have a better feeling towards themselves than whites in terms of self-derogation or rumination.

Two waves of data break the above patterns a little, but this can be explained by peculiarity of these waves. The fifth wave of the first-generation (the approximately 28 year-old wave) has a much smaller sample size (1,400) than other waves. Also, it was a targeted sample of about 700 respondents who were at risk of HIV and 700 respondents who were not at risk of HIV, based on responses in previous wave. The second wave of the second-generation data includes people of very different ages (while majority are between 16 and 20 years old, the data includes people of 15-35 years old). Including both late adolescents (when blacks have higher depression and anxiety) and young adults (when blacks have lower depression and anxiety) yields to a non-significant effect for blacks.

Locus of Control

To understand the role of locus of control in this puzzle, we first take a look at locus of control over time. We estimate ordered logistic regressions predicting locus of control in each wave (controlling for gender, race, and socioeconomic status). See Table 2 for the results. Table 2 presents a total of eight ordered logistic regressions, one for each time point (we do not have a measure of locus of control for one of the first-generation waves). Except for one wave, in all other of the waves across time and two generations, blacks tend to have more external locus of

control than whites. The coefficient comparing blacks to non-Hispanic whites is always positive and significant at .001. Only in the latest wave of the first-generation, when the respondents are approaching 40 years old, blacks and whites have the same level of locus of control. In other waves, it seems that, as our respondent's age, there seems to be a slight decrease in the discrepancy in locus of control between blacks and whites. This means, blacks have more external locus of control compared to whites in younger ages.

[Table 2 about here]

Next, we include locus of control in the simple regressions summarized in Table 1. This allows us to see whether locus of control predicts depressive symptoms, anxiety and self-derogation and whether controlling for locus of control affects the disparity in self-feelings between blacks and non-Hispanic whites. In all of the regressions, external locus of control increases the mental health outcome. This means, those with external locus of control have higher depression, higher anxiety, and higher level of self-derogation. Including external locus of control in the models helps to explain the racial disparity in adolescence for depression and anxiety. Thus, regressions where blacks had higher levels of depression and anxiety than whites originally, show now reduced gap between blacks and whites because majority of the discrepancy in depression and anxiety is due to blacks having more external locus of control.

[Table 3 about here]

However, for cases where we observe blacks having originally better mental health outcomes than whites (in adulthood for depression and anxiety; and all age groups for self-derogation), including external locus of control strengthens the discrepancy. I.e., because blacks tend to have higher level of external locus of control and external locus of control contributes to

worse mental health outcomes, controlling for locus of control reveals even larger discrepancy in mental health between black and white respondents.

Discussion and Conclusion

In this preliminary analysis we find that there is a gap in self-feelings between non-Hispanic whites and blacks. However, it varies with age and by the component of negative self-feelings. We find that for depression and anxiety, blacks have worse outcomes than whites in adolescence, but the disparity reverses in adulthood: blacks tend to have lower depression and anxiety in adulthood across both parental and children's generations. For self-derogation, however, the disparity is always, regardless of age and cohort, in favor of blacks: blacks tend to have lower level of self-derogation that whites.

We find that there is also a clear disparity in locus of control: blacks tend to have more external locus of control than whites. However, our preliminary analysis does not indicate that locus of control would explain the black/white paradox. Including locus of control does explain at least a part of the discrepancy in depression and anxiety between black and white in adolescence when blacks have higher levels of depression and anxiety than white. However, in adulthood and in the case of self-derogation, including external locus of control in the model increases the black advantage in self-feelings over whites.

In our final analysis, we will use fuller models with more control variables to make sure that the pattern we see is not dependent on simple demographic controls. For example, we will attempt to control for religiosity, for social support, and for economic difficulties. To overcome the problem of different age compositions in each wave, we will estimate growth curve models by race and try to understand what would predict those patterns. In addition, we will consider lag

models with locus of control to see whether locus of control has an over-time effect on changes in self-feelings.

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Figure 1: KLAMS study timeline.

