# Can Success Bring Distress?
# Gendered Mobility Effects among White Men and Women

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**Abstract**

Health outcomes often follow a social gradient; outcomes at the top of the socioeconomic ladder tend to have lower morbidity and mortality than those at the bottom. However, cross-sectional studies may mask mobility processes with counter-intuitive effects. Recent literature suggests upward mobility may negatively impact health outcomes associated with prolonged exposure to stressors. Using the Wisconsin Longitudinal Study, I explore heterogeneity in psychological distress levels among upwardly-mobile men and women and find that upwardly mobile individuals most resemble the mean psychological distress levels of their destination class. However, there is greater variation in distress outcomes among those with "extreme" mobility pathways, such as those who move from the bottom income quintile to the top income quintile. Upwardly mobile women tend to experience greater levels of psychological distress. This study indicates that psychological distress outcomes are sensitive to how we measure social class, as well as how we estimate social mobility.

Extended Abstract (Draft in progress).
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In general, individuals who are better off—those who are higher-earning, better-educated, occupationally higher status—experience better health outcomes than individuals who are less so. Because of the strong, consistent association between socioeconomic status (SES)[2] and both morbidity and mortality rates, SES is conceptualized as a "fundamental determinant of health" (Link and Phelan 1995). Possible mechanisms explaining the relationship between SES and health include the differences in access to resources at varying status positions. For example, education is presumed to causally influence health because higher levels generally confer access to resources such as fulfilling jobs, economic security, social ties, healthy lifestyles, and a sense of personal control (Mirowsky and Ross 2003; Montez and Friedman 2015). Higher income may enable "healthier" consumption behaviors, in forms such as diet and means of transportation, as well as access to higher-quality health care (Backlund, Sorlie, and Johnson 1996; Ecob and Smith 1999; Mackenbach et al. 2005; Martikainen et al. 2001; Pensola and Martikainen 2003; Rahkonen et al. 2000). As greater benefits are generally conferred at higher levels of education, income, and occupational status, such mechanisms suggest that improving SES will improve health outcomes.

In this study, I examine the relationship between upward social mobility and mental health. Several studies that examine the relationship between social mobility and health indicate that, on average, health outcomes improve with SES, though not to the same level as individuals born into the resulting status position (Boyle, Norman, and Popham 2009; Herd, Goesling, and House 2007; Pensola and Martikainen 2003). However, earlier work on psychological distress

[2] Here, SES is used to refer to differences between individuals or groups in possession of resources—schooling, income, prestige—without asserting a relation between the individuals or groups.

found no link between upward mobility and reduced distress[3] (Bean, Bonjean, and Burton 1973; Blau 1956; Jackson and Curtis 1972; Wegner 1973). These findings were interpreted as evidence of assimilation of the upwardly mobile into their new context, assuming the psychological health status of others in the same SES position. Houle (2011), for example, asserts that intra-generational mobility does not impact health outcomes, but that an individual's current class position most directly influences one's psychological distress. In other words, on average, we should expect an individual's level of psychological distress to be associated with the mean level of psychological distress of his socioeconomic status, independent of whether the individual experienced upward or downward mobility.

Nevertheless, there may be psychological costs associated with SES mobility (Ellis and Lane 1967; Hollingshead, Ellis, and Kirby 1954; Houle 2011; Houle and Martin 2011; Kessin 1971; Lipset and Bendix 1964; Mirowsky and Ross 2003; Sorokin 1959; Turner 1968), as hypothesized by a mostly qualitative literature on mobility effects.[4] Drawing on Bourdieu, Friedman (2016) describes the socially mobile ensnared by "double isolation" from both their origin and destination class.[5] Friedman (2014, 2016), along with Musgrove (1963), Stacey (1967), and Sennett and Cobb (1972), find that social mobility has negative consequences for kinship ties, intimate relationships, and self-concept, leading to social isolation and increased rates of psychological distress. Alongside an increased sense of security and well-being stemming from an increased access to resources, educational mobility, for example, may also be

[3] Many of these study relied on Duncan's square additive model (1965, 1966, 1979) which does not allow for the effect of mobility to be disentangled from an individual's destination class, and many of these studies also lacked control variables.

[4] Originally coined by Sorokin (1959), the "mobility effects" literature proposes a dissociative hypothesis whereby intergenerational mobility has detrimental effects on the social relationships and well-being of individuals experiencing a change in SES (Joslyn 1927; Sorokin 1959).

[5] (Friedman 2016:132)

associated with distancing oneself from one's community of origin alongside accompanied feelings of guilt and shame (Granfield 1991; Lubrano 2004; Miller and Kastberg 1995; Ostrove and Cole 2003; Reay, Crozier, and Clayton 2009, 2010; Ryan and Sackrey 1984). This body of work is consistent with what might be proposed by status inconsistency theory (Lenski 1954), in which those from low SES backgrounds don't feel they fit their new high SES contexts, leading to stress and negative health outcomes (Geronimus et al. 2001; Geronimus 2013; McEwen and Seeman 1999; Merton 1964; Rutter 2012; Sapolsky 1998, 2005; Schoon 2006). Other recent literature has also found some effects of social mobility on mental health outcomes (Chan 2017; Houle 2011; Houle and Martin 2011; Jonsson et al. 2017), although Chan (2017) notes that much of the recent support of the dissociative thesis comes from qualitative interviews or autobiographical writings.

Yet almost none of this scholarship—qualitative or quantitative—considers effect heterogeneity.[6] To date, no extant scholarship has considered that the length of the mobility "path" may have differential effects on the psychological well-being of upwardly mobile individuals, which is the focus of this paper. The majority of existing studies have focused solely on men, and men and women report psychological distress at different frequencies

[6] There are multiple plausible sources of nonlinearity in psychological distress outcomes. Measuring psychological distress is in itself complicated: the interpretation of questions about distress levels are subjective; and, importantly, some people will never report distress regardless of their experience (Kubzansky, Winning, and Kawachi 2014; Shedler, Mayman, and Manis 1993). Among people who look healthy on standard mental health scales, it *is* possible to identify a subgroup of people who may not be psychologically healthy. But, in addition to this reporting issue, people experience stress differently and therefore react differently to the same stimuli (Assari and Lankarani 2016). Further, the effects of emotion in an individual who has already been exposed to chronic stress may be quite different from effects in initially healthy system (Kubzansky et al. 2014), although social support may nevertheless play a crucial role in the extent to which chronic stress has detrimental effects (Pearlin 1989). I attempt to address these measurement issues in my model choice. Second, SES can be dynamic, such as when the government expands educational opportunity for an entire cohort. Still, there are other factors that cannot be addressed in this paper: all correlations between SES and health are not necessarily causal – confounding and reverse causation may play a role with some factors. Further, literature beyond the scope of this review indicates that some individuals experience intense stress experience post traumatic growth (Manove 2014), while others experience dysregulation of their hypopituitary adrenal axes (for example, see Glaser and Kiecolt-Glaser 2005; Godbout and Glaser 2006; McLaughlin et al. 2010), yielding wildly different patterns in health outcomes.

