

Economic Insecurity, Political Inequality, and the Well-Being of American Families

by

Jarron Bowman

Department of Sociology  
Duke University

Date: \_\_\_\_\_

Approved:

\_\_\_\_\_  
Angel L. Harris, Advisor

\_\_\_\_\_  
Scott M. Lynch

\_\_\_\_\_  
Nicholas W. Carnes

\_\_\_\_\_  
Eduardo Bonilla-Silva

Dissertation submitted in partial fulfillment of  
the requirements for the degree of Doctor  
of Philosophy in the Department of  
Sociology in the Graduate School  
of Duke University

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ABSTRACT

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## **Abstract**

This dissertation explores the interrelated dynamics of economic and political inequality, economic insecurity, and psychological well-being through three connected empirical studies. The first study adjudicates between conflicting findings in the unequal policy responsiveness literature. Many studies of the relative influence of income groups on U.S. policy have focused on issues over which affluent and average Americans disagree. However, scholars have posited different ways of both defining policy disagreement and measuring policy responsiveness. I assess the impact of 22 definitions of policy disagreement and two methods of measuring policy influence—based on win rates and policy change rates—on analyses of unequal responsiveness. The results of this analysis consistently indicate that U.S. policymaking institutions respond to the preferences of the affluent, but not those of average Americans. The second study examines gendered effects of unemployment on the subjective well-being of different-sex U.S. couples using recent data from the Panel Study of Income Dynamics (PSID). I eliminate the confounding influence of time-invariant person-specific characteristics that could impact both unemployment transitions and well-being through fixed effects analysis. While husbands' unemployment is negatively associated with wives' well-being, I find no evidence that wives' unemployment spills over to impact husbands' cognitive or affective well-being. The final study looks at the relationship between income change and psychological health and investigates possible asymmetry in this relationship. Analyzing data from the PSID with a combination of first-difference estimation and spline regression, I find support for the hypothesis that income losses have a larger impact than income gains on subjective well-being among partnered

adults. The relationships between income changes and well-being are insignificant for single adults. Together, these studies offer new insights into the ways economic power and vulnerability shape the subjective and material realities of life for individuals and families in the United States.

## **Dedication**

This dissertation is dedicated to baby Khalil Yizhaq Bowman Choudhury. May you forever crawl towards truth and justice.

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# 1. Introduction

In contemporary U.S. society, economic and political inequality are mutually-reinforcing, psychological health is tightly bound to economic well-being, and families frequently experience economic insecurity. This dissertation examines these interrelated dynamics through three connected empirical studies. It uses a range of quantitative methodologies and leverages insights from multiple social science disciplines.

Chapter 2 evaluates whether the policy preferences of high-income Americans override those of middle-income Americans. Many studies of the relative influence of income groups on U.S. policy have focused on issues over which affluent and average Americans disagree. However, scholars have posited different ways of both defining policy disagreement and measuring relative policy influence, which has yielded conflicting findings. To adjudicate between these contradictory findings, I assess the impact of 22 definitions of policy disagreement and two methods of measuring policy influence—based on win rates and policy change rates—on analyses of unequal responsiveness. Using Gilens’s dataset of nearly 2,000 survey questions about proposed federal policy changes combined with information on policy outcomes, I find that win rates are an unreliable measure of influence and argue that comparing policy change rates across cases of agreement and disagreement offers a more valid measure of each group’s relative policy influence. My results support previous findings that the affluent have substantial influence over policymaking while average Americans have little to no influence.

Chapter 3 examines gendered effects of unemployment on the subjective well-being of different-sex U.S. couples, with a focus on how the effects of unemployment may “spill

over” from unemployed individuals to their partners. Research on such spillover effects that uses nationally representative data from the U.S. is scant, and studies of other countries and localized areas of the U.S. provide mixed evidence for variation of effects by gender. This chapter investigates gendered effects of unemployment on the subjective well-being (SWB) of different-sex U.S. couples using data from the 2001 to 2017 waves of the Panel Study of Income Dynamics (PSID). I eliminate the confounding influence of time-invariant person-specific characteristics that could impact both unemployment transitions and well-being through fixed effects analysis. I also control for household financial characteristics in order to estimate non-pecuniary effects of unemployment. While husbands’ unemployment is negatively associated with wives’ well-being, I find no evidence that wives’ unemployment spills over to impact husbands’ cognitive or affective well-being. Furthermore, own unemployment has a larger SWB effect on men than women. These results generally hold even when the wife is the primary earner, and regardless of whether she is employed. This provides evidence that the SWB effects of unemployment among U.S. couples are significantly shaped by the degree of conformity with or deviation from the male breadwinner archetype.

Chapter 4 assesses whether people who experience income change experience changes in psychological well-being. Again using data from the 2001-2017 waves of the PSID, I take a first-difference modeling approach to assess within-person changes from one survey wave to the next. Research has generally treated the effects of income gains and losses on SWB as symmetric, such that gains benefit well-being to the same extent that losses harm it. Drawing from the theory of loss aversion, I investigate possible asymmetry in this relationship. I employ spline regression to separately estimate the impacts of

positive and negative changes in income in the same model. My results support the asymmetry hypothesis—income losses are more strongly related to changes in SWB than income gains are. In fact, the association between income gains and SWB changes is not statistically significant while the coefficients for income losses on affective and cognitive well-being remain significant after controlling for potential confounders. Income loss seems to impact cognitive well-being more than affective well-being. However, these findings are limited to partnered adults—income change is not significantly associated with changes in well-being in the full sample after controlling for other factors.

Integrating developments in sociology, political science, economics, and psychology, and using a variety of quantitative methodologies, these studies engage enduring questions on disparities of money, power, and health. This disciplinarily and methodologically diverse approach offers novel insights into the ways economic power and vulnerability shape the subjective and material realities of life for individuals and families in the United States.

## 2. Do the Affluent Override Average Americans? Measuring Policy Disagreement and Unequal Influence

A growing body of evidence suggests that the affluent wield disproportionate influence over political institutions in the United States (U.S.). This research implies that American<sup>1</sup> democracy falls far short of ensuring equality of political representation for all.

Despite this evidence, some scholars remain unconvinced. Soroka and Wlezien (2008), for example, argue that the policy preferences of the affluent are too closely aligned with those of average Americans for them to exert disproportionate influence. Other scholars of government responsiveness have also found the policy preferences of different income groups to be closely correlated (Enns 2015b; Ura and Ellis 2008). This presents a methodological challenge for assessing the relative policy influence of income groups because there is little distinguishing group preferences in the first place. However, income groups do have markedly different preferences regarding some important issues, including many redistributive policies (Enns and Wlezien 2011; Flavin 2012; Gilens 2015; Wlezien and Soroka 2011).

One approach scholars have used to evaluate income groups' relative policy influence is to identify and analyze cases where income groups disagree. But what kind of differences in preferences constitute policy disagreement? What criteria should be used to define disagreement? Scholars have provided different answers to these questions, and their resulting analyses have produced conflicting findings.

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<sup>1</sup> For brevity's sake, and considering their popular usage, I use the terms "America" and "Americans" to refer to the United States of America and U.S. residents, although I recognize the way these hegemonic, U.S.-centric terms can serve to reinforce the marginalization and erasure other nations and peoples in the Americas.



In addition to varying definitions of policy disagreement, another important conceptual difference that explains conflicting findings in the political responsiveness literature is variation in definitions of policy influence. Prior research has frequently used two approaches to measuring influence: policy change rates or win rates. Policy change rates measure the association between group preferences and the proportion of policies that change while win rates measure congruence between group preferences and policy outcomes, including instances where policy remains unchanged. Results using these methods are often contradictory; analyses of policy change rates generally support the theory of unequal democracy while analyses of win rates have arrived at different conclusions based on how disagreement is defined.

In this study, I seek to adjudicate between prior studies' conflicting findings by investigating how different definitions of disagreement between income groups, and different measures of influence, affect analyses of unequal responsiveness. Using the data from Gilens and Page's analysis (2014), I examine policy outcomes based on patterns of support and opposition between income groups using 22 definitions of policy disagreement. To vary the definitions of policy disagreement, I use combinations of *preference thresholds* and *preference gaps*. Preference thresholds indicate disagreement if one income group is above and the other below a chosen level of support for a policy. Preference gaps refer to the difference between groups' preferences and indicate disagreement when this difference is greater than (or equal to) a chosen gap. Preference thresholds represent an absolute measure of disagreement whereas preference gaps are a relative measure. The use of many definitions offers a robust way of assessing unequal responsiveness, helps contextualize previous findings, and allows for a comparison of the accuracy and reliability of policy

change rates and win rates as measures of influence. Notably, the purpose of using a variety of definitions of policy disagreement is *not* to determine which definition is best. There are reasonable theoretical arguments for and against any one definition.

I first apply these 22 definitions of disagreement to policy change rates. Where many existing analyses focus exclusively on cases of disagreement, I estimate relative influence based on four patterns of policy preference in which policy change is preferred by 1) neither group, 2) both groups, 3) only the middle, or 4) only the affluent. Prior studies only compare patterns 3 and 4. Identifying policy change rates in instances of *agreement* (patterns 1 and 2) offers baselines by which to compare the impact of one group's support or opposition (patterns 3 and 4). This allows for a more accurate evaluation of the independent influence of each group because it allows researchers to isolate the relationship between policy change rates and the support or opposition of a group while in effect holding the other group's preferences constant. I then apply the 22 definitions of disagreement to win rates to assess whether they are distorted by status quo bias.

Using a variety of definitions of disagreement reveals a distinct pattern: I find that win rates are highly inconsistent across definitions and that this inconsistency is largely attributable to the distorting influence of status quo bias. "Wins" where the status quo is maintained may reflect structural barriers to policymaking rather than group influence. Whichever group tends to prefer the status quo has a higher win rate than if they had a general preference for policy change. This generates contradictory findings depending on how disagreement is defined—in some cases it appears that the affluent win more and in others it appears that the middle do.

In contrast, results based on policy change rates are not distorted by status quo bias and are robust to varied definitions of disagreement. They support Gilens and Page's (2014) arguments that the affluent have substantial independent influence over policy and average Americans have little or no independent influence.

## ***2.1 The Unequal Responsiveness Debate***

The notion that government should be responsive to the preferences of the public in a democracy has driven two waves of quantitative research on the responsiveness of the U.S. government. The first began in the 1960s and investigated the relationship between policy and the aggregate preferences of Americans. A consensus emerged that, overall, the U.S. government is indeed responsive to the will of the public (Achen 1978; Bartels 1991; Erikson, Mackuen, and Stimson 2002; Miller and Stokes 1963; Page and Shapiro 1983).

It was only in the past quarter century or so that researchers began disaggregating public preferences to examine whether government responsiveness is roughly equal across social groups.<sup>2</sup> Where the initial wave of research presented a largely optimistic picture of U.S. democracy, this newer wave has painted a more complex and less rosy picture. There is growing evidence that U.S. government responsiveness is not equal across income groups. In a groundbreaking study, Larry Bartels (2002, 2008) uses survey data on the ideological preferences of different income groups in each state—drawn from the American National Election Studies' (ANES) Senate Election Study—to predict senators' roll-call votes. He finds that senators respond much more to the preferences of the affluent than to lower-income constituents, even after controlling for party affiliation. Bhatti and Erikson (2011) replicate

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<sup>2</sup> Although the focus of the present study is on income groups, other social dimensions by which political inequality has been studied include race (e.g., Schumaker & Getter, 1977) and party (e.g., Lax et al., 2019).

Bartels' findings with some methodological adjustments, although their analysis of additional data does not yield evidence of unequal representation. Other studies have found that federal representatives' voting behavior is more closely related to the ideological preferences of the affluent than to those of the less-affluent (e.g., Hayes 2013). Additional evidence of unequal democracy based on constituents' ideological preferences has been found in state legislatures (Flavin 2012b, 2014, 2015b, 2015a; Rigby and Wright 2011) and state party platforms (Rigby and Wright 2013).

Rather than focusing on citizens' broad ideological preferences, Martin Gilens focuses on their preferences regarding specific proposed policy changes. Using a unique dataset of close to 2,000 survey questions about national policy issues between 1981 and 2002, Gilens (Gilens 2005, 2012) finds that the aggregate preferences of high-income respondents are much more predictive of policy change than are the preferences of median-income respondents. Gilens and Page (2014) expand this dataset to test four different theories of U.S. governance. In order to test majoritarian democratic theory against theories of elite domination (and in line with Gilens's prior studies), Gilens and Page focus their analysis on the relative influence of middle- and high-income citizens.<sup>3</sup> The authors find that while affluent Americans wield substantial influence over policy, middle-income citizens enjoy little to no independent influence.

The unequal responsiveness finding has motivated additional research into potential economic, political, and policy factors that might explain variation in the extent of

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<sup>3</sup> Gilens and Page also test two theories of interest group pluralism. The first—"majoritarian pluralism"—maintains that competition between interest groups generates policy that tends to represent public opinion. The second contends that business interests tend to dominate.

unequal responsiveness across states, across time, across policy domains, and across party lines. This research has studied party control, state inequality and poverty levels, voter turnout, constituent and representative party affiliation, campaign finance laws, and ballot initiatives as potential sources of this variation (Flavin 2012a, 2012b, 2014, 2015b, 2015a; Lax, Phillips, and Zelizer 2019; Maks-Solomon and Rigby 2019; Rigby and Wright 2011, 2013).

The newer wave of research on *unequal* responsiveness has sparked debate about the nature and quality of U.S. democracy. Much criticism of the unequal responsiveness argument has focused on Martin Gilens's analyses, in part because they indicate that average citizens may have no influence on U.S. policymaking at all. Several scholars have challenged Gilens and Page's findings, arguing that there is insufficient evidence that the affluent "dominate" the middle (Bashir 2015; Branham, Soroka, and Wlezien 2017; Enns 2015b, 2015a; Ura and Ellis 2008).

Skepticism about the unequal responsiveness hypothesis and Gilens and Page's findings typically centers on the extent to which income groups disagree over policy issues. Some argue that it hardly matters who wields more influence over government if all parties want the same policies. Studies have generally found strong positive relationships between the policy preferences of different income groups (Enns 2015b; Soroka and Wlezien 2008; Ura and Ellis 2008; Wlezien and Soroka 2011). Soroka and Wlezien (2008) argue that even if government officials only care about the preferences of the affluent when making policy decisions, "differences across income groups are often rather small, and policy will end up in essentially the same place." Enns (2015a; 2015b) characterizes this phenomenon as middle-income citizens enjoying "coincidental representation."

Gilens is critical of the idea of “democracy by coincidence” on both empirical and normative grounds (2015). Empirically, he argues that middle-class preferences do not coincide with policy outcomes enough to justify the conclusion that average Americans are likely to be satisfied with the policies government adopts. Normatively, he argues that having a powerless majority dependent on a powerful minority to get their preferred policies enacted “is a debased and conditional form of democracy (if it is a form of democracy at all).”

Beyond the debate around coincidental representation, others have argued that the extensive overlap in the preferences of the affluent and the middle may generate biased empirical results for regression-based analyses (Bhatti and Erikson 2011; Branham et al. 2017; Stimson 2011). Bashir (2015), for example, asserts that the similarity of measured preferences across income groups introduces collinearity and thus including both median- and high-income preferences as independent variables in the same model may suppress the median-income coefficient. These scholars contend that large differences in the magnitudes of the group preference coefficients—which are the basis for the unequal responsiveness finding in multiple studies (Bartels 2008; Gilens 2005, 2012; Gilens and Page 2014; Page, Bartels, and Seawright 2013)—may therefore be partially or fully attributable to this multicollinearity. In response to these critics, Gilens (2016) argues that correlated independent variables do not bias the coefficients or the standard errors, and that Bashir’s findings in particular are the result of errors in the construction of his simulated data.

Considering the similarity of preferences across income groups, researchers have limited some analyses to cases of disagreement between income groups to better determine who has more influence. Although such disagreement is not the norm, it is not rare.

Moreover, the policy areas over which high-income and average Americans disagree reflect a range of issues that are important to Americans, including many that are relevant to economic inequality such as tax policy, the minimum wage, corporate regulation, and federal retirement programs (Gilens 2015). Differences in preferences across income levels have been identified in other nationally-representative datasets, especially in the areas of welfare and taxation policies (Enns and Wlezien 2011; Flavin 2012b; Soroka and Wlezien 2008; Wlezien and Soroka 2011). These differences become more dramatic at the tails of the income distribution such that the poor and the very affluent (e.g., the top one percent) express very distinct preferences from those in the middle (Broockman, Ferenstein, and Malhotra 2019; Flavin 2012b; Page et al. 2013). As we would expect if individuals' preferences are shaped by their economic status, these studies generally find that economic conservatism (more opposition to redistribution) is greater higher up the income distribution. The policies over which income groups disagree are therefore crucial to our understanding of the relationship between economic and political inequality.

### **2.1.1 Definitions of Disagreement**

Focusing on instances of policy disagreement allows researchers to investigate which income group has more influence while circumventing potential methodological issues associated with overlapping preferences. However, the way scholars measure disagreement varies considerably. Gilens (2005) initially defines disagreement as a *preference gap* between two income groups. A preference gap is the difference in proportional support for a given policy between two groups. In Gilens's 2005 study, the preference gap used to define disagreement is eight percentage points (8pp). If 60% of one

group and 69% of the other supported a policy change, for example, the preference gap for this policy would be 9pp—a sufficiently large difference to meet Gilens’ specified 8pp disagreement criterion. In later work, Gilens analyzes the same data using 5, 10, 15, and 20pp preference gaps and finds that the degree of unequal responsiveness increases as the preference gap widens (2011, 2012).