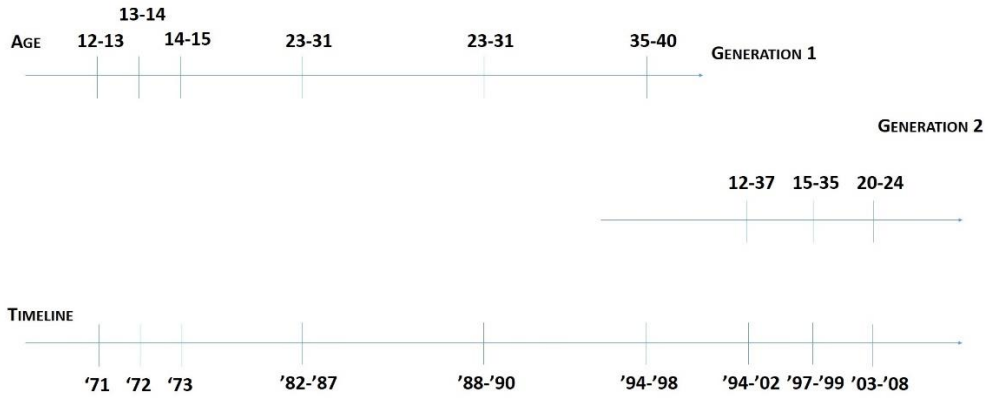

Table 1: Simple linear regression controlling for Gender, Race, and SES.

	Unstandardized Coefficient for Blacks (Compared to White)			Valid N
	Depression	Anxiety	Self-derogation	
Generation 1				
12-13 years	.053***	.047***	-.036***	5,700
13-14 years	.057***	.017†	-.054***	4,230
14-15 years	.070***	.047***	-.040***	3,500
~25 years	-.037***	-.042***	-.033***	5,550
~28 years	-.012	-.028†	-.045**	1,405
35-40 years	-.039***	-.024***	-.057***	4,942
Generation 2				
12-16 years	.023**	.022**	-.015*	7,317
16-20 years	.003	.004	-.008†	2,205
20-24 years	-.048**	-.023†	-.040**	1,575

Unstandardized coefficients from linear regression controlling for gender and SES. In first-generation, SES is measured by an average parental education in first 4 waves. In two latest waves, it is measured by social class and income (one's own income in wave 5 and household income in wave 7). In second-generation, SES is measured by parents' income.

*** p<.001; ** p<.01; * p<.05; † p<.10

Table 2: Ordered logistic regression predicting external locus of control.

	Generation 1					Generation 2		
	12-13 years	13-14 years	14-15 years	~25 years	35-40 years	12-16 years	16-20 years	20-24 years
Black	.821***	.731***	.641***	.638***	.062	.560***	.560***	.483***
Female	-.074	-.171**	-.139	.086	-.006	-.333***	-.256**	.038
SES	-.274***	-.017	-.048	-.122***	-.035***	-.017***	-.011**	-.013**
Valid N	5,120	3,717	3,176	4,986	4,497	6,169	1,801	1,295
Pseudo R-squared	.025	.015	.013	.023	.042	.025	.017	.014

In first-generation, SES is measured by an average parental education in first 4 waves. In latest wave for first-generation, it is measured by household income. In second-generation, SES is measured by parents' income in latest wave of parental survey.

*** p<.001; ** p<.01; * p<.05; ᵗ p<.10

Table 3: Simple linear regression controlling for Gender, Race, and SES.

	Unstandardized Coefficient for Blacks (Compared to White)					
	Depression		Anxiety		Self-derogation	
	Not controlling for locus of control	Controlling for locus of control	Not controlling for locus of control	Controlling for locus of control	Not controlling for locus of control	Controlling for locus of control
Generation 1						
12-13 years	.053***	.011	.047***	.014	-.036***	-.082***
13-14 years	.057***	.022*	.017†	-.007	-.054***	-.099***
14-15 years	.070***	.038***	.047***	.023*	-.040***	-.077***
~25 years	-.037***	-.061***	-.042***	-.060***	-.033***	-.060***
35-40 years	-.039***	-.039***	-.024***	-.023***	-.057***	-.056***
Generation 2						
12-16 years	.023**	.021*	.022**	-.002	-.015*	-.043***
16-20 years	.003	-.005	.004	-.001	-.008†	-.016***
20-24 years	-.048**	-.074***	-.023†	-.041**	-.040**	-.062***

Reduction to non-significance
Reduction
Strengthening

Unstandardized coefficients from linear regression controlling for gender and SES. In first-generation, SES is measured by an average parental education in first 4 waves. In two latest waves, it is measured by social class and income (one's own income in wave 5 and household income in wave 7). In second-generation, SES is measured by parents' income.

*** p<.001; ** p<.01; * p<.05; † p<.10