(Weissman and Klerman 1977), suggesting problems of generalizability in previous work. This paper addresses these issues and provides a comprehensive assessment of the psychological costs of upward intergenerational mobility, contributing to the broader literature on socioeconomic status and health outcomes.

The results of this study extend the current literature of social mobility by examining the heterogeneous effects of education, occupation, and income mobility among men and women. This analysis indicates that the form social mobility takes, as represented in this analysis by the length of the mobility pathway, has varied effects on how mobile individuals experience psychological distress. That men and women experience different baseline levels of psychological distress is consistent with existing literature on psychological distress (Pudrovska and Karraker 2014). Two findings of this study are inconsistent with the mobility literature and invite further study: First, while upward social mobility is, on average, beneficial to upwardly mobile individuals, examining extreme social mobility pathways indicates that individuals who experience upward mobility may experience greater levels of psychological distress at midlife. Second, the cost of social mobility on psychological distress levels is more pronounced for women than men. This study provides confirmatory evidence of the import of the type of mobility used to study health outcomes and points to an area for further study: namely, the contrast in effect of income mobility on men and women.

## *DATA & ANALYTIC STRATEGY*

*Data:* Analysis of mobility effects requires rich longitudinal data on SES across multiple generations. One of the few studies with such data is the Wisconsin Longitudinal Study (WLS), a long-term study of a random sample of 10,317 men and women who graduated from Wisconsin high schools in 1957 (Hauser, Sewell, and Herd n.d.; Herd, Carr, and Roan 2014). The WLS

sample is broadly representative of white, non-Hispanic American men and women who have completed at least a high school education (Wisconsin Longitudinal Study Description n.d.).[7] I use survey data collected from the original respondents or their parents in 1957 (age 18), 1975 (age 36), and 1992 (age 53). I analyze men and women separately, because men and women differ in morbidity rates (e.g., House et al. 1994; Pudrovska et al. 2014; Pudrovska and Karraker 2014; Rieker and Bird 2005; Short, Yang, and Jenkins 2013), as well as how they respond to questions regarding psychological and physical conditions (Assari and Lankarani 2016; House et al. 1994; Pudrovska and Karraker 2014; Read and Gorman 2010; Turner and Avison 2003). After accounting for missingness on the dependent variable and accounting for list-wise deletion of key demographic variables, I use an analytic sample 3845 observations.

## VARIABLE OPERATIONALIZATION

*Psychological Distress:* Psychological distress is measured in 1992, when the respondent is approximately 53 years old, using the WLS-modified Center for Epidemiologic Studies Depression (CES-D) scale (Radloff 1977), $\alpha = .88$, range = 0-110. The CES-D is widely used as a general measure of psychological distress. The mean score for respondents is approximately 15, with the modal response being zero. The distribution of the variable and a summary of the cumulative density for each population of interest is included in the Appendix.

### *Measuring Mobility: Alternative Measures of Socioeconomic Standing*

Recent developments in mobility research show that measures such as class, occupational status, individual earnings and total family income capture distinct dimensions of well-being and suggest that mobility findings may be contingent on the measure used (Beller and Hout 2006;

[7] While the racial and geographic homogeneity of the data is a limitation for some hypotheses, these data allow for a cleaner exploration of effect heterogeneity. This cohort experienced substantial upward mobility, particularly through higher education (Goldin and Katz 2008), making this dataset ideal for the study of variation in the effect of upward mobility.

Erikson and Goldthorpe 2008; Torche 2011). I operationalize education, occupation, and income mobility in the following ways:

*Education:* Educational mobility is measured as a move between degrees between parent and respondent. I use respondent's highest level of education as measured by degree obtained. For parents, I take the highest level of education obtained by either parent (mother or father) measured by degree obtained. Degree levels include: some high school or less, high school diploma or equivalent, some college (including 2-year programs), 4-year college graduate, post-college degree (Masters, PhD, JD, etc.). I choose this categorization based on the more limited information provided about parent educational attainment, while also aligning with qualitatively meaningful cut points associated with socioeconomic benefits and resources (e.g., bachelor's degree or high school diploma).

For the independent effect of education, I chose to model continuous forms of education (years of schooling obtained), but I also examined the effects using categorical versions of education based on the classification schema above. The mediating effects of these continuous variables for depressive symptoms were similar to those of their categorical counterparts, but in general the continuous versions tended to be more conservative estimates.

*Occupation*: Occupational mobility is measured as a move between classes between 1957 and 1992. Occupation in 1975 and 1992 were categorized by the WLS into 1970 Major Census Occupational Groups. Unfortunately, there are no census codes for parent occupation in 1957. Instead there are 2 items, one with 5 general categories and another with 8. I combine these to recreate the Erikson–Goldthorpe–Portocarero (EGP) class schema below, but the categorization is far less precise for parents than it is for respondents (Erikson and Goldthorpe 1992:Appendix, Table 2; Erikson, Goldthorpe, and Portocarero 1979). The EGP schema differentiates positions

in society in terms of employment relations, which involve how the work fits into systems of authority and control, economic security and prospects for advancement. As such, moves between categories represent a major shift in occupations between time periods. To create prior and current classes, I followed Houle (2011) and use a collapsed, six-class version of the EGP class schema. The six classes are Service (labeled as class I), Routine Non-manual (II), Petty Bourgeoisie (III), Farm (IV), Skilled Manual (V), and Unskilled Manual (VI).