An alternative definition of disagreement is based on the notion of majority rule. Gilens and Page (2014) claim that “When a majority of citizens disagrees with economic elites... they generally lose.” To test this assertion, Bashir (2015) and Branham, Soroka, and Wlezien (2017) focus on cases where a majority of one income group supports and a majority of the other group opposes a given policy change (Bashir 2015). This definition uses what I call a *preference threshold*. Preference thresholds indicate disagreement if one income group is above and the other below a specified level of support. In this case, the scholars use a 50%—or majoritarian—preference threshold.

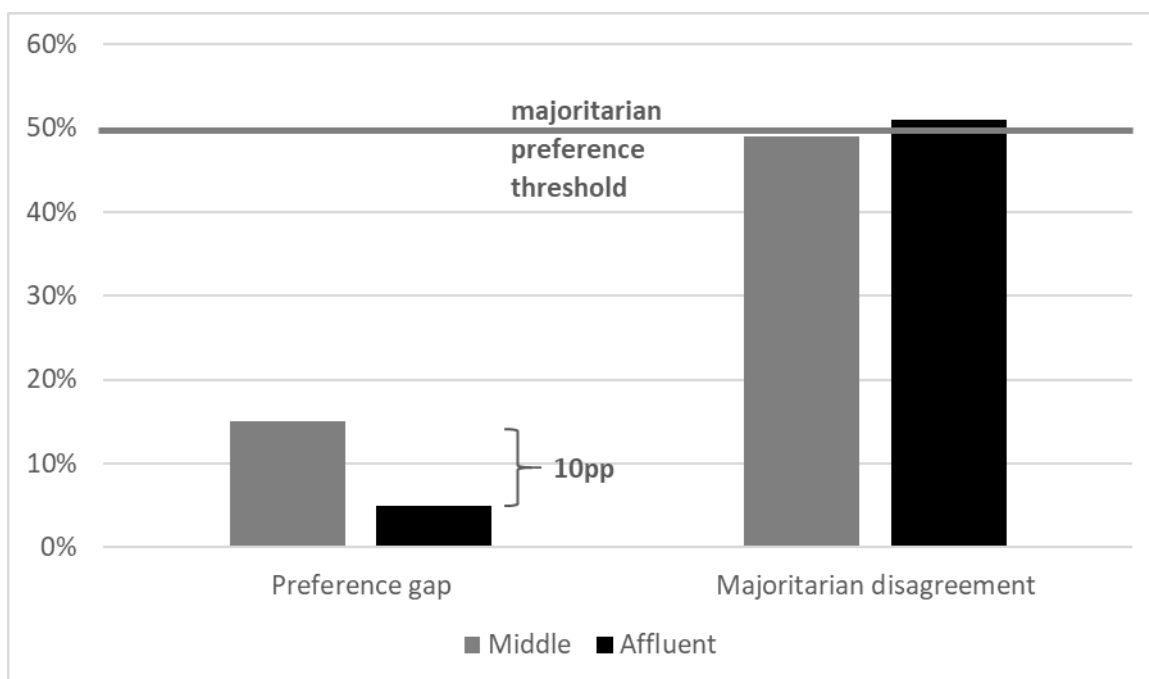
Gilens (2015), however, identifies a unique limitation of the majoritarian threshold: group preferences around 50% are ambiguous compared to higher or lower levels of group support because “any set of outcomes on such policies would be about equally congruent with middle-class preferences.” Gilens suggests “popular” and “unpopular” policies as a more useful categorical comparison. “The clearest indication of policy congruence (or its absence) arises from those proposed changes with strong majorities of middle-class Americans in favor or opposition.” He defines popular policies as those that are favored by at least three-quarters of respondents in a particular income group, while unpopular policies are those opposed by at least three-quarters. The preference thresholds for popular



and unpopular policies would therefore be 75% and 25%, respectively. This categorization presents yet another potential basis for defining disagreement.

Using either a preference gap or preference threshold alone does not consistently represent disagreement. Figure 1 demonstrates the limitations of each approach. The left pair of bars illustrates a hypothetical scenario where 15% of the middle and 5% of the affluent prefer a proposed policy change. This case would meet the 10pp preference gap definition of disagreement proposed by Gilens (2011, 2012). However, for this to theoretically represent disagreement, the middle-income group's 15% support would have to indicate overall group support for, or at least indifference towards, the proposed policy—a dubious proposition at best. This example illustrates the limitation of using only a preference gap to define policy disagreement.

The right pair of bars in Figure 1 present a scenario where 49% of the middle-income group and 51% of the high-income group prefer a proposed policy change over the status quo. This case would meet the majoritarian definition of disagreement, but the difference in support between the two groups would neither be substantively nor statistically significant. This same issue would apply to a case where any other absolute threshold (e.g., Gilens's 75% threshold for defining popular policies) is met, but the preference gap is small (Gilens avoids this pitfall by imposing a 10pp preference gap in addition to the 75% threshold). These examples illustrate the limitation of using only a preference threshold to define policy disagreement.



**Figure 1: Problems with existing definitions of policy disagreement.**

How disagreement is defined may have significant implications for studies of unequal responsiveness and the definitions posited by scholars may include cases that depart from common notions of disagreement. Incorporating both an absolute threshold and a preference-gap criterion addresses some of the shortcomings of using either criterion in isolation. However, given that prior studies using different definitions of disagreement have yielded drastically different results, there may still be large differences in results across definitions even when using combinations of preference gaps and thresholds. Moreover, there are limited theoretical or empirical bases for choosing one combination among the myriad possibilities. As the prior discussion illustrates, no practical definition is impervious to theoretical criticism. A majoritarian threshold may suggest neither group strongly supports or opposes the policy, even with a preference gap. Gilens' definitions of

popular and unpopular policies may indicate *both* groups support or oppose the policy. Therefore, a large degree of arbitrariness remains, especially in the absence of systematic analysis of how varying the definition of policy disagreement impacts empirical findings.

### **2.1.2 Win Rates, Policy Change Rates, and Status Quo Bias**

A second complication is that win rates, the measure some researchers have used to assess the relative influence of different income groups, are impacted by status quo bias. In their critiques of Gilens and Page's findings, Bashir (2015) and Branham, Soroka, and Wlezien (2017) revisit Gilens' data using win rates. They identify 185 cases that meet the majoritarian preference threshold definition of disagreement between income groups and then determine which group "wins," or gets their preferred policy outcome, in each case. One group winning can either mean that a majority of that group supported a policy change that was then implemented or that a majority of that group opposed a policy change that was not subsequently implemented. These scholars find that the middle win in 47% of cases of disagreement compared to the high-income group's 53% win rate. Based on these figures, they conclude that when the middle and rich disagree, "it is nearly a coin flip as to which group wins" (Branham et al. 2017). This is in direct opposition to Gilens and Page's claim that when average citizens disagree with economic elites they typically lose.

In response, Gilens (2015) also uses the win rate ("congruence rate") approach, but rather than using a majoritarian preference threshold, he employs his "popular" and "unpopular" thresholds in combination with a 10pp preference gap. In contrast with the "coin flip" result of his critics, he finds that the middle are half as likely as the affluent to get the outcomes they prefer on policies they strongly favor or oppose" (2015).

Calculating win rates therefore generates mixed support for the unequal representation hypothesis. While this is an appealingly straightforward way of measuring unequal responsiveness, I contend that win rates are distorted by status quo bias. It is widely accepted that there is a status quo bias among U.S. political institutions that reflects the difficulty of implementing even relatively popular policy changes (Enns et al. 2014; Gilens 2005; Richman 2011). Page and Gilens (2017) report that even when 70 or 80% of the public favors policy change, they generally do not get it. This is itself a limitation of the responsiveness of government to public preferences. If government cannot easily pass legislation, it cannot easily adapt policy to correspond with changes in public opinion.

Status quo bias is also highly relevant to the question of unequal influence. It suggests that the likelihood of a group “winning” will largely depend on whether they prefer policy change or the status quo. When one group prefers the status quo more than the other, it is impossible to distinguish between influence and coincidence. That is, we cannot determine whether instances where the status quo is maintained are attributable to systemic barriers to policy change (i.e., status quo bias) or one group’s efforts to block it (i.e. influence). Whichever group tends to prefer the status quo will have a higher “win rate” than if they had a general preference for policy change. This would distort the win rates for both groups, thus obfuscating each group’s relative influence. I investigate this as a potential explanation for how Gilens and his critics obtain drastically different win rates using different definitions of disagreement.

Branham, Soroka, and Wlezien (2017) recognize the importance of considering how status quo bias might impact win rates, and they employ policy change rates (“passage rates”) as an alternative approach to measuring policy influence. The authors conclude that

“There are inequalities to be sure, but they are limited,” and that “Although the rich do slightly better here, they clearly do not dominate the middle.” These conclusions, however, are not supported by the evidence they present, as I discuss in the online appendix. Rather, the available evidence indicates that the affluent do, in fact, dominate.

## **2.2 Data and Methods**

The analyses in the present study are based on the 1,779 survey questions used by Gilens and Page (2014). I will refer to these data as “the Gilens dataset” as they were collected by “Gilens and a small army of research assistants” (Gilens and Page 2014). Each observation is coded to indicate the proportional support of each income group for a proposed policy *change* and whether or not that change was enacted within four years.

The preferences of low-, middle-, and high-income Americans are estimated using a quadratic logistic regression technique that predicts the proportional support for each policy at the 10th, 50th, and 90th income percentiles, respectively. Gilens and Page refer to Americans at the 90th income percentile as “affluent,” and contend that their preferences “can usefully be taken as proxies for the opinions of wealthy or very-high-income Americans, and can be used to test the central predictions of Economic-Elite theories.” Moreover, they argue that “the imprecision that results from use of our ‘affluent’ proxy is likely to produce *underestimates* of the impact of economic elites on policy making.”

I focus on the claims and counterclaims pertaining to middle- and high-income citizens rather than low-income citizens for two main reasons. First, while researchers generally agree that the poor wield relatively little influence (Bartels 2008; Bhatti and Erikson 2011; Branham et al. 2017; Flavin 2012a), there is more debate around the

influence of middle-income Americans compared to that of the affluent (Bashir 2015; Enns 2015b, 2015a; Gilens 2015; Hayes 2013). Second, average Americans pertain closely to median voter and majoritarian theories of democracy. Despite this focus on the middle and the affluent, I also conduct supplementary analyses comparing the relative influence of low- and high-income Americans.

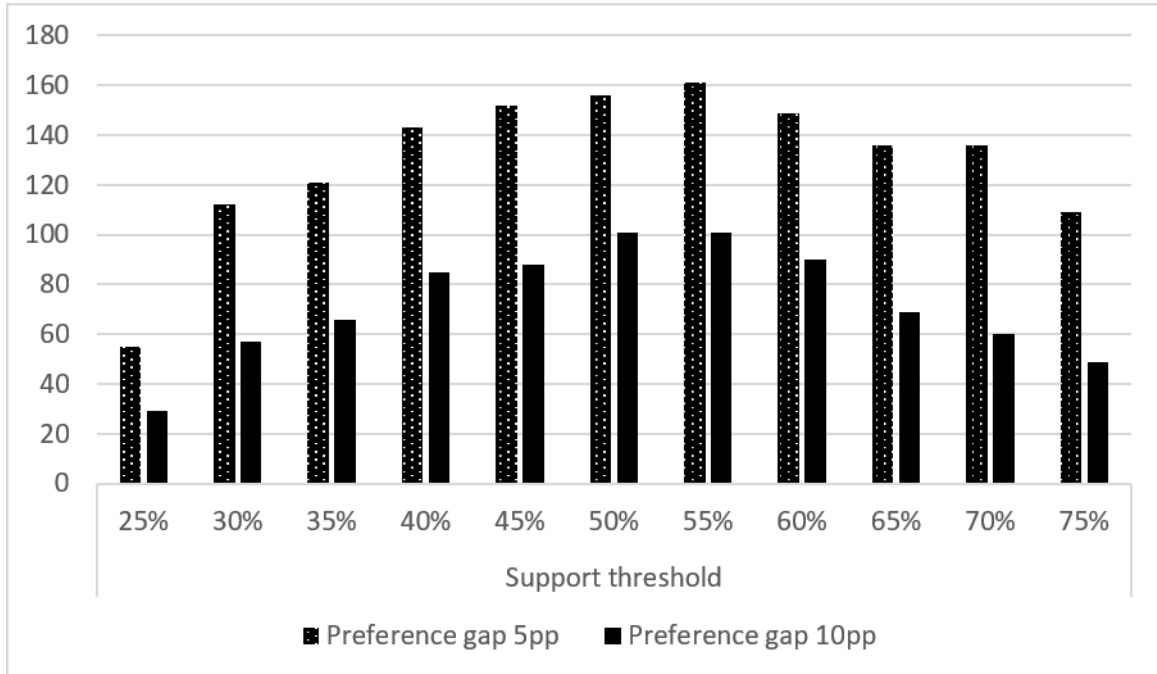
### **2.2.1 Disagreement**

Considering the diversity of policy disagreement definitions posited by scholars, and in the absence of compelling justification for choosing one over the rest, how should researchers proceed? I take a somewhat agnostic approach to this question by conducting analyses using a broad range of definitions. This allows me to assess how different scholars have produced contradictory findings using different definitions of disagreement.

Although a larger preference gap invariably implies greater disagreement, sample size limitations impose constraints. The larger the preference gap criterion, the fewer cases there are that meet it. Using the majoritarian threshold, for example, expanding the preference gap from 5pp to 10pp reduces the number of cases by over one third (from 156 to 101). There are also fewer observations further from the sample mean (about 53% support)—that is, when the support threshold is closer to 0 or 100%. At the 75% threshold, for example, there are 109 cases that meet the 5pp preference gap criterion; that reduces to only 49 cases when the preference gap is 10pp.

As such, I investigate the unequal responsiveness hypothesis using 22 different definitions of policy disagreement that combine eleven preference thresholds (in 5pp increments ranging from 25% to 75%) with two preference gaps (5 and 10pp). The 5pp

increments for the thresholds ensure that all cases where there is at least a 5pp preference gap and where one group exhibits proportional policy support somewhere between 25% and 75% are included in at least one of the 22 definitions of policy disagreement.



**Figure 2: Number of cases of disagreement by preference threshold and preference gap**

The number of cases of disagreement based on each of the 22 definitions are illustrated in Figure 2. The number of observations per definition ranges from 29 at the 25% threshold (with a 10pp gap) to 161 at the modal 55% threshold (with a 5pp gap). The average number of cases is 130 using a 5pp preference gap and 72 using a 10pp gap (the combined average is 101 cases). There are 843 total cases where the preference gap is at least 5pp. Excluding preference thresholds smaller than 25% and larger than 75% eliminates 87 of these observations (roughly 10%). There are 322 observations with a

preference gap of 10pp or larger, and 11 of these cases (3%) are eliminated by excluding preference thresholds below 25% and above 75%.

Of the full sample of 1,779 survey questions, 756 (42.5%) represent cases of disagreement by at least one of the twenty-two definitions. Conversely, every observation represents a case of *agreement* by some of the definitions. That means while a slight majority of cases consistently represent instances of policy agreement, no case represents disagreement according to every definition. However, many observations do represent disagreement according to multiple definitions. In the most divisive case, 66% of the middle preferred a tax hike on higher-income individuals while the same proportion of the affluent opposed this policy change.<sup>4</sup> Group preferences in relation to this policy represent disagreement according to 14 (64%) of the 22 definitions. While this case is atypical, most cases of disagreement by one definition meet the criteria for at least one other definition.

### **2.2.2 Measuring Influence**

The approach to defining disagreement outlined above not only allows me to make sense of contradictory findings in prior research; it also helps highlight the strengths and weaknesses of two methods of measuring unequal responsiveness. Given the previously discussed concerns about win rates and status quo bias, I first use another method of measuring unequal responsiveness: I estimate the relative influence of affluent and middle-income Americans by comparing policy change rates based on different patterns of policy preference. Second, I return to win rates to assess my suspicion that status quo bias distorts win rates.

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<sup>4</sup> The proposed tax hike was not implemented.



For the first method, I identify four mutually-exclusive preference patterns for each of the 22 definitions of disagreement: 1) both groups oppose the proposed policy change, defined by the proportional support of both groups being below the defined preference threshold; 2) both groups support the proposed change, defined by both groups' support being above the defined threshold; 3) only the middle supports the proposed change, defined by the middle being above and the affluent below the defined preference threshold with a preference gap wider than the defined preference gap criterion; and 4) only the affluent supports the proposed change, defined by the affluent being above and the middle below the defined preference threshold with a sufficiently wide preference gap. Within each preference pattern for each definition of disagreement, dividing the instances where policy change was enacted by the total generates a policy change rate.<sup>5</sup>

This approach is preferable for two main reasons. First, while status quo bias still impacts policy change rates, this impact does not favor one group over another. This is because policy change rates are measured separately depending on which group prefers the status quo over a proposed policy change. The numerator and denominator are specific to each preference pattern. This is not the case for win rates, where the numerator and denominator include cases where the middle prefers the status quo *and* cases where the affluent prefer the status quo.