I use respondent occupation in 1992 (as opposed to 1975) to measure occupational status for two primary reasons: first, psychological distress, was also measured in the 1992 survey, ensuring that the outcomes are measuring psychological characteristics after mobility had occurred. Second, respondents were roughly 53 years old in 1992, which more closely matches the age of respondents' parents when their occupation was recorded (mean age = approximately 49).[8]

*Income:* Income mobility is measured using the change in total family income between 1957 and 1992 (I choose 1992 for similar reasons as noted above).[9] While an individual earnings measure includes all income from wages, tips, and salary, which captures earnings inequality within occupational categories, it does not include extra-occupational resources, such as financial assets or inheritance.[10] Therefore, using total family income accounts for earnings

[8] For those concerned with the retirement age of respondents, only 7 percent of men and women in the WLS sample had retired by age 52-53 (Hauser et al. 1994), making the occupational measure in 1992 generally representative of peak occupational attainment.
[9] I also repeat these analyses using individual earnings with similar results.
[10] The WLS data does not include a measure of the financial assets of respondents' parents in 1957, though I include a measure of perceived socioeconomic status, as well as measures of respondent net worth (including spousal net worth) and home equity at the time of the psychological distress measure to account for the influence of extra-occupational resources on psychological well-being. Including these covariates do not alter the results. I do not show the results here for parsimony. The results are available upon request.

outside those outside of the labor market. Extra-occupational resources confer advantage or disadvantage intergenerationally (Katznelson 2005; Oliver 2006) and have been demonstrated to impact the extremes of the economic distribution, such as those who are not attached to the labor market (Grusky and Weeden 2008) and those whose income depends on returns to capital (Piketty and Goldhammer 2014).

Income for respondents' parents is an average over the number of years of data available in the WLS reported to reduce error associated with yearly fluctuations in earnings. Parent income is drawn from the male head of household (and from the female when data for the male is unavailable). First, I recode parent and respondent income and family income into quintiles per the CPS Consumer Income Series P-60 report for each year (1957, 1975, 1992) income is measured (U.S. Department of Commerce 1958, U.S. Department of Commerce 1977, U.S. Department of Commerce 1992). Mobility is measured as a move between income quintiles between time periods, indicating a major shift in monetary resources between time periods.[11]

*Covariates:* I include control variables prior to and concurrent with mobility that are correlated with both mobility and psychological distress. Control variables measured prior to mobility include: depression history, marital status, cognitive ability (human capital). Depression is measured in accordance with Houle (2011), as a dummy variable equal to 1 if the respondent experienced a bout of depression lasting two weeks or more before 1975. Marital status is a dummy variable equal to 1 if the respondent was married at the 1975 survey. High

[11] In additional analyses not shown here, I adjust income across years (1957, 1975, 1992) to 1992 dollars using data from the Bureau of Labor Statistics to adjust for inflation. Income mobility is measured by the direction of the shift in resources between time periods. Findings are similar to those shown here.

school cognitive ability is measured using the Henmon–Nelson test scores when they were in their junior year in high school, which the WLS mapped onto IQ scores.

Based on gaps in the literature described above, I also include other factors occurring simultaneously with mobility that are likely correlated with either mobility or mental health: physical health conditions (a count variable measuring 22 potential health complaints), recent stressful life events, such as the death of a spouse, divorce or separation from a spouse, and the death of a child (all dummy variables coded 1 if an event occurred within 5 years of the measure of psychological distress). To account for effects of health-related downward mobility (Fox, 1990) or the potential for job loss due to health reasons, I include a dummy variable equal to 1 if a respondent left his job due to a health condition from 1975 to 1992 or if he had a health condition (including cognitive or psychological) that limited his ability to work. To further account for the effects of occupational instability (Brand 2015; Burgard, Brand, and House 2007; Dooley, Fielding, and Levi 1996; Hamilton et al. 1990; McKee-Ryan et al. 2005; Miller and Hoppe 1994; Newman 1988; Paul and Moser 2009; Turner 1995; Warr and Jackson 1985), I control for the total number of job spells each respondent has had, as well as for the effects of unemployment. Number of jobs is a count variable. Unemployment is a dummy variable coded 1 for having been unemployed. I also include dummy variables, similarly coded, for whether the respondent has experienced incarceration (Berkman, Kawachi, and Glymour 2014; Massoglia and Pridemore 2015; Schnittker 2014; Schnittker, Massoglia, and Uggen 2012; Turney 2014) and has been active duty military. Additional interpersonal factors are known to reduce psychological distress, in particular: whether one feels she has adequate social support (Avitsur et al. 2003; Berkman 2001; Cacioppo and Cacioppo 2014; Marmot 2004; Schnittker and McLeod 2005); feels one has a sense of purpose in life (Lin and Ensel 1984); and, the degree to which one

accepts oneself. I include participant responses, measured in 1992, to a scale for each of these items (range = 0-42).

*Analytic Strategy:* This analysis includes two sets of models: the first tests the association between origin and destination class on psychological distress; and, the second explores the heterogeneity in the form of upward mobility on psychological distress, accounting for potential individual factors leading to elevated levels of psychological distress among respondents.

The first test of association comes from the mobility literature. I use Sobel's (1981, 1985) Diagonal Mobility Model (Breen 2001; Houle 2011) to model the effect of intergenerational mobility on psychological distress (using the CES-D measure). I include an indicator for upward mobility, which enables us to treat social mobility as an independent variable that occurs as a process. The effect of mobility is estimated as the independent effect of change in class status after accounting for the relative importance in origin class in 1957 and destination class status in 1992. The non-mobile are the reference population, with the upwardly mobile modeled to determine how they resemble their origin and destination class statuses. A major advantage of Diagonal mobility models are the item weights ($\omega$), which serve as estimates of the degree of acculturation—or how much an individual resembles those in their destination, rather than origin status. By default, anyone who is unemployed, in school, or otherwise missing from the data in 1957 or 1992 is excluded from the model. All models were implemented in R, specifying a diagonal reference term in the model formula of the general nonlinear model (gnm) package (Turner and Firth 2015). The equations for the Diagonal Mobility Model can be represented by the following set of equations, where

$$Y_{ij} = \omega_1\mu_i + \omega_2\mu_j + \beta_1 Upward + \gamma X + e_{ij}$$

$$\omega_1 + \omega_2 = 1$$

$Y$ is the measure of psychological distress. $\mu_i$ is the is the mean outcome for the non-mobile and downwardly mobile members of social class $i$ in 1957. $\mu_j$ is the mean outcome for the non-mobile and downwardly mobile members of social class $j$ in 1992. The two $\omega$ parameters represent weights, which are constrained to sum to 1. A high value of an origin weight $\omega_1$ would indicate those who are mobile represent the non-mobile and downwardly mobile in their origin class with regard to the outcome variable (here, psychological distress), whereas a high value of the destination weight $\omega_2$ would indicate those who are mobile most represent the non-mobile in their destination class in levels of the outcome variable. A value of .5 for each weight would indicate those who are mobile represent the non-mobile in both their origin and destination class equally. $Upward$ is a mobility indicator capturing individuals who experienced intergenerational upward mobility, as measured between parent status and respondent status in 1992; this captures the effect of upward social mobility on the outcome of interest. $X$ is the vector of covariates. I model this using a Poisson distribution with a log link function. For men and women, I show two models for education mobility, two for occupation mobility, and two for income mobility (Table 1). The first of the two models tests the association between origin and destination classes of individuals who experience *any* form of upward social mobility, while the second set of models tests the association between origin and destination classes of individuals who experience what I call *extreme* upward mobility (moving from less than a high school education to a college degree or above; moving from EGP class 6 to EGP class 1; moving from the bottom income quintile to the top income quintile).

In the second set of models, I explore the effect heterogeneity of social mobility on psychological distress at the individual level using a Zero-Inflated Poisson Model (Lambert 1992; Lambert and Roeder 1995) to account for the high zero count and the over-dispersion of

the dependent variable, which I fit using the 'pscl' package in R (Jackman 2015).[12] This model is commonly used for count data with high zero counts (Fox 2008).

The distribution of the CES-D measure, has a very large number of '0' responses. One way to model this type of situation is to assume that these data come from a mixture of two populations, one where the count is always zero, and another where the count takes on a positive integer value. This might reasonably be the case if some individuals are unlikely to ever report psychological symptoms on a survey (Kubzansky, Winning, and Kawachi 2014; Shedler, Mayman, and Manis 1993), may never experience psychological symptoms, or may at some point respond to the survey affirmatively but have not experienced psychological distress within a timeframe proximate enough to the survey to be relevant in their responses.[13] In this model zero counts can come from either population, while positive counts come only from the second one. I represent the probability of drawing a zero using the Bernoulli distribution, and the probability of drawing a non-zero value using the Poisson distribution with mean $(1 - p_i)\lambda$ and variance $\lambda(1 - p_i)(1 + \lambda p_i)$. The probability of obtaining a zero vs non-zero value are noted below.

$$Prob(y_i = 0) = p_i + (1 - p_i)e^{-\lambda}$$

$$Prob(y_i = h_k) = (1 - p_i)\frac{\lambda^{h_k} e^{-\lambda}}{h_k!}, h_k \geq 1$$

[12] I also repeat these analyses using a Zero-Inflated Negative Binomial Model to address the overdispersion of the non-zero values of the dependent variable with similar results to those presented above (Greene 1994). A comparison of model fit—in accurately predicting the expected distress values—suggests the Zero-Inflated Poisson Model does a modestly better job. As a result, I present the results using a Zero-Inflated Poisson Model.

[13] Additionally, given individual variation in the experience of distress (Assari and Lankarani 2016) along with a tendency among people to want to represent themselves positively (Shedler et al. 1993), scholars have documented that there is a subpopulation that underreport their level of experienced distress (Kubzansky et al. 2014).

$\lambda_i$ represents the expected Poisson count for the $i^{\text{th}}$ individual and $p_i$ represents the probability of extra zeros. The probability mass function for the Poisson distribution is represented $\frac{\lambda^{h_i} e^{-\lambda}}{h_i!}$. Thus, there are two equations for our regression model, the first modeling the probability that the outcome is zero, and the second modeling the Poisson distribution of the count variables, which I combine using MLE. The full regression equation for these models is therefore

$$I_{(\gamma,\beta,y)} = \sum_{y_i=0} \log\left(e^{G_i\gamma} + \exp\left(-e^{B_i\beta}\right)\right) + \sum_{y_i>0} (y_i\, B_i\beta - e^{B_i\beta}) - \sum_{i=1}^{n} \log(1 + e^{G_i\gamma}) - \sum_{y_i>0} \log(y_i\,!)$$

where $B_i$ and $G_i$ represent the $i^{\text{th}}$ rows of the $B$ and $G$ covariate matrices for the Poisson regression model and logistic regression model respectively.[14] I run separate models for men and women, and, as above, run separate models for education (Table 2), occupation (Table 3), and income (Table 4) mobility.[15]

***DISCUSSION & LIMITATIONS***

I briefly review the main takeaways of each set of analyses, discuss limitations and implications of the study, and suggest areas for further research.

The first set of analyses indicate that, for some types of mobility, origin status may play a larger role than previously argued in determining psychological outcomes later in life. When psychological distress is measured as an expectation based on the mean of all forms of upward

[14] A critical assumption of my choice in employing the zero-inflated model is that I am modeling two distinct populations: one that would never report psychological distress and another that would. As such, I assume that people in the zero-only model would never report psychological distress; therefore, it does not make sense to estimate the effect of mobility among this population. For robustness, I run models including covariates in the *G* covariate matrix, and I consistently find that estimating mobility in the zero-only model produces coefficient estimates that are not statistically different from zero across all models in this study. I leave out these covariates in the tables presented here for both parsimony and theoretical reasons. These additional analyses are available upon request.