Second, the four preference patterns provide better comparisons by which to assess the independent influence of each group. Prior analyses have typically only included cases

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<sup>5</sup> Branham, Soroka, and Wlezien (2017) use a similar approach (see Table 3), using eight preference patterns between the affluent, middle, and poor and a majoritarian preference threshold.

of disagreement, which means that one of the groups *must* win and the other *must* lose. This makes discerning influence from coincidence difficult, especially when status quo bias is known to play a role. The patterns of agreement identified above—both groups oppose change and both support change—provide useful baseline comparisons for cases of disagreement. In such cases, both groups win or lose over the same policy. Subtracting the likelihood of implementation for proposed policy changes that are supported by only one group from that of policies opposed by both groups offers a reasonable estimate of that group’s independent influence. This represents a measure of positive influence in that it represents a group’s ability to have their preferred policy changes enacted, despite the opposition of the other group. The change rate when both groups support policy change provides a comparison by which to derive a measure of negative influence; Differencing the change rates between policies supported by both groups and those opposed by one group provides a measure of each group’s ability to prevent the implementation of policy changes they oppose.

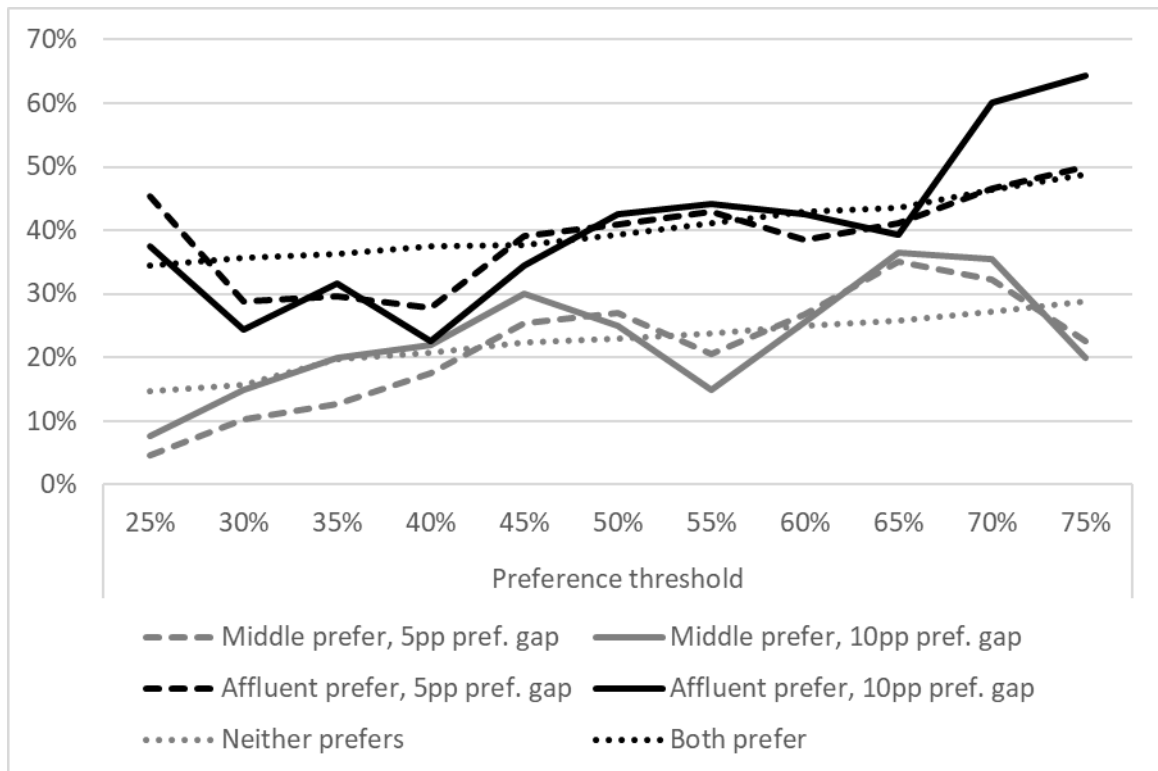
After my analyses based on the aforementioned approach, I return to win rates to assess the relative utility and reliability of this method. I analyze the win rates of affluent and middle-income Americans when they disagree over policy using each of the 22 definitions of disagreement. As stated previously, middle-income “wins” include cases where the middle prefer policy change and the change is implemented as well as cases where the middle prefer the status quo and the proposed policy change is *not* implemented. Summing all these middle-income wins and dividing by the total number of cases of disagreement produces a middle-income win rate. Win rates for both the middle and the affluent can be calculated in this manner for each definition of disagreement.

In order to analyze whether win rates are distorted by status quo bias, I first determine which group tends to prefer the status quo and which group tends to prefer policy change using different preference thresholds. I can then assess if middle-income win rates are higher when the middle tend to prefer the status quo and lower when they tend to prefer policy change. Such a pattern would suggest that status quo bias does indeed distort win rates.

### **2.3 Policy Change Rates**

What do policy change rates tell us about responsiveness, and how consistent are these findings across definitions of agreement and disagreement? First, it is instructive to look at cases of agreement between income groups. The black and grey dotted lines in Figure 3 represents cases where both groups support or oppose the proposed policy change, respectively. As we would expect, policies that are supported by both groups are more likely to be implemented than policies opposed by both groups. The policy change rate when both groups support change steadily increases from roughly 34% using the 25 percent preference threshold to 49% using the 75 percent threshold. The presence of status quo bias is clear; even when over three quarters of both income groups support policy change, it is enacted less than half the time. The rate of policy change in cases of unified opposition also steadily increases from about 15% to 29% as the preference threshold increases. The fact that some policies are implemented despite both groups opposing them suggests that responsiveness to the public is imperfect (or that government responds to the preferences of groups not included in this analysis). The upward slope of the lines indicates that higher preference thresholds are correlated with higher policy change rates. This is

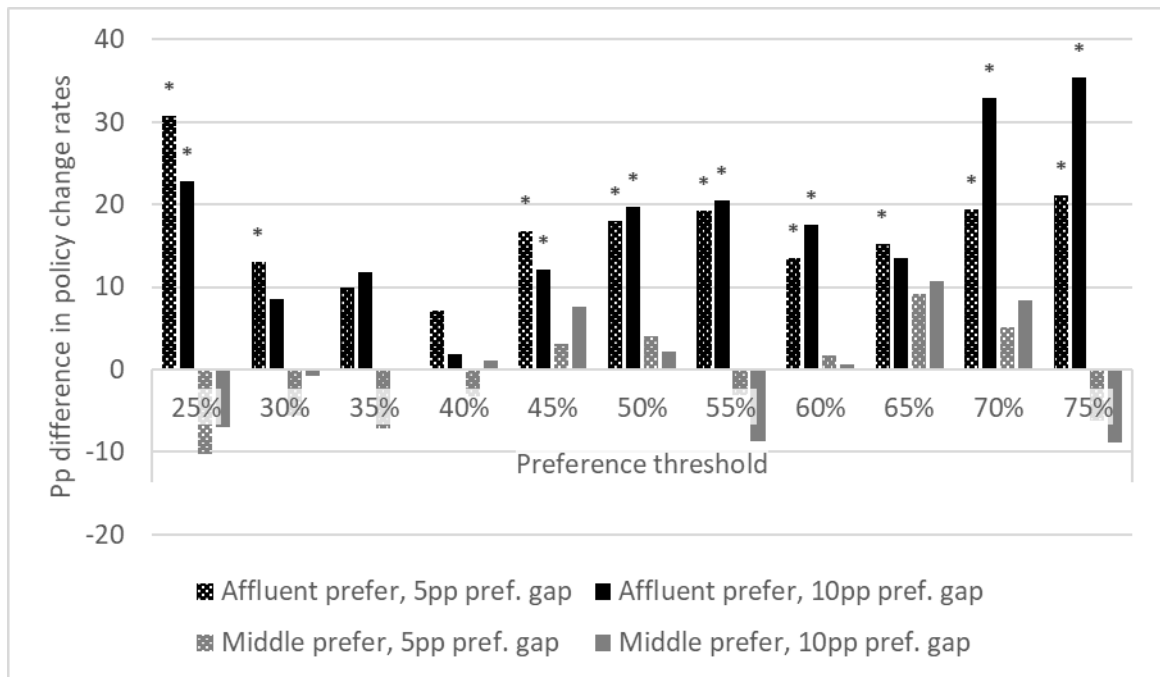
because a higher preference threshold generally means higher support among both income groups than a lower preference threshold, and policies that enjoy more overall support are more likely to be implemented (Bashir 2015; Branham et al. 2017; Enns 2015a; Gilens 2005; Gilens and Page 2014). While responsiveness may be imperfect, it is still very present.



**Figure 3: Policy change rates are similar whether the middle agree or disagree with the affluent.**

The grey dashed and solid lines represent cases where only the middle prefer policy change based on a 5 and 10pp preference gap, respectively. These lines closely track the line representing united opposition to change. This indicates that middle-income *support* for a policy does not notably *increase* the likelihood of policy change.

A similar pattern can be seen when comparing policy change rates in instances where both groups prefer a proposed policy change to the corresponding rates when only the affluent prefer change. The similarity of the black lines indicates that middle class *opposition* to a proposed policy change typically does not *decrease* the likelihood that it is implemented. Together, these findings support the notion that U.S. policy is responsive to the preferences of the affluent, but not to those of the middle. However, more precisely comparing the relative influence of each income group requires a closer look at the data.



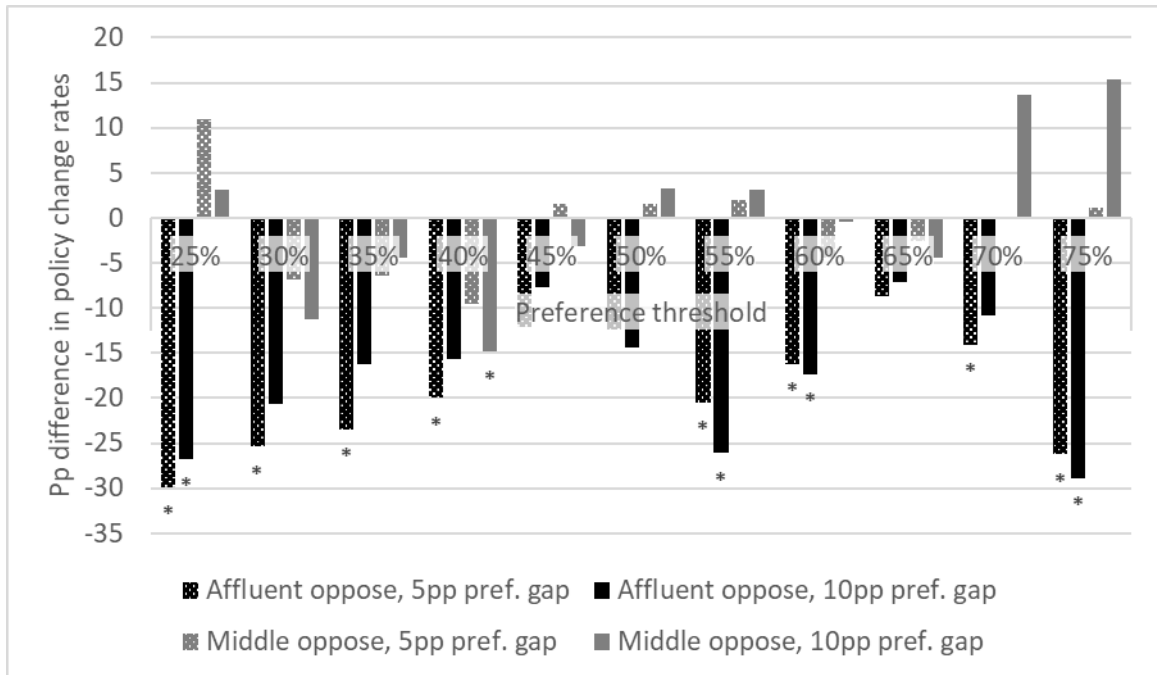
**Figure 4: Policy change rates are higher when only the affluent prefer change than when neither group prefers change.**

Figure 4 offers a more detailed examination of the differences between instances of agreement and disagreement. The black bars above the horizontal axis indicate how much higher the policy change rate is when only the affluent prefer change than when neither

group prefers change. Similarly, the grey bars illustrate the difference in policy change rates between cases where only the middle prefers change and cases where neither group prefers change. These represent positive measures of each group's influence.

For all 22 definitions of disagreement, the policy change rate is higher in cases where the affluent alone prefer change than for cases where both groups oppose change. For 16 (72.7%) of these definitions, this difference is statistically significant. Conversely, the difference between cases where both groups oppose the change and cases where the *middle* favor the change (illustrated by the grey bars) is actually negative in 10 cases (45.5%) and never significant. These findings suggest that policies supported by the affluent—but not those supported by the middle—are significantly more likely to be implemented than those opposed by both groups.

Figure 5 compares the policy change rate in cases where both income groups *support* change with the policy change rate in cases where one group opposes change. This offers a measure of each group's negative policy influence. For example, the black bars indicate how much lower the policy change rate is when the affluent oppose change than when both groups support it. Across all definitions of disagreement, high-income opposition is associated with a lower policy change rate compared to cases where both groups prefer change. The difference is statistically significant in 13 (59.1%) of the definitions of disagreement. Middle-income opposition is associated with a significantly lower policy change rate in 1 of the 22 definitions of disagreement. Overall, these findings indicate that policy changes opposed by the affluent—but not those opposed by the middle—are significantly less likely to be enacted than those supported by both groups.



**Figure 5: Policy change rates are lower when only the affluent oppose change than when both groups prefer change.**

Averaging across the 11 preference thresholds, proposed policy changes that both groups oppose are still enacted a quarter of the time and those supported by both groups are enacted 38.5% of the time. Averaging across all 756 cases of disagreement, policies supported by the middle alone are enacted at roughly the same rate (24.5%) as those opposed by both groups, and the policy change rate for those policies supported by the affluent alone (37.5%) is about the same as those supported by both groups. This overall finding holds even when using the majoritarian definition of policy disagreement that Gilens’s critics use (without a specified preference gap). The policy change rate using this definition is significantly higher when the rich support change (36.5%) than when neither group does (22.9%), but not when the middle support change (25.6%). Conversely, the difference in policy change rates between cases where both groups support change (39.4%)

and cases where one group opposes change are significant when it is the rich opposing change (-13.8pp) but not when the middle oppose change (-2pp). These findings are consistent with Gilens's claim that while high-income preferences have a sizable independent influence on policy, the preferences of the middle have little to no influence.

## **2.4 Does Status Quo Bias Distort Win Rates?**

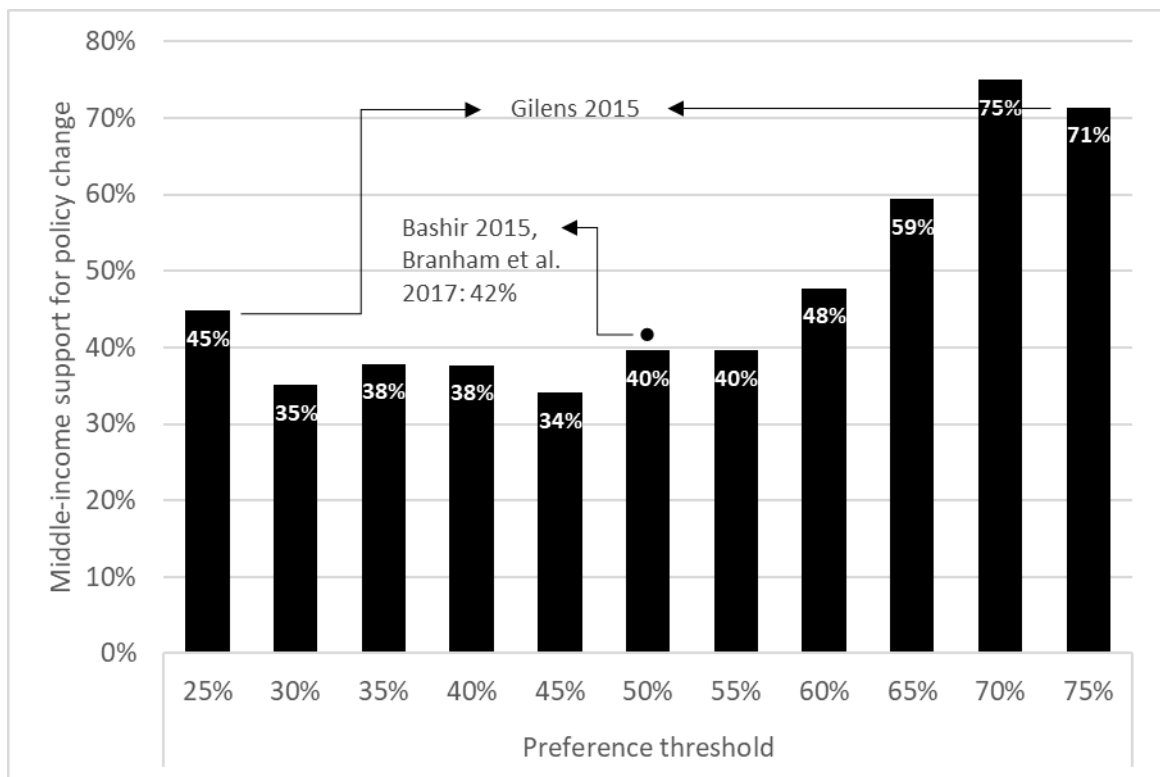
What might account for the contradictory results of prior research based on win rates? If one group tends to prefer policy change and the other tends to prefer the status quo, this may impact how often each group gets their preferred policy outcome. Secondary analyses of Gilens' data using a majoritarian preference threshold have found that middle-income citizens tend to support the status quo more often than the affluent in cases of disagreement (Bashir 2015; Branham et al. 2017). Bashir concludes from this that "any status-quo bias embedded in the policy process favors average Americans." It is worth looking at this claim more closely.