[15] I combine these forms of social mobility in a final set of models to assess the association of each form of social class mobility while holding the other forms constant. Tables and discussion of results will be included in the Appendix of the full paper.

mobility, individuals are more likely to resemble individuals in their destination status than origin status, with regard to education, occupation, or income, as regards psychological distress; this finding is consistent with previous studies and indicates that proximate life factors contribute to individuals' psychological well-being. However, individuals experiencing extreme upward mobility tend to represent the psychological distress levels of those of their origin status moreso than their later life destination status, which one could argue indicates some prolonged effect of early life exposure to low social status on psychological well-being. Another plausible explanation, however, is that for individuals who experience extreme shifts in social standing, the changing social and cultural expectations of the new context may itself induce psychological distress (for example, see Aronson 2008; Ashford 1990; Avitsur et al. 2003; Berkman 2001; Cacioppo and Cacioppo 2014; Croizet et al. 2001; Granfield 1991; Reay et al. 2009, 2010; Ryan and Sackrey 1984; Schnittker and McLeod 2005). Among both men and women, individuals resemble their origin status with regard to psychological distress more than they do their destination status when they move between extremes, which—given that there exists a social gradient to health—indicates that these mobile individuals tend to be more distressed than other individuals in the new social class they occupy. This finding brings nuance to the extant literature. For income mobility, individuals who move from the bottom income quintile to the top are slightly weighted toward resembling the mean psychological distress levels of other adults who occupy the lowest income quintile in adulthood than toward the mean psychological distress levels of those who occupy the top income quintile. For education mobility, individuals who move from a parental education level of a high school education or less to a college degree or above are more likely to resemble, on average, those individuals whose adulthood educational attainment is a high school degree than those who attained at least a bachelor's degree. These

weights favor origin status to a greater extent among women than men; women who are socially mobile report higher mean levels of psychological distress. Among both men and women, individuals appear more likely to resemble other adults who occupy the same occupation class status position in adulthood than individuals who occupied the same occupation status position as their parents held during childhood. Whether this is a remnant of the changing opportunity structure that impacted this cohort or due to another factor is unclear and warrants further study.

The second set of models further elucidate gendered differences in the effects of education, occupation and income mobility, as well as the tendency that individuals who experience greater-than-average degrees of social mobility tend to report experiencing greater-than-expected levels of psychological distress. This study involves a relatively homogenous sample of white men and women from a single cohort from Wisconsin, two-thirds of whom remained in Wisconsin, yet the effect heterogeneity is quite pronounced. Addressing the gendered differences first, women are again more likely to report psychological distress than men. While it may be that women are more likely to experience psychological distress, it may also be that men are less likely to report psychological distress symptoms, both in the literature, and in this analysis. Social norms impart gendered expectations on men and women (Frable 1997; Haney 1996; Ridgeway and Smith-Lovin 1999), which vary with regard to what is considered successful, both by class but also in terms of income, education, occupation, marital arrangements, and so on.

Thus, it may be that extreme moves in social status increase rates of distress differently for women as compared to men—a change in social norms, societal expectations, and so on, may have a more dramatic impact on women than men. Women in this cohort are more sensitive to labor market shocks due to workplace disparities (Kalleberg 2008, 2009). While self-

employment may reduce distress for men, a finding corroborated with the literature on perceived workplace autonomy, which serves as a buffer to social stressors (Marmot et al. 1991; Sherman et al. 2012), women on average experience a modest increase in psychological distress in positions of self-employment.

Other covariates associated with psychological distress also reveal gendered differences, many of which may be a result of social expectations, and the different relationship men and women in this cohort have with the opportunity structure. For example, being married reduces psychological distress for women, while men experience greater levels of psychological distress with the death of a spouse or with separation than women. Further, having children buffers women but not men against distress in this sample. These differences reflect variations in traditional spousal roles among this cohort. Meanwhile, having a job, even more than one, buffers men against psychological distress; this effect does not exist for women.

Turning now to the impact of social mobility on psychological distress, how we measure mobility matters. As Torche (2011) has noted, the type of class measure used is more than simply a tool for statistical robustness—movements among education, occupation and economic classes can be experienced differently. Likewise, the form—or path—of mobility matters. On average, higher education attainment is associated with greater levels of reported psychological distress for both men and women. However, extreme educational mobility is associated with a lower level of reported psychological distress among men and with higher levels of reported psychological distress among women. Additional analysis discretizing education by level of degree attained finds similar effects. One explanation as to why this might be the case is the positive social norm around "pulling oneself up by one's bootstraps", where "one" had typically been synonymous with male. Women in this cohort are trailblazers, and the disparate findings

between men and women in this analysis might reflect psychological tension associated with changing social norms or a more durable gendered difference which should be further investigated. While the norm remained for women in this cohort to primarily be homemakers – which is also reflected in the occupations of the women in this study – many women in this cohort pursued career advancement and were both educationally and occupationally mobile relative to their mothers. The societal expectations that come along with being highly-educated in a domain where women typically were less-educated than their male counterparts could be one potential source of psychological strain. Further, while upward income mobility reduces distress for men, the experience of upward income mobility may increase psychological distress among women. Income is most proximately linked to being able to afford necessities as well as additional items conferring status in elite environments, and how financial security and social status operate may have opposite net effects on psychological distress levels. The main effect of income generally reduced the expected psychological distress levels among both men and women, but the net impact of income mobility increased expected psychological distress levels for women; thus, it may be worth investigating how increased income impacts the social lives and social circles of upwardly mobile women. We can think of income mobility as changing the social milieu of the individuals experiencing the mobility, while the current income as a stable measure of the effect of income on the lifestyle of the individual, for example.

*Strengths & Limitations:* This study is limited to white Wisconsin high school graduates who graduated high school in 1957. While the racial and geographic homogeneity of the data is a limitation for some hypotheses, sample homogeneity provides certain advantages. In particular, the homogeneity of the sample is a strength for ruling out unobserved variable bias as a source of causal relationships. As most multivariate statistical analyses are intended to reduce sample

heterogeneity, these data may allow for a cleaner exploration of effect heterogeneity.[16] Second, as very few members of this sample experienced any form of downward mobility, this cohort is ideal for examining heterogeneous effects of upward mobility. Further research is needed to better understand how these findings hold up across other, more representative data over historical time, and replication is necessary to better understand how the psychological experience of mobility may vary across cohorts.

Taken altogether, this research indicates that the effect of social mobility on psychological distress is not uniform and raises several additional questions. Early life experience may play a larger role than previously considered, making an extreme shift between social contexts more likely to induce psychological distress symptoms, especially among women. The unexpected increase in reported psychological distress among mobile individuals experiencing longer mobility pathways invites further study, particularly given the extent to which such findings are supported by recent studies on the effects of resilience and mobility on a host of measures of morbidity. Furthermore, previous studies failed to examine variation in the path of mobility. Most prior work focused on one form of mobility (e.g., occupational or educational) without identifying the effect of mobility itself as distinct from origin and destination status. Previous work has not explored the extent to which variation in the form of mobility measured by gender might also result in heterogeneous effects. Thus, the results of this study extend the current literature of social mobility by examining the heterogeneous effects of education, occupation, and income mobility among men and women, and indicates that the form social mobility takes, as represented in this analysis by the length of the mobility pathway, has varied effects on how mobile individuals experience psychological distress.