Which group prefers policy change shifts depending on the preference threshold used to define disagreement, as Figure 6 illustrates. Using the majoritarian preference threshold (50%) in conjunction with a 10pp preference gap, the middle-income group prefers policy change less frequently (40% of the time) than does the high-income group (60%). Using Gilens's (2015) threshold for defining *unpopular* policies (25%) produces similar findings. Namely, the middle prefers policy change only 45% of the time.

As the preference threshold increases from 50%, however, the disparity in preferences is dramatically reversed. Using Gilens's (2015) threshold for defining *popular* policies (75%), the middle-income group prefers policy change in 71% of all cases of



disagreement. These results indicate that status quo bias does not consistently favor the middle. While I impose a 10pp preference gap here (consistent with Gilens’ approach), conducting the same analysis using a 5pp gap produces the same general pattern (not shown). When we use a preference threshold of at least 65%, it is the affluent—not the middle—who prefer the status quo over policy change.

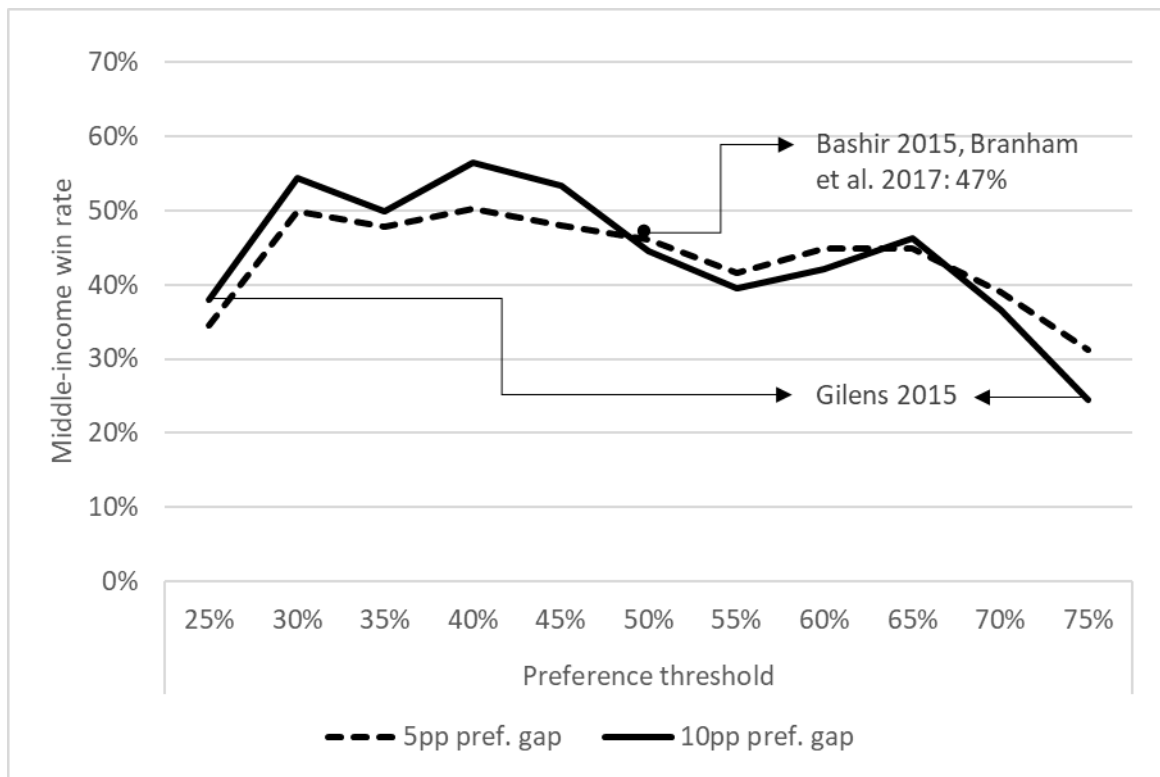


**Figure 6: Who supports policy change when middle and affluent disagree depends on preference threshold.**

Averaging across all 756 cases of disagreement, the affluent and middle prefer the status quo with roughly the same frequency—the middle prefer the status quo 52.5% of the

time, which is statistically indistinguishable from 50%. This largely contradicts the finding that the middle tend to prefer the status quo.

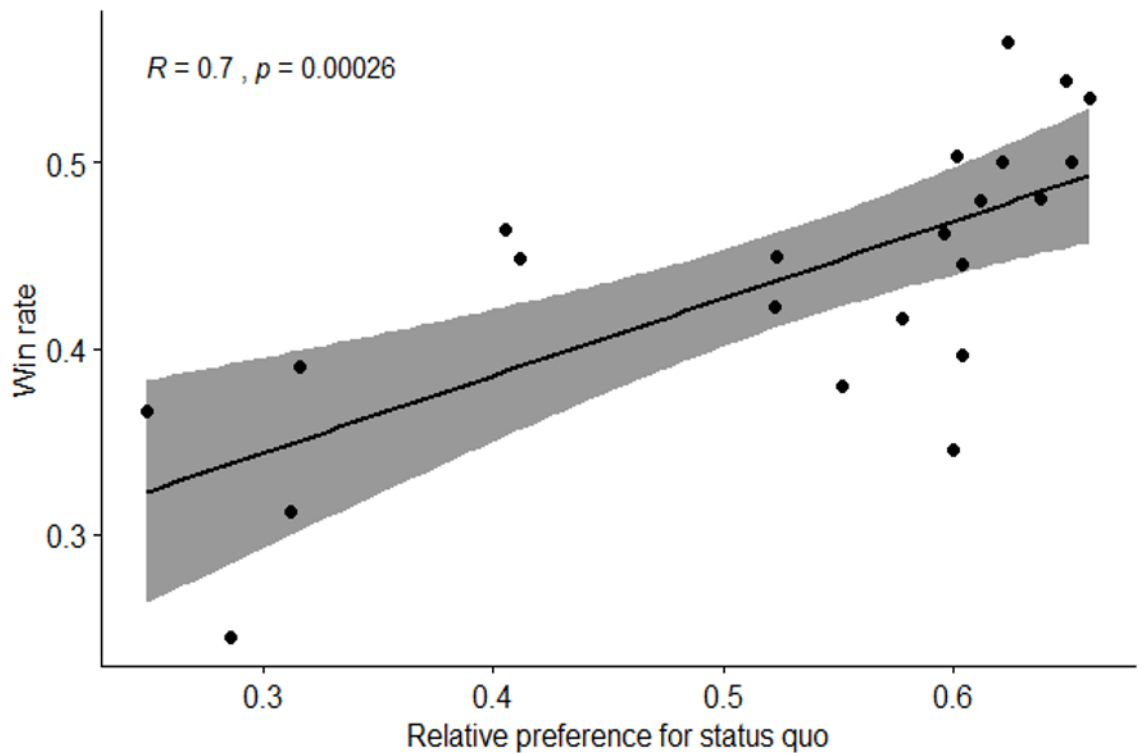
Regardless of which group tends to prefer the status quo, however, I expect status quo bias to distort win rates. When the affluent prefer the status quo (as they do overall under Gilens’s 2015 definitions of disagreement), win rates should exaggerate the extent of unequal responsiveness. The affluent “win” more than they otherwise would simply because they prefer the status quo. Conversely, when the middle prefer the status quo (as they do under the majoritarian definition of disagreement), win rates should underestimate the extent of unequal responsiveness.



**Figure 7: Middle-income win rates are lower when using higher preference thresholds.**

Figure 7 illustrates how win rates are sensitive to different definitions of disagreement. The general downward slope closely mirrors the upward slope in Figure 6. This is consistent with my expectation that the middle-income win rate is higher when this group has a preference for the status quo and lower when they prefer policy change. The dashed and solid black lines represent middle-income win rates across each of the eleven preference thresholds using a 5pp and a 10pp preference gap, respectively. We can tell a very different story about the middle's relative influence depending on which definition of disagreement we select.

The preference threshold with the highest middle-income win rate is 40%. The middle-income win rate at this threshold is 56.5% with a 10pp preference gap. This would suggest that when the middle disagree with the affluent over proposed policy changes, they win a majority of the time, indicating that the affluent have *less* influence than the middle. The threshold with the lowest middle-income win rate is 75%. The win rates at this threshold is 24.5% with a 10pp preference gap. This would suggest that when the groups disagree, the affluent are overwhelmingly more likely to win.



**Figure 8: The more the middle prefers the status quo, the more they “win.”**

These contradictory findings offer evidence that win rates are an unreliable measure of influence. Across all cases of disagreement using all 22 definitions, there is a strong correlation (0.7) between middle-income preference for the status quo and win rates, as seen in Figure 8. Additional evidence of the distorting influence of status quo bias is included in the online appendix, where I disaggregate win rates by policy outcome.

## **2.5 Conclusion**

In this study, I revisit Gilens’s unique dataset of policy questions and outcomes to assess the impact of different definitions of policy disagreement between income groups on analyses of each group’s relative influence over policymaking. It makes a few notable contributions to the unequal responsiveness debate. First, it introduces a unique approach

to defining policy disagreement between groups of actors. I use 22 combinations of preference gaps and preference thresholds. Although thousands of potential combinations exist, I believe these 22 definitions offer a reasonable balance of theoretical and practical considerations. I argue that this approach to defining policy disagreement is more robust than using definitions of disagreement that depend on a single preference gap or preference threshold, and it allows for an examination of how different researchers have come to drastically different conclusions using the same data.

Second, this analysis demonstrated that win rates are an unreliable measure of relative policy influence. Which income group tends to prefer the status quo in cases of disagreement varies depending on the definition of disagreement used. Status quo bias inflates the win rates in favor of whichever group tends to prefer the status quo, and the impact of this bias varies across definitions of disagreement.

Third, I advance a method of measuring the relative independent influence (both positive and negative) of two groups of actors that avoids the potential multicollinearity of regression-based analyses and the aforementioned pitfalls of analyses based on win rates. Namely, I compare policy change rates across four preference patterns. Cases where both groups either support or oppose a given policy change provide baselines by which to compare cases where the parties disagree. Combining this framework with my approach to defining disagreement minimizes bias and allows for a more direct measure of relative independent policy influence.

Lastly, the preceding analysis presents strong evidence that the preferences of high-income Americans have a large impact on the likelihood that a policy will be enacted, while the preferences of average citizens matter little to naught. Averaging across the 22

definitions of disagreement, when the affluent prefer policy change and the middle opposes it, the rate of change is nearly identical to when both groups prefer it. When only the middle prefers policy change, the rate of change is the same as when both groups oppose it. These results support the findings of prior research (Bartels 2008; Gilens 2005, 2012; Gilens and Page 2014; Hayes 2013; Page et al. 2013). Additional analyses find strong evidence of unequal responsiveness to the affluent and poor as well.

It is worth emphasizing that unequal influence is not the same as policy congruence. Even though average Americans have minimal influence on the policymaking process, they often still see the policies they prefer implemented. This is because the preferences of different income groups generally overlap. As Enns points out, this is true even when the preferences of income groups differ (i.e., a preference gap exists), because “the policies that receive the most (least) support among the middle typically receive the most (least) support among the affluent” (2015b). This “coincidental representation” may reduce average Americans’ dissatisfaction with government, but it falls short of the democratic ideal of equal representation and leaves a powerless majority dependent on a powerful minority to get their preferred policies enacted (Gilens and Page 2016).

This study focuses on two groups of actors: middle- and high-income Americans. While these income groups are particularly relevant to the theories of majoritarian democracy and economic elite domination, other scholars have compared the relative policy influence of low- and high-income Americans (Bartels 2008; Bhatti and Erikson 2011; Flavin 2012a; Rigby and Wright 2011, 2013). I repeat the above analyses to compare the relative policy influence of the poor (10<sup>th</sup> income percentile) to that of the affluent. Of the full sample of 1,779 survey questions, nearly 60% represent cases of disagreement

between the affluent and poor by at least one of the 22 definitions. The results of this supplemental analysis, which can be found in the online appendix, show strong evidence of unequal responsiveness between the affluent and poor, with 20 of 22 definitions of disagreement indicating that the affluent wield significant negative influence over the likelihood of policy change and all definitions indicating they wield significant positive influence. Conversely, only one definition indicates that the poor have significant positive influence, and none indicate they have significant negative influence.

Other groups of actors pertaining to different theories related to the unequal democracy debate are left unexamined, such as racial groups, party activists, and business-oriented and mass-based interest groups. Employing the methodological approach laid out here to compare the relative independent influence of other groups of actors presents an opportunity for future research. Research that more directly measures the relative influence of the superrich rather than the merely affluent would better align with theories of economic elite domination, especially considering increased inequality at the very top of the income distribution. This methodological approach could also be used in longitudinal analyses to investigate how the extent of unequal influence may vary over time, and whether political and macroeconomic conditions help explain this variation. Investigating the conditions under which middle- or low-income Americans do wield a degree of political influence in particular states (à la Flavin 2014, 2015a, 2015b; Rigby and Wright 2011, 2013) is also a fertile area for future research.

### **3. Gendered Spillover Effects of Unemployment on Different-Sex Couples' Well-Being**

In the midst of the COVID-19 pandemic, the unemployment rate in the United States (U.S.) is currently estimated to be higher than at any point since the Great Depression, and it is growing at an unprecedented clip (Wolfers 2020). While unemployment has obvious short- and long-term repercussions for families' material well-being, the non-pecuniary costs of unemployment may be just as damaging and enduring.

Measures of subjective well-being (SWB) offer crucial insights into people's cognitive and emotional states that are not captured with traditional measures of economic utility. Components of SWB are linked to a variety of outcomes of social, economic, and political interest. Longitudinal evidence suggests that low levels of subjective well-being (SWB) precede many negative outcomes across multiple domains, including health, marriage, friendship, income, and work performance (for a summary, see: Lyubomirsky, King, & Diener, 2005). People who are dissatisfied with their lives are also less likely to participate in the political process (Flavin and Keane 2012). Unemployment's impacts on SWB may therefore have ripple effects that permeate many aspects of social life within and beyond households.

Scholars have established a relationship between transitions into and out of unemployment and subsequent changes in SWB, indicating that unemployment is causally linked to decreases in well-being. Both economic and psychosocial factors contribute to the unemployment-SWB link (Boyce et al. 2013; Di Tella, Haisken-De New, and MacCulloch 2010; Winkelmann and Winkelmann 1998; Young 2012). But unemployment affects more than just the unemployed; studies have identified spillover effects of unemployment on



other household members—especially partners (Bubonya, Cobb-Clark, and Wooden 2017; Inanc 2018; Luhmann et al. 2014; Marcus 2013; Nikolova and Ayhan 2019; Qian and Qian 2015).

To my knowledge, there are no studies of spillover effects of unemployment that use nationally representative data from the U.S. Studies of other countries and localized areas of the U.S. provide mixed evidence for variation of effects by gender. The present study investigates gendered effects of unemployment on the SWB of different-sex U.S. couples using recent data from the Panel Study of Income Dynamics (PSID). I eliminate the confounding influence of time-invariant person-specific characteristics that could impact both unemployment transitions and well-being through fixed effects analysis. While husbands'<sup>6</sup> unemployment is negatively associated with wives' well-being, I find no evidence that wives' unemployment spills over to impact husbands' cognitive or affective well-being. Wives' affective well-being seems to be more responsive to their own unemployment than to their husbands' unemployment, while wives' cognitive well-being seems to be more responsive to their husbands' unemployment. One possible interpretation of these findings is that, despite the large emotional toll of their own unemployment, women prioritize their husbands' unemployment over their own when assessing their life satisfaction because gender roles emphasize male breadwinning. These results hold even when the wife is the primary earner prior to unemployment.

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<sup>6</sup> While my sample includes both married and “permanently cohabiting” couples, I use the terms husband and wife for brevity's sake.

### **3.1 Unemployment and Subjective Well-Being**

That unemployment negatively impacts psychological well-being is well-established. While some early studies of the psychological effects of unemployment were conducted in the wake of the Great Depression (e.g., Eisenberg and Lazarsfeld, 1938), a large number of longitudinal studies have been published in the last half century. The bulk of the most prominent research relies on data from Germany (Clark, Georgellis, and Sanfey, 2001; Lucas, Clark, Georgellis, and Diener, 2004; Winkelmann and Winkelmann, 1998), the United Kingdom (Bolton and Oatley, 1987; Clark and Oswald, 1994), and the United States (Cohn 1978; Dooley, Prause, and Ham-Rowbottom 2000). Other countries in the literature include Australia (Feather and O'Brien 1986), Canada (Hamilton, Merrigan, and Dufresne 1997), and Sweden (Nordenmark and Strandh 1999).<sup>7</sup> This research has examined a variety of subgroups, including adults of various ages, industries, and social classes. The measures of psychological well-being and mental health used have included measures of self-concept, negative and positive affect, self-efficacy, life satisfaction, and symptoms of depression, anxiety, stress, and other mental health conditions. A consensus emerged from this literature that, across a range of contexts and subgroups, unemployment has negative effects on a variety of psychological outcomes.