[16] Given the overall sample size (N=3,845), measurements of the "extreme" upwardly mobile will be less precise due to the relatively smaller sample size.

**TABLE 1: INTERGENERATIONAL SOCIAL CLASS, INCOME AND EDUCATION MOBILITY AND PSYCHOLOGICAL DISTRESS**

| **MEN** | EDUCATION | | | OCCUPATION / CLASS | | | INCOME | | |
|---|---|---|---|---|---|---|---|---|---|
| | ANY | UPWARD | EXTREME | ANY | UPWARD | EXTREME | ANY | UPWARD | EXTREME |
| *Origin and Destination Weights* | | | | | | | | | |
| Destination (Status in 1992) $\omega_1$ | .619*** | .899 | .106*** | .585*** | .753*** | 1.000*** | .585*** | .731*** | .451*** |
| | (.000) | (.429) | (.002) | (.002) | (.004) | (.000) | (.000) | (.002) | (.005) |
| Origin (Status in 1957) $\omega_2$ | .380*** | .101 | .894*** | .414*** | .247*** | .000*** | .415*** | .269*** | .549*** |
| | (.000) | (.429) | (.002) | (.002) | (.004) | (.000) | (.000) | (.002) | (.005) |
| *Mobility Variables* | | | | | | | | | |
| Any Mobility | -0.571*** | | | 1.607*** | | | 1.030*** | | |
| | (.013) | | | (.014) | | | (.011) | | |
| Any Upward Mobility | | -1.023*** | | | -1.569*** | | | -0.615*** | |
| | | (.011) | | | (.037) | | | (.014) | |
| "Extreme" Upward Mobility | | | 2.345*** | | | -2.177*** | | | 4.809*** |
| | | | (.018) | | | (.017) | | | (.000) |
| Log Likelihood | -57055 | -42489 | -52997 | -41920 | -29201 | -29713 | -55552 | -44715 | -53870 |
| Sample Size | 2604 | 2604 | 2604 | 2604 | 2604 | 2604 | 2604 | 2604 | 2604 |

| **WOMEN** | EDUCATION | | | OCCUPATION / CLASS | | | INCOME | | |
|---|---|---|---|---|---|---|---|---|---|
| | ANY | UPWARD | EXTREME | ANY | UPWARD | EXTREME | ANY | UPWARD | EXTREME |
| *Origin and Destination Weights* | | | | | | | | | |
| Destination (Status in 1992) $\omega_1$ | .405*** | .742 | .111 | .559*** | .936*** | .412*** | .406*** | .757*** | .346*** |
| | (.000) | (.158) | (.401) | (.003) | (.001) | (.003) | (.000) | (.004) | (.002) |
| Origin (Status in 1957) $\omega_2$ | .595*** | .258 | .889 | .441*** | .064*** | . 588*** | .594*** | .244*** | .654*** |
| | (.000) | (.158) | (.401) | (.003) | (.001) | (.003) | (.000) | (.004) | (.002) |
| *Mobility Variables* | | | | | | | | | |
| Any Mobility | -0.178*** | | | 2.302*** | | | 1.353*** | | |
| | (.013) | | | (.017) | | | (.013) | | |
| Any Upward Mobility | | -0.810*** | | | 2.925*** | | | -1.462*** | |
| | | (.011) | | | (.063) | | | (.013) | |
| "Extreme" Upward Mobility | | | 2.873*** | | | -2.587*** | | | 5.414*** |
| | | | (.022) | | | (.020) | | | (.077) |
| Log Likelihood | -55273 | -40758 | -49437 | -38487 | -27020 | -22558 | -53746 | -39782 | -48497 |
| Sample Size | 2185 | 2185 | 2185 | 2185 | 2185 | 2185 | 2185 | 2185 | 2185 |

NOTE. –Standard Errors in parentheses; Other covariates excluded from table for parsimony.
* P < .05.
** P < .01.
*** P < .001.

**TABLE 2: Intergenerational Education Mobility and Psychological Distress in 1992**

| | Psychological Distress | | | |
|---|---|---|---|---|
| | Men | | Women | |
| | 1 | 2 | 3 | 4 |
| Upward Education Mobility (Any) | .056*** | | .051*** | |
| | (.013) | | (.013) | |
| Upward Education Mobility from HS or less to College or above | | -.066** | | .115*** |
| | | (.021) | | (.027) |
| Highest Level of Education (1992) | .021*** | .025*** | -.003 | -.005 |
| | (.003) | (.003) | (.004) | (.004) |
| Perceived Risk of Losing Job | .014*** | .015*** | .008** | .007** |
| | (.002) | (.002) | (.002) | (.002) |
| Current Health Issues | .056*** | .056*** | .050*** | .051*** |
| | (.002) | (.002) | (.002) | (.002) |
| Divorced or Separated in last 5 years | .314*** | .319*** | .060 | .063 |
| | (.035) | (.035) | (.052) | (.052) |
| Spouse died in last 5 years | .620*** | .621*** | .330*** | .341*** |
| | (.065) | (.065) | (.033) | (.033) |
| History of Depression | .361*** | .358*** | .193*** | .194*** |
| | (.031) | (.031) | (.022) | (.022) |
| Child died in last 5 years | -.079 | -.076 | .444*** | .438*** |
| | (.063) | (.063) | (.057) | (.057) |
| Married | .061* | .063* | -.053* | -.059** |
| | (.030) | (.030) | (.021) | (.021) |
| Measure of Intelligence | -.004*** | -.004*** | -.007*** | -.007*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Relates positively with others | -.020*** | -.020*** | -.013*** | -.013*** |
| | (.001) | (.001) | (.001) | (.001) |
| Self-accepting | -.036*** | -.036*** | -.033*** | -.033*** |
| | (.001) | (.001) | (.001) | (.001) |
| Has sense of purpose in life | -.016*** | -.016*** | -.023*** | -.023*** |
| | (.001) | (.001) | (.001) | (.001) |
| Left job for health reasons | -.054 | -.054 | .040 | .040 |
| | (.042) | (.042) | (.028) | (.028) |
| Currently holds more than one job | -.056*** | -.055*** | .031 | .031 |
| | (.015) | (.015) | (.016) | (.016) |
| Number of children | .013** | .014*** | -.007 | -.008 |
| | (.004) | (.004) | (.004) | (.004) |