Researchers have converged on several standardized measures of psychological well-being as the literature on SWB has developed. Scholars have identified two broad categories of SWB measures (Andrews and Withey 1976; Lucas, Diener, and Suh 1996; Stiglitz, Sen, and Fitoussi 2009). The first category is affective well-being, which includes

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<sup>7</sup> It is notable that virtually all the mainstream research on this topic uses data from The Global North, although the present study does nothing to rectify this disparity.

both positive, or pleasant, and negative, or unpleasant, emotions. Affective well-being survey questions generally ask about the frequency with which the respondent has felt various emotions within a specified time period in the recent past (e.g., in the last week). Negative affect typically captures psychological distress and depressive symptoms and therefore overlaps with some measures of mental health. Positive affect and negative affect are distinct emotional states. Because sadness is not the absence of happiness, or vice versa, negative and positive affect can relate to other concepts in ways that are independent of one another (Kushlev, Dunn, and Lucas 2015; Lucas et al. 1996). Additionally, since unemployment is understood to be a negative life event, the literature on the relationship between affective well-being and unemployment has primarily focused on negative affect.

The second category of SWB measures—cognitive well-being—refers to evaluations of life satisfaction or, in some cases, satisfaction within particular domains of life. Survey questions capturing cognitive well-being typically include both positive (satisfied) and negative (dissatisfied) response items in a single symmetric scale.

Some of the negative SWB effects of unemployment are a result of financial strain and diminished living standards associated with the loss of income. Indeed, researchers have identified an association between income losses and decreases in psychological well-being (Boyce et al. 2013; Frey and Stutzer 2002; Di Tella et al. 2010). Additionally, debts and self-reported financial difficulty have been linked to mental disorder and decreased positive affect (Gudmundsdottir 2013; Jenkins et al. 2008). It seems, however, that these pecuniary costs of unemployment are not the only—or even the primary—mechanism for reduced psychological well-being.

Social scientists have attempted to separately estimate the pecuniary costs of unemployment (e.g., lower income) from non-pecuniary costs. Controlling for changes in household finances typically shows that such pecuniary factors explain little of the unemployment-SWB relationship (Di Tella et al. 2010; Winkelmann and Winkelmann 1998; Young 2012). Unemployment has been linked to several outcomes that are independent of financial losses, including a reduction or loss of status, self-esteem, roles and identities defined by employment, a daily time structure, social connection with non-family, a sense of shared goals and purposes, and regular activity (Darity and Goldsmith 1996; Jahoda 1988; Di Tella et al. 2010). These non-pecuniary costs of unemployment have direct and indirect ramifications for SWB.

Individuals who experience unemployment tend to adapt such that the negative effects of unemployment on psychological well-being diminish over time (Clark and Oswald, 1994; Lucas et al., 2004; Luhmann, Hofmann, Eid, and Lucas, 2012). However, scholars also report long-term “scarring effects” of unemployment that persist even after the unemployed are reemployed (Clark et al., 2001; Daly and Delaney, 2013; Knabe and Ratzel, 2011; Young, 2012). Lucas and colleagues (2004), for example, find that “individuals reacted strongly to unemployment and then shifted back toward their baseline levels of life satisfaction. However, on average, individuals did not completely return to their former levels of satisfaction, even after they became reemployed.” Daly and Delaney (2013) find that the duration of unemployment throughout adulthood is associated with higher levels of psychological distress at age 50, even after controlling for employment status at age 50 and early-life distress levels. Similarly, Mossakowski (2009) finds that unemployment duration

over 15 years of the transition to adulthood predicts later depressive symptoms of young adults net of current socioeconomic status and prior depressive symptoms.

### **3.1.1 Spillover effects of unemployment**

Household members have lives that are intricately interwoven such that the circumstances and well-being of one member are often closely linked to those of other household members. This is especially true for cohabiting partners. The employment status of one partner can impact the composition and division of resources (money, time, etc.) and duties (housework, caretaking, etc.) in a household. It can also impact the employment of the other partner. For example, wives of men who become unemployed frequently enter the workforce to help offset lost income (McGinnity 2002; Stephens 2003). These changes in household resources and responsibilities resulting from a change in one partners' employment status can impact the well-being of the other partner.

Drawing from network theory, scholars have described the SWB impacts of partners' job loss and unemployment as spillover effects (Bubonya et al. 2017; Inanc 2018; Marcus 2013; Mendolia 2014; Nikolova and Ayhan 2019). Some early longitudinal studies using data from U.S. East Coast communities found evidence of spillover effects of husbands' unemployment on their wives' affective well-being and mental health (Atkinson, Liem, and Liem 1986; Dew, Bromet, and Schulberg 1987; Dew and Penkower 1991; Liem and Liem 1988; Penkower, Bromet, and Dew 1988).

The pathways linking the unemployment of one partner and the SWB of the other are complex. Vinokur, Price, and Caplan (1996) find that financial strain increases the depressive symptoms (negative affect) of recently unemployed workers and their partners

among a sample of job seekers in southeast Michigan. Partners' resulting depressive symptoms are associated with less encouragement for and greater undermining of their unemployed partners—behaviors that then reduce the relationship satisfaction of both partners. Using nationally-representative panel data from Korea, Kim and Do (2013) find the spillover effects of a husband's unemployment on his wife's SWB to be partially mediated through the wife's dissatisfaction with family and social relations. Research from The Netherlands finds that, for both partners in a relationship, work and family demands increase time deficit and energy deficit, these deficits increase components of negative affect, and these negative emotions cross over from one partner to the other (ten Brummelhuis, Haar, and van der Lippe 2010). Relationship strain in the wake of unemployment can be severe enough to end marriages; job displacement has been found to increase the probability of divorce (Charles and Stephens, Jr. 2004). These multidirectional pathways may introduce feedback loops whereby the SWB effects of unemployment are amplified in partnerships.

Recent studies of spillover effects of unemployment have been conducted using data from Germany (Knabe, Schöb, and Weimann 2016; Luhmann et al. 2014; Marcus 2013; Nikolova and Ayhan 2019), the United Kingdom (Inanc 2018; Mendolia 2014), China (Qian and Qian 2015), Australia (Bubonya et al. 2017), and Korea (Kim and Do 2013). Aside from the localized studies from the 1980s and '90s, I am aware of only one study that investigates spillover effects among U.S. couples. Siegel and colleagues (2003) use longitudinal data from the Health and Retirement Study to examine potential effects of a husband's unemployment on his wife's negative affect (depressive symptoms). Their study, however, is limited to older adults (the mean age of wives in the sample is roughly 55), only includes a measure of

affective (and not cognitive) well-being, and does not investigate potential spillover effects of wives' unemployment on their husbands' SWB.

### **3.1.2 Gender, SWB, and unemployment**

While much of the literature on unemployment and SWB has focused exclusively on men's unemployment, researchers began investigating the SWB effects of women's unemployment as more women entered the workforce in the late 20<sup>th</sup> century and dual-earner couples have increasingly become the norm in many countries, including the U.S. This research has produced conflicting findings regarding how gender moderates the unemployment-SWB relationship. Many studies indicate that men are more negatively impacted by their own unemployment than are women. Paul and Moser (2009) conduct a meta-analysis of 237 cross-sectional and 87 longitudinal studies and find that the effect size of unemployment on mental well-being is significantly larger for men than for women. This finding is consistent with more recent research (Luhmann et al. 2014; Marcus 2013; van der Meer 2014; Qian and Qian 2015). A meta-analysis of 104 studies by McKee-Ryan and colleagues (2005), however, indicates that unemployed women have worse affective and cognitive well-being than unemployed men, although the analysis does not compare effect sizes by gender. Other studies find no difference in the SWB impacts of unemployment between men and women (Hammarstrom et al. 2011; Leeftang, Klein-Hesselink, and Spruit 1992; Nordenmark and Strandh 1999; Thomas, Benzeval, and Stansfeld 2005).

One factor that may explain these disparate findings is significant variation between countries and over time regarding conceptions of the male breadwinner role and women's labor force participation (Hammarstrom et al. 2011). Strandh et al. (2013) argue that in

countries where women's labor force participation is higher and more normalized, the SWB effects of unemployment for men and women are more similar, whereas countries where there is a greater gender disparity in participation will have larger disparities in the SWB effects of unemployment. The authors provide support for this theory drawing from longitudinal data from Sweden and Ireland—countries with relatively high and low women's participation rates, respectively.

Few studies have explored possible gender differences in the SWB effects of unemployment in a contemporary U.S. context. The women's labor-participation rate in the U.S. (81.6% in 2017) is much closer to the Irish rate (78.8%) than the Swedish rate (90.2%)(Ortiz-Ospina and Tzvetkova 2017). Extrapolating from the theory and evidence put forward by Strandh and colleagues (2013), we might expect men to be more negatively impacted than women by unemployment in the U.S. Such a gender disparity exists in The Netherlands, where the female participation rate is slightly higher than in the U.S. (van der Meer 2014). Dooley et al. (2000), though, find no significant gender differences in the SWB effects of unemployment in the U.S. A study using U.S. data from the early 21<sup>st</sup> century finds women to be *more* responsive to transitions into unemployment than men (Young 2012). These studies are limited, however, in that both are based on only two waves of data.

The spillover effects of partners' unemployment have also been found to be moderated by gender in some contexts. Researchers find the impacts of men's unemployment on female partners' SWB to be larger than the effects of women's unemployment on male partners' SWB in Australia, the U.K., and China (Bubonya et al. 2017; Inanc 2018; Qian and Qian 2015). The evidence from Germany is mixed. Marcus (2013) reports larger spillover effects from husbands' unemployment to wives' depressive



symptoms than from wives' unemployment to husbands' SWB. Other researchers did not find any gender differences in spillover effects of unemployment to partners' life satisfaction (Luhmann et al. 2014; Nikolova and Ayhan 2019).

Another German study that considers both affective and cognitive components of SWB finds no gender differences in spillover effects for affective well-being (Knabe et al. 2016). When looking at unemployed men and women's cognitive well-being, however, the relationship between the partner's employment status and SWB is of opposite signs. "The cognitive well-being of unemployed men is higher when their spouse is unemployed than when she is employed, while our results point in the opposite direction for unemployed women (although the results for women are not statistically significant)." The authors interpret this finding to mean "An unemployed man is made more aware of his inability to fill the role of the 'breadwinner' if his wife is employed, while he does not feel as if he has shifted this burden to his wife if his wife is unemployed, too" (Knabe et al. 2016). Similarly, Inanc (2018) finds that British men's SWB is most affected when they are unemployed and their wives are permanently employed. She applies theories of doing gender and gender role deviation pertaining to male breadwinning to explain these findings.

The present study contributes to this literature by investigating how the effects of unemployment on SWB within U.S. couples may be gendered. It estimates effects of men and women's own unemployment, and spillover effects from their partners' unemployment, using measures of both affective and cognitive well-being. It further explores whether men are more negatively impacted by their own unemployment if their partners are employed or earn more than them, as theories of gender deviation would anticipate.

### **3.2 Data and Methods**

The present analyses use eight waves of data from the Panel Study of Income Dynamics (PSID) between the years 2001 and 2017. The PSID is a longitudinal, nationally-representative survey of U.S. households that was first administered in 1968. During the years included in this study, the survey was administered biennially. Data on life satisfaction was collected beginning in 2009, so analyses of cognitive well-being are limited to five survey waves between 2009 and 2017. Data on psychological distress was not collected in 2005, so analyses of affective well-being include eight waves between 2001 and 2017, excluding 2005.

Whichever household member responds to the survey in a given wave is asked to provide information about all other household members. Given the subjective nature of the well-being variables, however, those questions are only asked of the survey respondent. Therefore, this analysis is limited to respondents. Because the respondent may vary from wave to wave within the same household, individuals in this analysis are less likely to be present in all survey waves than if the analysis were not limited to survey respondents.

The sample for this study is limited to households where the reference person is married or permanently cohabiting. In order to exclude retirement- and college-aged individuals, the study is limited to respondents between the ages of 22 and 64. Due to limitations in the survey data, gender is treated as binary and only different-sex couples are included in analyses of partnered respondents.

### 3.2.1 Key variables

The PSID uses the K-6 Non-Specific Psychological Distress scale to measure affective well-being, one of two outcome variables in the present study. More specifically, this is a measure of negative affect. The K-6 scale is based on six survey questions about the frequency of experiencing negative feelings in the prior month. Each question uses a five-point scale ranging from “all of the time”—recorded as “1”—through “none of the time”—recorded as “5”. I sum the values for each of the six items to generate a scale ranging from 6 to 30 and standardize the result. Each integer value indicates the number of standard deviations from the sample mean, allowing for a more direct and intuitive comparison with cognitive well-being.

The other outcome variable—cognitive well-being—is measured based on responses to the following survey question: “Please think about your life as a whole. How satisfied are you with it?” Response items range from “completely satisfied”—recorded as “5”—to “not at all satisfied”—recorded as “1”. I again standardize the resulting values.

The independent variables in this analysis are respondents’ own employment status and their partners’ employment status. These are captured using binary variables indicating whether the respondent/partner is employed, unemployed, or out of the labor force (not employed and not currently looking for work). I consider those who are temporarily laid off to be unemployed. Those considered out of the labor force include retirees, students, and those who are permanently disabled or “keeping house.”

### **3.2.2 Control Variables**

Time-varying controls are included for the purpose of isolating the effect of employment changes. Additional employment controls include whether the respondent/partner worked fewer than 20 hours per week on average in the prior year, as well as the number of weeks missed due to unemployment or needing to care for other sick people. It is important to consider the control for unemployment in the prior year when interpreting results, as unemployment has been found to have long-term SWB effects.

Self-rated health is based on responses to the following question: “Would you say your health in general is excellent, very good, good, fair, or poor?” Values are coded such that “5” corresponds with “excellent” health and “1” corresponds with “poor” health. An additional binary variable distinguishes permanent disability from other reasons for being out of the labor force. Number of weeks of work missed in the prior year due to illness is included as an additional health control.

Household finance controls include prior-year household income and dummy variables indicating homeownership and negative or no household wealth. Household wealth is the sum of all assets (including real estate) minus the sum of all debts. Income is bottom-coded at \$5,000 and logged because it is heavily right-skewed.

Finally, I control for the number of children under the age of 18 in the household.

### **3.2.3 Modeling Strategy**

To eliminate the potentially confounding influence of person-specific, time-invariant variables, I use a within-person fixed-effects, or mean deviation, approach. Year dummies

are included to control for exogenous year-to-year changes. This is important considering the timeframe of this study includes two macroeconomic recessions and two expansions.

The modeling strategy laid out above does not fully eliminate the possibility of reverse causation. There is some evidence that aspects of SWB might make unemployment more—and reemployment less—likely. Diener and colleagues (2002) find that the self-rated cheerfulness of students at college entry predicts their likelihood of reporting having experienced unemployment 19 years later. Specifically, the likelihood of ever having experienced unemployment was about 43% higher for individuals with the lowest cheerfulness rating compared to those with the highest rating. Cheerfulness, however, is a very distinct concept from negative affect or cognitive well-being. Cheerfulness is more properly understood to be a personality characteristic or disposition and will therefore vary less than SWB over time (Luhmann, Schimmack, and Eid 2011).

In their 2009 meta-analysis, Paul and Moser find evidence that individuals who become unemployed are more likely to have lower SWB in the first wave of longitudinal studies. These selection effects, while significant, are small. It is also possible that employees anticipate their job loss and subsequent unemployment, thus explaining their lower SWB before becoming unemployed. Paul and Moser include a separate analysis of factory-closure studies. Factory closures are exogenous to employee SWB and can therefore be viewed as natural experiments for the study of the effects of unemployment on SWB. The researchers find an average effect size among factory-closure studies that is slightly more than two-thirds the effect size among studies with other designs, and both average effect sizes are highly significant. This offers a degree of confidence that most of the estimated

effect of unemployment on SWB using a fixed-effects regression approach is not attributable to reverse causation or selection effects.

### **3.3 Results**

Sample means and standard deviations for the dependent and independent variables are displayed in Table 1. Consistent with other studies, younger adults, men, and Black and Latinx Americans are more likely to be unemployed than their older, female, or white counterparts (e.g., Hoynes, Miller, and Schaller, 2012). Unsurprisingly, higher levels of formal education are associated with lower rates of unemployment.

Mean affective well-being in the sample is 27.2 (out of a maximum of 30), indicating respondents generally report low levels of psychological distress. Mean cognitive well-being is 4, suggesting the typical response to the life satisfaction question is “very satisfied.” Men and women have the same cognitive well-being, but—consistent with the literature on gender and mental health—women have higher levels of psychological distress. Among racial groups, Black respondents have the lowest levels of cognitive well-being. Latinx respondents have roughly the same SWB as white respondents. Affective well-being is fairly consistent across racial groups. This is consistent with the notion of racial mental health “paradox.” Black and Latinx Americans often exhibit equal or lower rates of depression than whites despite their greater exposure to stressors (including unemployment) and worse physical health (Barnes, Keyes, and Bates 2013; Breslau et al. 2006; Kessler et al. 2005; Keyes, Barnes, and Bates 2011).