| | | | | |
|---|---|---|---|---|
| Was active duty military | .060*** | .059*** | -.013 | -.021 |
| | (.012) | (.012) | (.065) | (.065) |
| Experienced incarceration | .116*** | .106*** | .245*** | .259*** |
| | (.028) | (.028) | (.070) | (.070) |
| Ever experienced unemployment | .053 | .063 | .023 | .024 |
| | (.041) | (.041) | (.015) | (.015) |
| Number of jobs spells between 1975-1992 | .007* | .006* | .006 | .007 |
| | (.003) | (.003) | (.004) | (.004) |
| Constant | 4.745*** | 4.746*** | 5.541*** | 5.634*** |
| | (.065) | (.065) | (.068) | (.069) |
| **Zero Model Coefficients** | | | | |
| Relates positively with others | .090*** | .090*** | .050 | .050 |
| | (.027) | (.027) | (.038) | (.038) |
| Self-accepting | .105*** | .105*** | .024 | .024 |
| | (.031) | (.031) | (.034) | (.034) |
| Has sense of purpose in life | -.001 | -.001 | .107** | .107** |
| | (.029) | (.029) | (.041) | (.041) |
| Current Health Issues | -.377*** | -.377*** | -.349*** | -.349*** |
| | (.058) | (.058) | (.066) | (.066) |
| History of Depression | 1.210 | 1.209 | .309 | .309 |
| | (.654) | (.654) | (.500) | (.500) |
| Married | -.120 | -.120 | .128 | .128 |
| | (.424) | (.424) | (.488) | (.488) |
| Constant | -8.524*** | -8.524*** | -8.740*** | -8.738*** |
| | (1.108) | (1.109) | (1.550) | (1.550) |
| Observations | 2,185 | 2,185 | 1,660 | 1,660 |
| Log Likelihood | -10,697.25 | -10,701.35 | -8,826.67 | -8,825.43 |
| Pseudo R-squared | 0.2050 | 0.2047 | .3441 | .3441 |
| Predicted % of Zeroes | 5.994% | 5.994% | 4.578% | 4.578% |
| True % of Zeroes | 5.995% | 5.995% | 4.578% | 4.578% |
| *Notes:* | *P < .05 | | | |
| | **P < .01 | | | |
| | ***P < .001 | | | |

**TABLE 3: Intergenerational Occupation Mobility and Psychological Distress in 1992**

| | Psychological Distress | | | |
|---|---|---|---|---|
| | Men | | Women | |
| | 1 | 2 | 3 | 4 |
| Upward Occupation Mobility (Any) | -.059*** | | -0.000 | |
| | (.014) | | (.014) | |
| Upward Occupation Mobility from lowest to highest EGP class | | .069*** | | .066** |
| | | (.019) | | (.024) |
| Occupation in 1992 (Sales, non-manual) | -.035* | -.029 | .012 | .024 |
| | (.015) | (.016) | (.020) | (.020) |
| Occupation in 1992 (Self-employed Artisans) | -.142*** | -.137*** | .033* | .045** |
| | (.026) | (.026) | (.016) | (.017) |
| Occupation in 1992 (Farm) | -.045 | -.036 | -.003 | .005 |
| | (.024) | (.024) | (.058) | (.058) |
| Occupation in 1992 (Skilled Manual) | -.087*** | -.088*** | .002 | .016 |
| | (.018) | (.018) | (.020) | (.021) |
| Occupation in 1992 (Unskilled Manual) | -.021 | -.036 | .019 | .032 |
| | (.028) | (.027) | (.038) | (.038) |
| Perceived Risk of Losing Job | .013*** | .014*** | .007** | .007** |
| | (.002) | (.002) | (.002) | (.002) |
| Current Health Issues | .055*** | .055*** | .051*** | .051*** |
| | (.002) | (.002) | (.002) | (.002) |
| Divorced or Separated in last 5 years | .323*** | .330*** | .056 | .049 |
| | (.035) | (.035) | (.052) | (.052) |
| Spouse died in last 5 years | .655*** | .633*** | .332*** | .325*** |
| | (.065) | (.065) | (.033) | (.033) |
| History of Depression | .379*** | .383*** | .192*** | .193*** |
| | (.031) | (.031) | (.023) | (.023) |
| Child died in last 5 years | -.052 | -.054 | .432*** | .426*** |
| | (.064) | (.064) | (.057) | (.057) |
| Married | .080** | .075* | -.059** | -.060** |
| | (.030) | (.030) | (.021) | (.021) |
| Measure of Intelligence | -.003*** | -.003*** | -.007*** | -.007*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Relates positively with others | -.020*** | -.020*** | -.013*** | -.013*** |
| | (.001) | (.001) | (.001) | (.001) |
| Self-accepting | -.037*** | -.037*** | -.033*** | -.033*** |
| | (.001) | (.001) | (.001) | (.001) |

| | | | | |
|---|---|---|---|---|
| Has sense of purpose in life | -.015*** | -.015*** | -.023*** | -.023*** |
| | (.001) | (.001) | (.001) | (.001) |
| Left job for health reasons | -.055 | -.055 | .037 | .035 |
| | (.042) | (.042) | (.028) | (.028) |
| Currently holds more than one job | -.044** | -.047** | .033* | .034* |
| | (.015) | (.015) | (.016) | (.016) |
| Number of children | .010* | .010* | -.007 | -.007 |
| | (.004) | (.004) | (.004) | (.004) |
| Was active duty military | .049*** | .052*** | -.019 | -.012 |
| | (.012) | (.012) | (.065) | (.065) |
| Experienced incarceration | .094*** | .099*** | .258*** | .268*** |
| | (.028) | (.028) | (.072) | (.072) |
| Ever experienced unemployment | .060 | .057 | .023 | .024 |
| | (.041) | (.041) | (.015) | (.015) |
| Number of jobs spells between 1975-1992 | .009** | .008** | .007 | .007 |
| | (.003) | (.003) | (.004) | (.004) |
| Constant | 5.053*** | 5.020*** | 5.555*** | 5.533*** |
| | (.068) | (.068) | (.066) | (.066) |
| **Zero Model Coefficients** | | | | |
| Relates positively with others | .090*** | .090*** | .050 | .050 |
| | (.027) | (.027) | (.038) | (.038) |
| Self-accepting | .105*** | .105*** | .024 | .024 |
| | (.031) | (.031) | (.034) | (.034) |
| Has sense of purpose in life | -.001 | -.001 | .107** | .107** |
| | (.029) | (.029) | (.041) | (.041) |
| Current Health Issues | -.377*** | -.377*** | -.349*** | -.349*** |
| | (.058) | (.058) | (.066) | (.066) |
| History of Depression | 1.217 | 1.209 | .309 | .309 |
| | (.652) | (.654) | (.500) | (.500) |
| Married | -.120 | -.120 | .128 | .128 |
| | (.423) | (.423) | (.488) | (.488) |
| Constant | -8.523*** | -8.524*** | -8.739*** | -8.739*** |
| | (1.108) | (1.108) | (1.550) | (1.550) |
| Observations | 2,185 | 2,185 | 1,660 | 1,660 |