**Table 1 : Sample means and standard deviations—U.S. partnered adults.**

	Unemployment		Affective well-being (6-30)		Cognitive well-being (0-5)		Sample size
	Mean	SD	Mean	SD	Mean	SD	n
<b>Full partnered sample</b>	4.40%	0.21	27.2	3.44	3.98	0.74	7,359
<b>Age group</b>							
22-30	6.57%	0.25	26.7	3.44	3.99	0.74	1,185
31-40	4.51%	0.21	27.1	3.30	4.01	0.71	2,133
41-50	3.95%	0.19	27.2	3.48	3.96	0.72	1,518
51-64	3.57%	0.19	27.6	3.47	3.96	0.76	2,523
<b>Gender</b>							
Men	4.91%	0.22	27.6	3.05	3.96	0.74	3,190
Women	3.96%	0.20	26.9	3.71	3.99	0.73	4,169
<b>Race</b>							
White	3.64%	0.19	27.2	3.37	3.98	0.71	4,315
Black	9.42%	0.29	27.1	3.84	3.84	0.82	1,646
Latinx	6.06%	0.24	27.4	3.66	4.04	0.81	823
<b>Educational attainment</b>							
Less than HS	7.28%	0.26	26.3	4.57	3.84	0.88	1,401
HS diploma	4.68%	0.21	27.2	3.46	3.94	0.75	3,056
College degree	3.11%	0.17	27.5	2.88	4.04	0.67	2,902
<b>Employment status</b>							
Employed			27.5	3.03	4.00	0.70	5,465
Unemployed			25.9	4.488	3.67	0.89	306
OLF			26.3	4.49	3.96	0.81	1,588

Data from PSID (2001-2017)

Educational attainment is positively associated with both SWB measures in the sample. Regarding employment status, those who are unemployed have the lowest SWB. The cognitive well-being of those out of the labor force is close to average for the full sample, but this group reports similar affective well-being to the unemployed. Considering they make up nearly three quarters of the full sample (n=7,359), the average SWB of employed respondents is barely higher than the sample average.

### 3.3.1 Unemployment and affective well-being

Table 2 reports the estimated effects of unemployment on the affective well-being of partnered men and women. Model 1 represents the baseline model and includes dummy indicators of employment status (employed is the reference status) for men and women and their respective spouses. It includes controls for prior-year employment characteristics, number of children in the household, and survey wave. Model 2 adds current and prior-year health controls and Model 3, the full model, adds household finance controls.

Across all three models, the coefficient for individuals' own unemployment is significantly negative for men and women, while the coefficient for partner's (spouse's) unemployment is only significantly negative for women. The addition of health controls slightly reduces the unemployment coefficients for women, but otherwise the unemployment coefficients remain stable across models.

Comparing the magnitude of coefficients in the full model (Model 3), that of men's own unemployment is largest (-0.18), followed by women's own unemployment (-0.12). Unemployment seems to have a significant negative effect on both men and women, although the effect for men seems to be about 56% larger than that for women.

The estimated spillover effect from husbands' unemployment to wives' affective well-being is -0.07 while the corresponding coefficient for men's well-being is effectively zero. This indicates that while men's unemployment increases their partners' psychological distress, women's unemployment does not impact their partners' negative affect.



**Table 2: Within-person fixed effects estimates of the impact of unemployment on the affective well-being of wives and husbands.**

	Wives			Husbands		
	(1)	(2)	(3)	(1)	(2)	(3)
Unemployed - <i>self</i>	-0.123*** (0.029)	-0.117*** (0.028)	-0.117*** (0.028)	-0.182*** (0.029)	-0.184*** (0.029)	-0.182*** (0.029)
Unemployed - <i>spouse</i>	-0.080** (0.028)	-0.075** (0.028)	-0.073** (0.028)	-0.000 (0.033)	-0.002 (0.033)	0.001 (0.033)
Out of labor force - <i>self</i>	-0.095*** (0.018)	-0.051** (0.018)	-0.048** (0.019)	-0.104*** (0.030)	-0.051 (0.032)	-0.040 (0.032)
Out of labor force - <i>spouse</i>	-0.013 (0.026)	0.006 (0.028)	0.011 (0.029)	-0.004 (0.018)	0.005 (0.019)	0.011 (0.019)
Additional work controls	Yes	Yes	Yes	Yes	Yes	Yes
Health controls		Yes	Yes		Yes	Yes
Household finances			Yes			Yes
Children in home	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.125*** (0.019)	-0.419*** (0.043)	-0.498** (0.169)	0.331*** (0.020)	-0.043 (0.046)	-0.403* (0.180)
Respondents	5,030	5,030	5,030	3,652	3,652	3,652
Person-years	18,629	18,629	18,629	12,892	12,892	12,892
R-squared	0.007	0.033	0.035	0.011	0.025	0.027

Standard errors in parentheses.

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

**Table 3: Within-person fixed effects estimates of the impact of unemployment on the cognitive well-being of wives and husbands.**

	Wives			Husbands		
	(1)	(2)	(3)	(1)	(2)	(3)
Unemployed - <i>self</i>	-0.109** (0.038)	-0.112** (0.038)	-0.111** (0.038)	-0.215*** (0.042)	-0.214*** (0.041)	-0.199*** (0.042)
Unemployed - <i>spouse</i>	-0.183*** (0.036)	-0.173*** (0.036)	-0.164*** (0.036)	-0.000 (0.048)	0.000 (0.048)	0.001 (0.048)
Out of labor force - <i>self</i>	-0.071** (0.027)	-0.061* (0.027)	-0.060* (0.029)	0.008 (0.049)	0.004 (0.051)	0.034 (0.054)
Out of labor force - <i>spouse</i>	-0.112** (0.038)	-0.097* (0.041)	-0.079+ (0.042)	0.051 (0.031)	0.058+ (0.031)	0.058+ (0.033)
Additional work controls	Yes	Yes	Yes	Yes	Yes	Yes
Health controls		Yes	Yes		Yes	Yes
Household finances			Yes			Yes
Children in home	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.179*** (0.023)	-0.389*** (0.065)	-0.685*** (0.183)	0.080** (0.026)	-0.407*** (0.076)	-0.786*** (0.203)
Respondents	4,055	4,055	4,055	4,055	2,876	2,876
Person-years	11,951	11,951	11,951	11,951	8,180	8,180
R-squared	0.013	0.024	0.026	0.013	0.026	0.028

Standard errors in parentheses.

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

### **3.3.2 Unemployment and cognitive well-being**

The overall findings presented in Table 3 are consistent with findings for affective well-being. Unemployment seems to negatively impact men and women, although the estimated effect is 79% larger for men than women in the full model. The coefficients for the effects of men's unemployment on their partners' and their own cognitive well-being are reduced after adding household finance controls, indicating that pecuniary costs of men's unemployment explain a small portion of its overall SWB effect.

Again, women seem to be negatively impacted by being out of the labor force (OLF). Women's cognitive well-being also seems to be negatively impacted when their partners are OLF, although this coefficient becomes statistically insignificant after adding financial controls. Men are not impacted by being OLF themselves and, if anything, their cognitive well-being improves when their partners are OLF, although this coefficient is insignificant.

Coefficients for all control variables are included in the appendix. Notably, women seem to be negatively impacted by being out of the labor force. Having zero or negative wealth is significantly detrimental to both components of women's SWB and to men's affective well-being. Log income is positively associated with SWB for both genders, but the cognitive well-being coefficient is only significant for women and the affective well-being coefficient is only significant for men. Homeownership seems to increase life satisfaction for both genders (although the statistical significance is borderline for women).

### **3.3.3 Gender role deviation**

Unemployment coefficients are illustrated in Figure 9 for the sake of comparison. In the full sample (top left), it is clear that husbands' unemployment impacts their own SWB

and the SWB of wives. While women's unemployment impacts their own SWB, it does not impact the SWB of their male partners. In other words, among different-sex couples in the U.S., unemployment only spills over onto partners' SWB when it is the man who loses his job. Own unemployment seems to impact men more than women, and these differences are significant for both affective and cognitive well-being. This is contrary to findings from other U.S. studies indicating either no gender differences (Dooley et al. 2000) or larger effects for women (Young 2012). However, it is consistent with expectations based on findings in other countries with similar levels of women's labor force participation (e.g., The Netherlands) (ten Brummelhuis et al. 2010; Strandh et al. 2013).

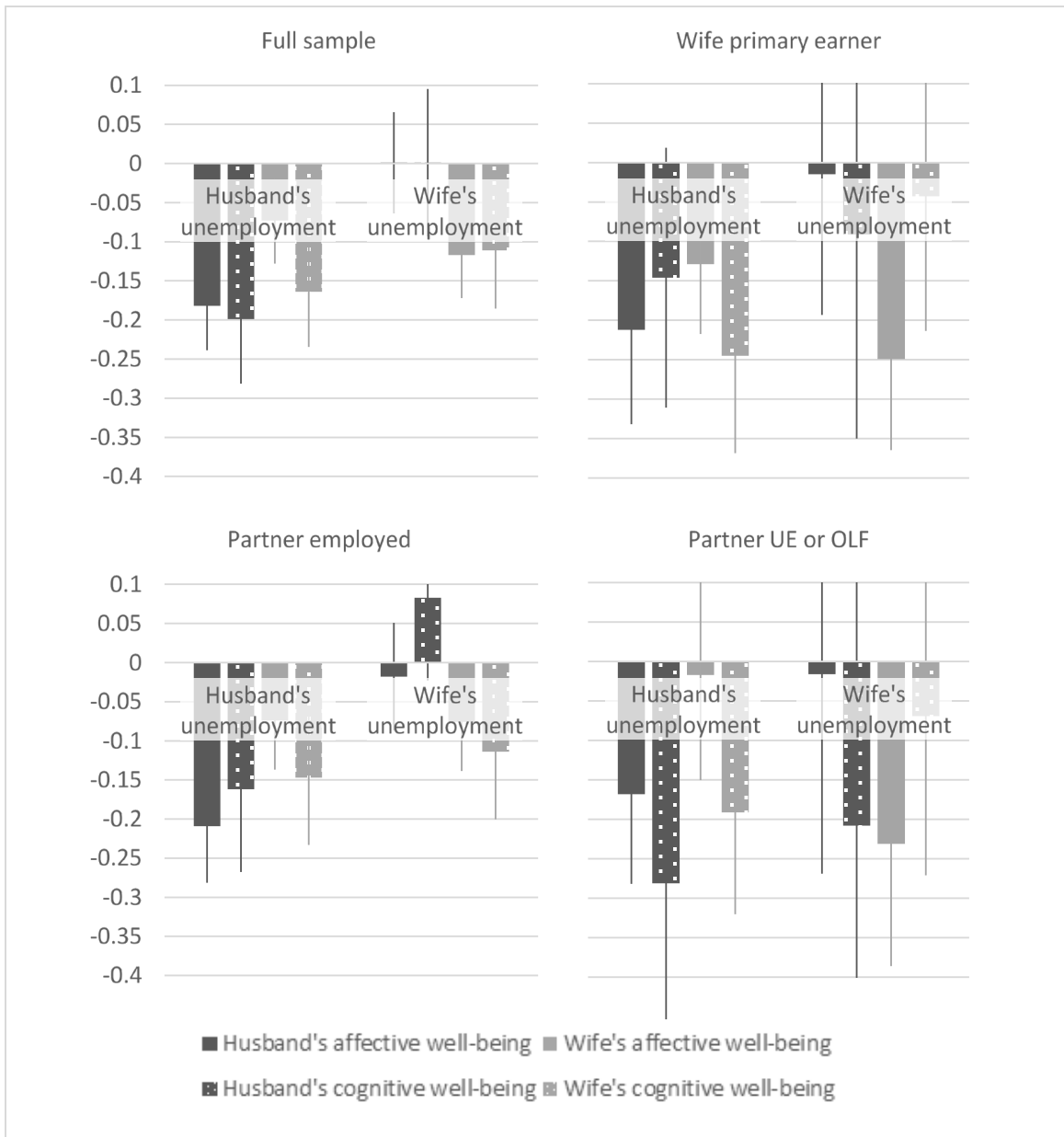
In addition to the full sample findings, Figure 9 shows the same unemployment coefficients under three separate conditions: 1) when women contribute more household income than their partners (top right); 2) when the other partner is employed (bottom left); and 3) when the other partner is unemployed or OLF (bottom right). With few exceptions, the main findings from the full sample are upheld in all three conditions. The estimated effects of husbands' unemployment on SWB are significantly negative for five of the six coefficients for each partner. The estimated effects of wives' unemployment are significantly negative in four of the six coefficients for their own SWB, and never significant for their husbands' SWB. These findings are consistent with the notion that male breadwinning remains an important facet of how men "do gender" (West and Zimmerman 1987) in contemporary U.S. society, and that unemployment represents a deviation from this gender role expectation.

Gender deviation theories would further maintain that men's unemployment should have a larger negative effect on their SWB when their wives are employed or are the

primary breadwinner. Unemployed men should be made more aware of their inability to fulfill the role of breadwinner if their wives are employed. Conversely, if their wives are unemployed or OLF, men should not feel as if they have shifted the breadwinning burden onto them (Knabe et al. 2016).

Consistent with this expectation, the estimated effects of a man's unemployment on his affective well-being is larger when his wife is the primary earner (-0.21) or is employed (-0.21) than when the wife is unemployed or OLF (-0.17), although the differences are not statistically significant. When it comes to men's cognitive well-being, however, the opposite pattern is observed: The estimated effects of a man's unemployment on his cognitive well-being is *smaller* when his wife is the primary earner (-0.15) or is employed (-0.16) than when she is unemployed or OLF (-0.28). Again, however, the differences are insignificant.

Gender deviation theories would anticipate that a woman's own unemployment will negatively impact her SWB the same or more if her husband is unemployed or OLF than if he is employed (Knabe et al. 2016). Again, the evidence for affective well-being is consistent with this expectation. The estimated effects of a woman's own unemployment on her affective well-being is larger when her husband earns less than her (-0.25) or when he is unemployed or OLF (-0.23) than when he is employed (-0.08), and these differences *are* statistically significant. Again, this pattern is reversed for cognitive well-being: The estimated effects of a woman's own unemployment on her cognitive well-being is *smaller* when her husband earns less than her (-0.04) or when he is unemployed or OLF (-0.07) than when he is employed (-0.11), although these differences are insignificant. Notably, however, of the three estimates, a woman's cognitive well-being is only significantly impacted by her own unemployment when her husband is employed.



**Figure 9: Estimated impact of unemployment on husbands' and wives' subjective well-being**

Collectively, these findings are fairly consistent with theories of gender role deviation. However, when disaggregating the overall sample by the employment status and

relative income contribution of each partner, the results for cognitive well-being tend to run counter to the expectations of gender deviation theories.

This latter finding may suggest a level of cognitive-emotional dissonance for both men and women in their responses to unemployment. Affectively, women are most impacted by their own unemployment when their partners are unemployed, OLF, or earning less than them. Because the household financial prospects are worse in this scenario, it makes sense for women's levels of psychological distress to be particularly elevated. In terms of their life satisfaction, however, women are not significantly impacted under these conditions. But when their partners are employed, women's unemployment does significantly impact their life satisfaction.

Conversely, men's affective well-being seems to be most impacted by their own unemployment when their partners are employed or earning more than them. This suggests their emotional response is linked to the male breadwinner role expectation. In terms of life satisfaction, however, men seem to be most negatively impacted by their own unemployment when their partners are also unemployed or OLF.

In the full sample and in the three conditional subsamples identified in Figure 9, wives' affective well-being seems to be more responsive to their own unemployment than to their husbands' unemployment, while wives' cognitive well-being seems to be more responsive to their husbands' unemployment. These paradoxical findings evade an obvious explanation. One possible interpretation is that, despite the large emotional toll of their own unemployment, women prioritize their husbands' unemployment over their own when assessing their life satisfaction because gender roles emphasize male breadwinning. More

research is needed to identify and untangle explanatory factors for this apparent cognitive-emotional dissonance in how partnered men and women respond to unemployment.

### **3.4 Conclusion**

In light of the limited and contradictory evidence for gendered SWB effects of unemployment in the United States, this study examines these effects for men and women in different-sex partnerships. Specifically, I investigate how men's and women's affective well-being (psychological distress) and cognitive well-being (life satisfaction) are impacted by their own unemployment, as well as that of their partners. To estimate within-person SWB effects and eliminate the biasing influence of time-invariant confounders, I apply fixed-effects regression to several recent waves of nationally-representative data from the PSID. I control for various time-varying characteristics of the household and both partners, and estimate the non-pecuniary costs of unemployment by controlling for household financial characteristics.

The results of this analysis largely support theories of gender role deviation, which maintain that men are expected to serve as the primary breadwinner in a household and unemployment represents a deviation from this role. Consistent with these theories, the findings suggest that men's unemployment has a larger negative impact on their SWB than women's unemployment has on their SWB. Additionally, men's unemployment has spillover effects on their partners' SWB, but women's unemployment does not significantly impact their partners' affective or cognitive well-being. These findings generally hold even when limiting analyses to cases where women are employed, earn more income than men, or are unemployed or OLF, suggesting that the male breadwinner archetype still plays a significant



role in shaping partnered men's emotional and cognitive responses to unemployment. Furthermore, these findings support previous findings that the non-pecuniary SWB costs of unemployment are greater than the financial costs.

The estimated impacts of a man's unemployment on his affective well-being seems to be larger when his female partner is employed or earns more than him than when she is unemployed or OLF, although the differences are statistically insignificant. This provides additional, if modest, evidence consistent with the notion that deviation from the male breadwinner role negatively impacts men's well-being. Also consistent with theories of gender role deviation, the estimated impacts of a woman's unemployment on her affective well-being is significantly larger when her male partner earns less or is unemployed or OLF than when he is employed.

The estimated impacts of men and women's unemployment on their life satisfaction, however, are not consistent with gender deviation theories when comparing across the aforementioned conditions (wife earns more, partner unemployed or OLF, and partner employed). A woman's cognitive well-being is only significantly impacted by her unemployment when her husband is employed, while a man's cognitive well-being seems to be most impacted by his unemployment when his wife is unemployed or OLF. More research is needed to investigate potential explanations for this apparent cognitive-emotional dissonance in men and women's SWB responses to unemployment.

## **4. Asymmetric Effects of Income Change on Subjective Well-Being**

The economic insecurity of U.S. households has risen markedly over the last several decades. The share of households losing at least half of their annual income over a two-year period increased by around 50 percent between the early 1970s and the mid-2000s (Dynan et al., 2012). The 2007 recession exacerbated this general trend by dramatically increasing the proportion of households experiencing job loss and cuts to hours and wages (Hoynes et al., 2012). Although overall unemployment has declined since the recession, many households continue to experience income volatility, which may have deleterious effects on household members' mental health.

The literature on the relationship between income and psychological well-being began as an effort to answer the seemingly simple question, 'Does money buy happiness?' It has since expanded to include various aspects of SWB beyond happiness alone, including global evaluations of life satisfaction, or cognitive well-being, and other positive and negative emotions, commonly referred to as affective well-being. This research produced strong evidence that income and SWB are positively related such that individuals with higher incomes tend to have higher levels of SWB than poorer individuals.

The relationship between individual-level changes in income and SWB, however, is not as clear. This is due in part to the fact that the literature has generally either made no theoretical distinction between gains and losses—assuming symmetry in the way gains and losses relate to SWB—or has looked at gains exclusively. The basic research question underlying this approach is 'How much does an incremental increase in income improve SWB?' This approach is ill-equipped to assess the impact of income losses, potentially the

most deleterious component of income volatility. Prior research has also generally ignored partners' characteristics like employment status and health that could influence household income and the SWB of partnered individuals.

In this study, I use measures of negative affect (psychological distress) and life satisfaction, and consider both positive and negative changes in income. Using eight waves of data between 2001 and 2017 from working-age Americans surveyed for the Panel Study of Income Dynamics (PSID), I test the assumption that proportional gains and losses have an equal and opposite (i.e., symmetric) impact on SWB. Additionally, I run separate analyses on married or permanently cohabiting respondents that include controls for their partners' health and employment status.

#### ***4.1 Earnings and Subjective Well-Being***

Research on SWB has identified two broad categories of SWB measures (Andrews and Withey 1976; Lucas, Diener, and Suh 1996; Stiglitz, Sen, and Fitoussi 2009). The first category—cognitive well-being—refers to evaluations of life satisfaction or, in some cases, satisfaction within particular domains of life. The second category is affective well-being, which comprises both positive and negative emotions. All three of these constructs—cognitive well-being, positive affect, and negative affect—are measured using surveys, and affective well-being questions generally ask about the frequency of the respondent feeling various emotions within a specified time period in the recent past (e.g., in the last seven days). Negative affect is typically measured through questions designed to capture psychological distress and depressive symptoms. Positive affect and negative affect are

distinct concepts with different relationships with other variables that are not simply the inverse of one another (Kushlev, Dunn, and Lucas 2015; Lucas et al. 1996).

There is a well-established link between higher levels of income and higher levels of SWB, even after controlling for a number of other factors (e.g., Clark and Shields, 2007; Stevenson and Wolfers, 2013). Research has generally found diminishing SWB returns to higher levels of income, however. This suggests that the SWB “benefits” of having slightly higher income are greater for those who have low income than for those with high income (Frey and Stutzer 2002). Most of the research in this area has explored the relationship between income and cognitive well-being. A few analyses that have examined both cognitive and affective well-being have found income to be more closely correlated with cognitive than affective well-being (Diener et al. 2010; Kahneman and Deaton 2010). Still, these and other studies provide evidence for at least a weak relationship between income and affective well-being. Kushlev, Dunn, and Lucas (2015), for example, find higher income levels are correlated with less daily sadness (negative affect) but not more daily happiness (positive affect).

## ***4.2 Income Change and Subjective Well-Being***

Relatively few studies have investigated the link between individual income *change* and SWB. This line of research shows mixed results. Brickman, Coates, and Janoff-Bulman (1978) find no difference in self-reported happiness (positive affect) between major lottery winners and a sample of controls in Illinois. Gardner and Oswald (2007) conducted a similar study on medium-sized lottery winners in the United Kingdom (U.K.), focusing specifically on psychological distress. In contrast to Brickman et. al, they reported

significant reductions in psychological distress two years after a lottery win. Using data from the German Socio-Economic Panel (SOEP), Di Tella et al. (2010) find that changes in household income impact life satisfaction. Bayer and Juessen (2015) used data from the same survey and reported that persistent income shocks, but not transitory shocks, significantly impact life satisfaction. Luhmann and colleagues (2011) use data from the SOEP and the British Household Panel Survey to examine both life satisfaction and affective well-being (both positive and negative affect components). They find that while transient changes in income are related to transient changes in SWB, stable individual differences account for most of the relationship between income and SWB.

Much of the research on income change and SWB focuses solely on income gains or does not make a clear theoretical distinction between income gains and losses. These studies rely on statistical models that assume income change has a linear relationship with SWB, such that proportional gains and losses have an equal and opposite (i.e., symmetrical) impact on SWB.

A few studies have investigated the impacts of income gains exclusively using experimental data on income supports (Thoits and Hannan, 1979) and quasi-experimental data based on lottery winners (Brickman et al., 1978; Gardner and Oswald, 2007). However, these studies provide little clarity about the effects of income gains on SWB, as they report negative, null, and positive results.

There are good reasons to suspect that income loss would have a particularly pronounced impact on SWB, and that this impact would be especially pronounced for the negative components of SWB. There is an extensive literature demonstrating that negative life events increase psychological distress. Income loss is often tied to negative life events

such as divorce, disability, and job loss, all of which have been shown to impact SWB (Andreß and Bröckel 2007; Charles and Stephens, Jr. 2004; Young 2012). But a significant loss of income can be understood as a negative life event in and of itself, even net of the circumstances that caused it, because it often introduces a great deal of stress as households adapt to make ends meet. Negative events have a larger impact on individual mental health than positive events across a broad range of domains, and negative emotions tend to have a stronger and longer lasting effect than positive emotions (Baumeister et al. 2001; Thoits 2010). This is consistent with the economic theory of loss aversion, which maintains that individuals are more sensitive to material losses than gains (Tversky and Kahneman 1991).

Perhaps the most influential research on the topic of stress-inducing events is Holmes and Rahe's investigations of the health effects of what they call "social events" (Holmes and Rahe 1967; Rahe et al. 1964). Evidence suggesting that poor physical and mental health is more strongly associated with negative than positive events has led researchers to adapt the life events theory to focus exclusively on negative events. The concept of life events was a foundational contribution to a larger body of theory about the impact of "stressors" on physical and mental health (for a summary, see P. A. Thoits, 2010).

Di Tella et al. (2010) test the assumption of symmetry in relation to life satisfaction and find evidence that income losses have a larger effect on cognitive well-being than gains, although they report that the size of these effects appears to be small in magnitude. While income gains are generally positively associated with SWB, even they may raise psychological distress levels by threatening to disrupt individuals' usual activities, requiring substantial behavioral readjustment (Thoits and Hannan 1979). This suggests that the

assumption of a linear SWB-income change relationship may be particularly inappropriate when the dependent variable is change in negative affect.

An additional limitation of prior research on the relationship between income change and SWB is that it generally ignores the direct and indirect impacts of partners characteristics on household income and SWB. Partners who permanently reside in the same home have lives that are intricately interwoven such that the circumstances and well-being of one partner are often closely linked to those of the other partner. The health and employment status of one partner can impact the composition and division of resources (money, time, etc.) and duties (housework, caretaking, etc.) in a household. In addition to the direct emotional links between partners, these changes in household resources and responsibilities can impact the well-being of the other partner. Unemployment, for example, has “spillover effects” on the SWB of spouses that are independent of financial impacts (Inanc 2018; Liem and Liem 1988; Marcus 2013; Qian and Qian 2015). The same is true of involuntary job loss (Bubonya et al. 2017; Siegel et al. 2003).

### ***4.3 Data and Methods***

In order to analyze changes in both income and SWB over time, I use eight waves of data from the Panel Study of Income Dynamics (PSID) between the years 2001 and 2017. The PSID is a nationally-representative survey of U.S. households, including an oversample of low-income households. During the years included in this study, the survey was administered biennially. To allow examination of change between panel waves, this study includes only years in which all time-variant variables are present for the current and prior waves. Therefore, respondents who entered the PSID sample in 2017 are excluded. In order

to exclude retirement- and college-aged individuals, the study is limited to adults between the ages of 22 and 64.

The PSID includes information about all household members regardless of who the survey respondent is in a particular wave. That is, whoever responds to the survey in a given wave is asked to provide information about all other household members. Given the subjective nature of the well-being variables, however, those questions are only asked of the survey respondent. Therefore, this analysis is limited to respondents. Because the household member responding to the survey may vary from wave to wave within the same household, individuals in this analysis are less likely to be present in all survey waves than if the analysis were not limited to survey respondents.

Of the 6,220 respondents in this study in 2001, 2,407 (45.7 percent) were captured in every subsequent wave. An additional 6,970 entered the sample after 2001. Fewer than half (6,086) of the total sample of 13,190 attrited, aged out, or missed a wave after entering, and 2,781 (45.7 percent) of those were excluded entirely because they were not measured in two consecutive survey waves. Of the 10,951 respondents surveyed in at least two consecutive waves, 6,271 (57.3%) were present in all waves following entry into the sample, and most respondents were recorded in at least five of the eight first-differenced waves. Because data on cognitive well-being was collected beginning in 2009, and data on affective well-being was not collected in 2005, there are six first-differenced waves that include affective well-being data from the current and prior waves and four such waves with cognitive well-being data. Most respondents included in both the affective and cognitive well-being analyses are present in at least half of the waves for which the corresponding well-being data is available.



I exclude respondents whose household income falls in the top or bottom one percent of the weighted sample. This excludes outliers, such as top-coded and negative incomes, which sidesteps the issue of whether and how to adjust such values and provides more reliable estimated variances.

### **4.3.1 Subjective Well-Being Measures**

The PSID uses the K-6 Non-Specific Psychological Distress scale to measure affective well-being. This measure is not designed to capture positive affect, so the present analysis is limited to negative affect. The K-6 scale is based on six questions about the frequency of experiencing negative feelings in the prior month. Each question uses a five-point scale ranging from “all of the time”—recorded as “1”—through “none of the time”—recorded as “5”. I sum the values for each of the six items to generate a scale ranging from 6 to 30, then standardize the result so that each integer value indicates the number of standard deviations from the sample mean. This allows for a more direct and intuitive comparison with cognitive well-being. Affective well-being in the prior wave (t-2) is subtracted from “current” (t) affective well-being to measure change in affective well-being.

Beginning in 2009, the PSID survey has included the following question, “Please think about your life as a whole. How satisfied are you with it?” Possible responses range from “completely satisfied”—coded as “5”—to “not at all satisfied”—coded as “1”—and are standardized. Change in cognitive well-being is measured as the difference in this life satisfaction variable between the “current” and prior panel wave.

### 4.3.2 Income Measures

Total household income is the sum of all prior-year taxable, social security, and private and public transfer income from all family members, converted to 2016 dollars. Income values are bottom-coded at \$5,000. Using the resulting values, percent income change is calculated as:

$$\frac{x_t - x_{t-1}}{x_{t-1}}$$

where  $x_t$  represents income recorded in a given wave and  $x_{t-1}$  represents income recorded in the prior wave. Bottom coding reduces the impact of changes in income that are small in absolute terms, but very large in percentage terms. Without bottom coding, for example, a change of income from \$300 to \$6,000 would indicate a 1,900% increase—equivalent to an increase from \$50,000 to \$1 million. With bottom coding, this change is measured as only a 20% increase, which would correspond with an increase from \$50,000 to \$60,000. Bottom-coding impacts less than two percent of the sample after respondents with incomes in the lowest and highest one percent are removed. However, it reduces the mean and standard deviation of the income change variable by 23% and 41%, respectively. This indicates that, without bottom coding, these relative outliers would skew the distribution. Additional analyses reveal that bottom coding does not substantively or significantly impact results.

### 4.3.3 Modeling Strategy

To eliminate the bias influence of person-specific unobserved, time-invariant variables, I utilize the following first-difference model:

$$\Delta y_{it} = \beta_0 + \beta_1 \Delta x_{it} + \beta_2 \Delta Z_{it} + \beta_3 T + \Delta u_{it}$$

where change in SWB ( $\Delta y$ ) for individual  $i$  between year  $t$  and the prior survey wave ( $t-2$ ) is estimated as a function of change in household income ( $\Delta x_{it}$ ). To estimate the coefficients for income gains and income losses separately, I use a spline function with a knot at zero. I then take the absolute value of negative income changes so that the income loss coefficient captures the relationship between SWB and income loss more intuitively. That is, if income losses negatively impact SWB, it makes more sense for this coefficient to be negative.  $Z$  represents a series of time-varying controls. Year dummies ( $T$ ) are included to control for exogenous year-to-year changes. This is especially important because the timeframe of this study includes two macroeconomic recessions and two expansions. I employ generalized least squares to account for the correlation in the error terms across years. Given the small number of years in the sample ( $T < 10$ ), I allow the error correlation matrix to be unstructured (Allison 2009).

This modeling strategy does not fully eliminate the possibility of reverse causation. There is longitudinal evidence that positive affect in one time period is associated with subsequent increases in income (Lyubomirsky et al. 2005). However, Luhmann, Schimmack, and Eid (2011) find that this relationship is primarily driven by stable individual differences rather than within-person changes in SWB. That the income variables are based on prior-year income while the SWB variables are based on well-being at the time of the interview or in the month leading up to it provides some reassurance against reverse causation. This lag between the independent and dependent variables, however, likely weakens their statistical relationship because recent income probably has a larger impact on recent SWB than prior-year income. Therefore, the estimates of the impact of income change on SWB in the present

study are likely conservative. The discussion towards the end of this chapter considers this and other limitations of the PSID in more detail.

#### **4.3.4 Control Variables**

Time-varying controls are included for the purpose of isolating the effect of income changes. Marital status is captured as a series of binary variables indicating whether the respondent is currently married, divorced, separated, or widowed (the reference category is never married). Number of children is measured as the number of individuals living in the family unit under the age of 18. Dummy variables indicate whether the respondent is employed, unemployed, or out of the labor force (not employed and not currently looking for work). Additional employment controls include whether the respondent experienced involuntary job loss in the prior year or worked fewer than 20 hours per week on average, as well as the number of weeks they missed due to unemployment, illness, or needing to care for other sick people. Self-rated health is based on responses to the question, “Would you say your health in general is excellent (5), very good (4), good (3), fair (2), or poor (1)?” An additional dummy indicator is included to distinguish permanent disability from other reasons for being out of the labor force.

All control variables are first-differenced to capture changes from one wave to the next. I include an additional control for changes in household wealth that is measured the same as income change (although wealth gains and losses are not estimated separately). I do not include an age variable because it would be collinear with year after first-

differencing. Because the employment dynamics of spouses<sup>8</sup> may have direct and indirect effects on both income and the SWB of respondents, I also run analyses limited to partnered respondents that include controls for the employment and health of partners. Because of limitations in the survey data, gender is treated as binary and only different-sex couples are included in analyses of partnered respondents.

#### **4.4 Results**

Table 4 offers descriptive statistics on income and well-being across sample subgroups. Because losses cannot exceed 100 percent while income gains can be many times larger, the first difference for the full sample is skewed upward. The mean income change is a 24.8% gain, whereas the median income change (not shown) is only a 0.2% gain. Respondents 22-30 years old have lower incomes than their older counterparts, and experience larger income gains between survey waves. This is consistent with the parabolic shape of household income growth recognized in the life course literature.

Mean affective well-being in the sample is 26.7 (out of a maximum of 30), indicating respondents generally report low levels of psychological distress. Mean cognitive well-being is 3.8, suggesting the typical response to the life satisfaction question is “very satisfied.” Men and women have the same cognitive well-being, but—consistent with the literature on gender and mental health—women have higher levels of psychological distress. Women’s household incomes are 16.7% lower than men’s. Among racial groups, Black respondents have the lowest income (less than half the mean income for whites), as well as the lowest affective and cognitive well-being. Latinx respondents have much lower incomes than white

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<sup>8</sup> Although partners are either married or permanently cohabiting, I use the terms spouse and partner interchangeably.

respondents, while their mean level of affective well-being is about the same and their cognitive well-being is slightly higher.