| | | | | |
|---|---|---|---|---|
| Log Likelihood | -10,706.09 | -10,708.58 | -8,831.25 | -8,827.61 |
| Pseudo R-squared | .2044 | .2042 | .3471 | .3440 |
| Predicted % of Zeroes | 5.994% | 5.994% | 4.578% | 4.578% |
| True % of Zeroes | 5.995% | 5.995% | 4.578% | 4.578% |
| *Notes:* | $^{*}P < .05$ | | | |
| | $^{**}P < .01$ | | | |
| | $^{***}P < .001$ | | | |

**TABLE 4: Intergenerational Income Mobility and Psychological Distress in 1992**

| | Psychological Distress | | | |
|---|---|---|---|---|
| | Men | | Women | |
| | 1 | 2 | 3 | 4 |
| Upward Income Mobility (Any) | -.035** | | .003 | |
| | (.013) | | (.017) | |
| Upward Income Mobility from Bottom to Top Quintile | | -.039 | | .324*** |
| | | (.036) | | (.080) |
| Current Income (Quintile) | .044*** | .038*** | -.028*** | -.033*** |
| | (.006) | (.006) | (.007) | (.006) |
| Perceived Risk of Losing Job | .014*** | .015*** | .007** | .007** |
| | (.002) | (.002) | (.002) | (.002) |
| Current Health Issues | .056*** | .056*** | .050*** | .050*** |
| | (.002) | (.002) | (.002) | (.002) |
| Divorced or Separated in last 5 years | .331*** | .329*** | .057 | .061 |
| | (.035) | (.035) | (.052) | (.052) |
| Spouse died in last 5 years | .609*** | .611*** | .342*** | .344*** |
| | (.065) | (.065) | (.033) | (.033) |
| History of Depression | .369*** | .367*** | .191*** | .189*** |
| | (.031) | (.031) | (.022) | (.022) |
| Child died in last 5 years | -.082 | -.082 | .440*** | .415*** |
| | (.063) | (.063) | (.057) | (.057) |
| Married | .075* | .072* | -.060** | -.062** |
| | (.030) | (.030) | (.021) | (.021) |
| Measure of Intelligence | -.003*** | -.003*** | -.007*** | -.006*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Relates positively with others | -.020*** | -.020*** | -.014*** | -.014*** |
| | (.001) | (.001) | (.001) | (.001) |
| Self-accepting | -.037*** | -.037*** | -.033*** | -.033*** |
| | (.001) | (.001) | (.001) | (.001) |
| Has sense of purpose in life | -.016*** | -.016*** | -.022*** | -.022*** |
| | (.001) | (.001) | (.001) | (.001) |
| Left job for health reasons | -.051 | -.051 | .027 | .027 |
| | (.042) | (.042) | (.028) | (.028) |
| Currently holds more than one job | -.043** | -.045** | .028 | .024 |
| | (.015) | (.015) | (.016) | (.016) |
| Number of children | .009* | .009* | -.009* | -.010* |
| | (.004) | (.004) | (.004) | (.004) |

| | | | | |
|---|---|---|---|---|
| Was active duty military | .045*** | .045*** | -.017 | -.014 |
| | (.012) | (.012) | (.065) | (.065) |
| Experienced incarceration | .107*** | .105*** | .252*** | .254*** |
| | (.028) | (.028) | (.070) | (.070) |
| Ever experienced unemployment | .068 | .064 | .016 | .016 |
| | (.041) | (.041) | (.015) | (.015) |
| Number of jobs spells between 1975-1992 | .011*** | .011*** | .006 | .006 |
| | (.003) | (.003) | (.004) | (.004) |
| Constant | 4.857*** | 4.861*** | 5.598*** | 5.602*** |
| | (.064) | (.064) | (.060) | (.060) |
| **Zero Model Coefficients** | | | | |
| Relates positively with others | .090*** | .090*** | .050 | .050 |
| | (.027) | (.027) | (.038) | (.038) |
| Self-accepting | .105*** | .105*** | .024 | .024 |
| | (.031) | (.031) | (.034) | (.034) |
| Has sense of purpose in life | -.001 | -.001 | .107** | .107** |
| | (.029) | (.029) | (.041) | (.041) |
| Current Health Issues | -.377*** | -.377*** | -.349*** | -.349*** |
| | (.058) | (.058) | (.066) | (.066) |
| History of Depression | 1.209 | 1.209 | .309 | .309 |
| | (.654) | (.654) | (.500) | (.500) |
| Married | -.121 | -.121 | .128 | .128 |
| | (.423) | (.423) | (.488) | (.488) |
| Constant | -8.524*** | -8.524*** | -8.740*** | -8.740*** |
| | (1.108) | (1.108) | (1.550) | (1.550) |
| Observations | 2,185 | 2,185 | 1,660 | 1,660 |
| Log Likelihood | -10,718.07 | -10,721.16 | -8,824.32 | -8,816.87 |
| Pseudo R-squared | .2044 | .2042 | .3437 | .3440 |
| Predicted % of Zeroes | 5.994% | 5.994% | 4.578% | 4.579% |
| True % of Zeroes | 5.995% | 5.995% | 4.578% | 4.578% |
| *Notes:* | *P < .05 | | | |
| | **P < .01 | | | |
| | ***P < .001 | | | |

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