**Table 4: Weighted sample means and first differences.**

	Household income (thousands)		Affective well-being (6-30)		Cognitive well-being (0-5)		Sample size
	Mean	First diff. (%)	Mean	First diff.	Mean	First diff.	n
<b>Full sample</b>	\$93.90	24.8	26.7	0.02	3.8	0.03	10,951
<b>Age group</b>							
22-30	\$59.10	47.4	26.2	0.01	3.79	0.03	2,413
31-40	\$94.20	25.7	26.6	0	3.82	0.03	2,812
41-50	\$110	17.8	26.8	0.05	3.8	0.03	2,157
51-64	\$103.30	15.1	27	0.03	3.78	0.03	3,570
<b>Gender</b>							
Men	\$102.80	27	27.1	0	3.78	0.04	4,369
Women	\$86.70	23	26.4	0.05	3.81	0.02	6,583
<b>Race</b>							
White	\$104.80	23.7	26.7	0.03	3.82	0.03	5,618
Black	\$51.80	29.2	26.3	0.11	3.63	0.03	3,858
Latinx	\$66.60	26.1	26.8	-0.1	3.91	0.05	874
<b>Marital status</b>							
Married	\$123	16.8	27.3	-0	3.99	0.02	5,933
Single	\$46.90	36.1	25.9	0.02	3.54	0.03	2,599
Widowed	\$56.80	15.4	25	0.49	3.35	0.15	299
Divorced	\$54.30	18.8	26.1	0.1	3.5	0.06	1,600
Separated	\$46.80	19.7	24.8	0.02	3.43	0.05	521
<b>Employment status</b>							
Employed	\$105.20	23.3	27.2	0.05	3.85	0.03	7,886
Unemployed	\$36.40	21.6	24.9	-0.3	3.36	0.01	853
OLF	\$67.80	25.9	25.1	0.08	3.75	0	2,212

Data from PSID (2001-2017)

Married individuals have the highest incomes and SWB among all subgroups.

Widowed and separated respondents have the lowest SWB and separated and single

respondents each have 50% less income than the sample mean. Regarding employment status, those who are unemployed have the lowest income and SWB. Those who are out of the labor force have nearly twice the income of the unemployed and their cognitive well-being is close to average for the full sample, but they report similar affective well-being to the unemployed. Employed respondents are better off by all three measures with nearly three times the income of the unemployed.

**Table 5: First difference regression of standardized subjective well-being on income change—full sample.**

	Affective well-being				Cognitive well-being			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Income loss	-0.035+ (0.019)	-0.020 (0.019)	-0.005 (0.020)	0.013 (0.019)	-0.092*** (0.024)	-0.038 (0.024)	-0.036 (0.025)	-0.024 (0.024)
Income gain	0.003 (0.002)	0.001 (0.002)	-0.000 (0.002)	-0.000 (0.002)	0.008** (0.002)	0.004+ (0.002)	0.003 (0.002)	0.003 (0.002)
Controls:								
Household characteristics		Yes	Yes	Yes		Yes	Yes	Yes
Employment			Yes	Yes			Yes	Yes
Health				Yes				Yes
Household wealth				Yes				Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.048*** (0.012)	0.047*** (0.012)	0.048*** (0.012)	0.050*** (0.012)	0.104*** (0.013)	0.099*** (0.013)	0.097*** (0.013)	0.099*** (0.013)
Respondents	10,670	10,670	10,670	10,670	8,994	8,994	8,994	8,994
Person-years	38,017	38,017	38,017	38,017	26,261	26,261	26,261	26,261

Standard errors in parentheses. Full results in the appendix.

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.1$

Table 5 shows the results of the first-difference analyses on the impact of income change on SWB in the full sample. In Models 1 and 5, changes in affective and cognitive well-being are regressed on income change. The only controls are year dummies (or year fixed effects) that eliminate the confounding influence of exogenous unobserved influences on income and well-being that are specific to each year in the analysis. The income change coefficients are only significant in the cognitive well-being model, and the magnitude of the income loss coefficient (-0.092) is over ten times larger than that of the income gain coefficient (0.008). As soon as additional controls are added, however, these coefficients shrink and become insignificant, as the remaining models show.

The story is quite different when limiting analysis to married or permanently cohabiting respondents. Table 6 presents results of first-difference analyses on the impact of income change on SWB among this subsample. As with Table 5, Models 1 and 5 include only year dummies as controls. Models 2 and 6 add controls for the number of children in the household and the current and prior-year labor force participation of the respondent. Models 3 and 7 add controls for spouse's labor force participation, spouse's health, and household wealth. Finally, Models 4 and 8 add controls for the health of the respondent.

Among partnered respondents, income loss is negatively associated with both affective and cognitive well-being, and these associations are significant across all eight models. The income loss coefficient for affective well-being ranges from -0.079 in the baseline model (1) to -0.064 in the full model (4), indicating that the inclusion of all controls reduces the income loss coefficient by nearly 20%. These coefficients estimate how much a 100% income loss decreases well-being, measured in standard deviation units. To put this



in perspective, the estimated effect of unemployment is roughly four times larger, and the effect of moving from “good” self-reported health to “fair” health is roughly three times larger, than a 50% decrease in income.

**Table 6: First difference regression of standardized subjective well-being on income change—partnered adults.**

	Affective well-being				Cognitive well-being			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Income loss	-0.079** (0.030)	-0.076* (0.031)	-0.072* (0.031)	-0.064* (0.031)	-0.119** (0.040)	-0.121** (0.040)	-0.120** (0.041)	-0.119** (0.041)
Income gain	0.002 (0.004)	0.002 (0.004)	0.001 (0.004)	0.001 (0.004)	0.002 (0.006)	0.001 (0.006)	-0.000 (0.006)	0.000 (0.006)
Household characteristics controls		Yes	Yes	Yes		Yes	Yes	Yes
Labor force participation controls		Yes	Yes	Yes		Yes	Yes	Yes
Health controls				Yes				Yes
Spouse controls			Yes	Yes			Yes	Yes
Household wealth			Yes	Yes			Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.033* (0.015)	0.037* (0.015)	0.039** (0.015)	0.039** (0.014)	0.111*** (0.016)	0.110*** (0.016)	0.114*** (0.016)	0.115*** (0.016)
Respondents	6,215	6,215	6,215	6,215	4,893	4,893	4,893	4,893
Person-years	19,258	19,258	19,258	19,258	12,954	12,954	12,954	12,954

Standard errors in parentheses. Full results in the appendix.

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

The coefficient for income gains is close to zero in every model. The impact of income loss on the psychological distress of partnered individuals, therefore, seems to be relatively modest, while income gains do not seem to impact this group's affective well-being at all.

The estimated effects of income loss on cognitive well-being are larger. In the baseline model (5), the coefficient is -0.119, and it does not reduce with the addition of control variables—the coefficient remains identical in the full model (8). The estimated impact of income loss on cognitive well-being is 86% larger than its impact on affective well-being after controlling for potential confounders. By comparison, the estimated effect of unemployment on cognitive well-being is 2.4 times larger, and the effect of moving from “good” self-reported health to “fair” health is only 1.3 times larger, than the estimated effect of a 50% income loss. The coefficient for income gains is very close to zero in all models. This suggests that the impact of income loss—but not income gain—on life satisfaction is qualitatively meaningful for partnered individuals. The larger effects of income loss on cognitive than affective well-being is consistent with previous findings (Diener et al. 2010; Kahneman and Deaton 2010).

Overall, these results are consistent with the theory of loss aversion as the effects of income change on both affective and cognitive well-being seem to be asymmetric. However, this finding is limited to partnered adults as neither income loss nor income gain are significantly associated with SWB in the full sample.

## **4.5 Discussion**

The purpose of this study is to investigate whether income change is associated with changes in cognitive and affective measures of SWB. I consider both increases and decreases in income on measures of life satisfaction and psychological distress. I test whether losses in income are associated with larger changes in SWB than are income gains among working-age Americans using a combination of first-difference estimation and spline regression. I separately analyze the income change-SWB relationship among partnered adults and control for employment and health characteristics of partners. My results provide evidence that, among coupled adults, the effects of income change on SWB are asymmetric: income losses significantly reduce both affective and cognitive well-being, but I find no evidence that income gains effect either measure of SWB. That is, while more money may not always buy “happiness,” less money can, it seems, make couples sadder and less satisfied with their lives. Future research should therefore not assume symmetry in the relationship between income change and SWB change. Doing so exaggerates the roles of positive income changes and positive measures of SWB. More research is also needed to explore moderating factors that make couples particularly susceptible to decreases in SWB following income loss.

The lack of evidence for an impact of income change on SWB in the full sample after controlling for employment status and other time-varying characteristics is consistent with findings using the 2001 and 2003 waves of the PSID (Young 2012). Despite the PSID’s longitudinal design and extensive list of variables related to labor force participation and finances, there are two aspects of the study that make it suboptimal for capturing short-term effects of income change on SWB. First, the survey is administered biennially. It is

likely that change in SWB is better predicted by change in income from one year to the next than income change between two-year intervals. There is substantial evidence that respondents adapt to changes in income such that the effects of income change on SWB diminish with time (Frey and Stutzer 2002; Di Tella et al. 2010). Moreover, the survey does not capture data on income in the year between waves, so more recent fluctuations in income cannot be incorporated in analyses of the income change-SWB relationship.

Adaptation relates to the second temporal limitation of the PSID data: income data refer to prior-year income while SWB data refer to well-being at the time the survey is administered or in the month leading up to it. This means there are typically several months separating the SWB and income measures within the same survey wave—time in which respondents may adapt to prior changes in income. While this is good for establishing temporal order for causal inference, it likely produces overly conservative estimates of the short-term effects of income change on SWB both because of adaptation and because incomes may change in the intervening months. For example, if a respondent's household income decreased between 2014 and 2016, but then returned to its previous level in the months before the survey was administered in 2017, the respondent's SWB may reflect a return to some baseline level of SWB or even an increase in SWB from this baseline if they had already adapted to their lower level of income in 2016 before their income rebounded in 2017. In this case, the income loss coefficient would be of smaller magnitude and the standard errors would be larger than if the independent and dependent variables were contemporaneous. The reverse of this scenario is equally plausible, indicating that both the income loss and income gain coefficients represent conservative estimates of the effects of income change on SWB.

In addition to the limitations of the PSID data, it is likely that some of the control variables also downwardly bias my estimates. Income influences physical health, for example, which influences mental health (Assari, Burgard, and Zivin 2015). Controlling for self-rated health may then suppress the income change coefficients.

While these limitations may help explain why income change is not significantly associated with SWB change in the full sample, they do not explain why income loss is significantly correlated with SWB changes among partnered adults. There are a few reasons we might expect the well-being of people in couples to be more responsive to changes in income. To the extent that individuals' own SWB is impacted by that of their partners, changes in life circumstances that impact both partners may lead to a reverberation effect where the impact on each partner's SWB is amplified. A study of dual-earner couples in The Netherlands shows that work and family demands on each partner contribute to their own distress and spill over to their partner, increasing their partner's distress as well (ten Brummelhuis et al. 2010). Because resources are typically pooled within households, one partner may be able to offset a reduction in income from the other partner by entering the workforce, picking up extra hours, or working additional jobs (Stephens 2003). This means couples may be somewhat buffered from experiencing income losses in the first place, and those who do experience income loss may experience particularly high levels of financial and relationship strain. Unemployment, job displacement, and financial strain have been found to reduce relationship satisfaction and increase spousal conflict and likelihood of divorce (Broman, Hamilton, and Hoffman 1990; Charles and Stephens, Jr. 2004; Vinokur et al. 1996). While only couples who remain partnered in two subsequent survey waves are included in this subsample, the PSID does not regularly ask questions about relationship

satisfaction or conflict. Couples who experience income loss may be more likely experience relationship strain that then reduces each partner's SWB.

Given these considerations, it would be inappropriate to conclude from the present analyses that income change does not impact the SWB of single adults. It would also be incorrect to assume that the finding of asymmetric effects of income loss on SWB among coupled adults extends to single adults. This study does, however, provide evidence that income loss has a larger impact on coupled than single adults. Further research could provide a more detailed explanation for why the well-being of people in couples seems to be particularly responsive to income losses.

## 5. Conclusions

Each of the three preceding studies examines a different aspect of how political inequality, economic insecurity, and psychological well-being interconnect in the United States. Each uses a different methodological approach and leverages insights from multiple social science disciplines.

In this dissertation, I explore whether economic power in the form of household income translates into political power by investigating the relative policy influence of different income groups. I propose and compare a new method of measuring relative policy influence (Chapter 2). I also look at how economic insecurity in the form of household employment (Chapter 3) and income (Chapter 4) dynamics impacts psychological well-being, and how these effects are patterned by gender and cohabitation.

Chapter 2 evaluates whether the policy preferences of affluent Americans override those of average Americans. Studies of the relative policy influence of income groups often focus on issues over which high- and middle-income Americans disagree. However, scholars have implemented different ways of both defining policy disagreement and measuring relative policy influence. This has yielded conflicting findings. To adjudicate between these contradictory findings, I assess the impact of 22 definitions of policy disagreement and two methods of measuring policy influence—based on win rates and policy change rates—on analyses of unequal responsiveness. My methodological findings indicate that win rates are an unreliable measure of relative policy influence and that comparing policy change rates across cases of agreement and disagreement offers a more valid measure. My substantive

results support previous findings that the affluent have substantial influence over policymaking while average Americans have little to no independent influence.

Chapter 3 examines gendered effects of unemployment on the subjective well-being (SWB) of different-sex couples in the United States. In addition to estimating the SWB impacts of unemployment on those directly impacted, I look at how the effects of unemployment may “spill over” from unemployed individuals to their partners. This study provides strong evidence that the SWB effects of unemployment among U.S. couples is heavily gendered. Men are more negatively impacted by their own unemployment than women are, and while husbands’ unemployment is negatively associated with wives’ well-being, I find no evidence that wives’ unemployment spills over to impact husbands’ cognitive or affective well-being. These results generally hold even when the wife is the primary earner, and across different combinations of partners’ employment statuses. This provides evidence that the SWB effects of unemployment among U.S. couples are significantly shaped by the degree of conformity with or deviation from the male breadwinner model.

Chapter 4 assesses whether and how people who experience income change experience changes in psychological well-being. Prior to this research, the literature has generally treated the effects of income gains and losses on SWB as symmetric, such that gains benefit well-being to the same extent that losses harm it. Drawing from the theory of loss aversion, I investigate possible asymmetry in this relationship. My results support the asymmetry hypothesis—income losses are more strongly related to changes in SWB than income gains are. In fact, the association between income gains and SWB changes is not statistically significant while the coefficients for income losses on affective and cognitive



well-being remain significant after controlling for potential confounders. Income loss seems to impact cognitive well-being (life satisfaction) more than affective well-being (psychological distress). However, these findings are limited to married or permanently cohabiting adults—neither income gains nor losses are associated with changes in well-being in the full sample after controlling for other factors.

This dissertation advances current debates at the intersection of sociology, political science, economics, and psychology about disparities of money, power, and well-being. It offers novel insights into the ways economic power and vulnerability shape the subjective and material realities of life for individuals and families in the United States. Understanding the interrelated dynamics of political inequality, economic insecurity, and subjective well-being is critical to addressing deeply entrenched inequities in our society and improving quality of life for its most vulnerable members.

## **Appendix for Chapter 2**

### ***A2.1: Majoritarian Policy Change Rates***

Based on win rates, Bashir (2015) and Branham, Soroka, and Wlezien (2017) use the majoritarian preference threshold without a defined preference gap and find that the affluent and middle win with roughly the same frequency (adding a 10pp preference gap criterion yields a larger difference between middle- and high-income win rates, though this difference is still not statistically significant). Employing policy change rates, however, produces different results.

Considering the ways status quo bias impacts win rates, Branham, Soroka, and Wlezien (2017) employ policy change rates (“passage rates”) as an alternative approach to measuring policy influence. They find that “If a majority of the rich favor a policy and a majority of the middle oppose it, the policy is adopted 37 percent of the time; by contrast, when the middle favor a policy and the rich are opposed, the policy is adopted 26 percent of the time. The difference also is statistically significant...”

The authors conclude from this finding that “Although the rich do slightly better here, they clearly do not dominate the middle.” However, they do not provide criteria for what would constitute domination. There is no basis for assessing the substantive magnitude of this 11pp difference in policy change rates without some kind of counterfactual comparison. If, for example, policy change occurs 26 percent of the time that both income groups oppose policy change (the same as the rate when the middle favor the policy and the affluent oppose it), this would imply that middle-income support for policy change does not increase the likelihood of policy change at all. While Branham and

colleagues' finding clearly indicates unequal representation, there is no support (or counterevidence) for their claim that the affluent do not dominate the middle.

Calculating policy change rates in cases of agreement provides evidence that the affluent do, in fact, dominate the middle. The policy change rate is 22.9% when neither group prefers change and 39.4% when both prefer change. Compared to the rate when both groups oppose change, the rate is significantly higher (13.6pp) when the affluent support change, but not when the middle support change (2.7pp). Conversely, the difference in policy change rates between cases where both groups support change and cases where one group opposes change are significant when it is the affluent opposing change (-13.8pp) but not when the middle oppose change (-2pp). This is consistent with theories of economic elite domination Gilens's finding that while the affluent wield significant positive and negative policy influence, the middle do not.

Branham, Soroka, and Wlezien incorporate the poor into one of their analyses and again find evidence of unequal representation. In this analysis, they include the policy change rates for instances where all three income groups support or oppose policy change, providing a useful counterfactual comparison. The results are again consistent with theories of economic elite domination. When the affluent alone favor policy change, change is enacted 38.5% of the time. This figure is comparable to the 40% policy change rate when all three groups favor policy change and significantly higher than when all three groups oppose change. Similarly, when only the affluent *oppose* change, the policy change rate (20.4%) is not statistically different from the rate when all three groups oppose change (23.8%), and this rate is significantly lower than when all three groups support change. This seems to suggest that the preferences of the affluent override those of the middle and the poor.

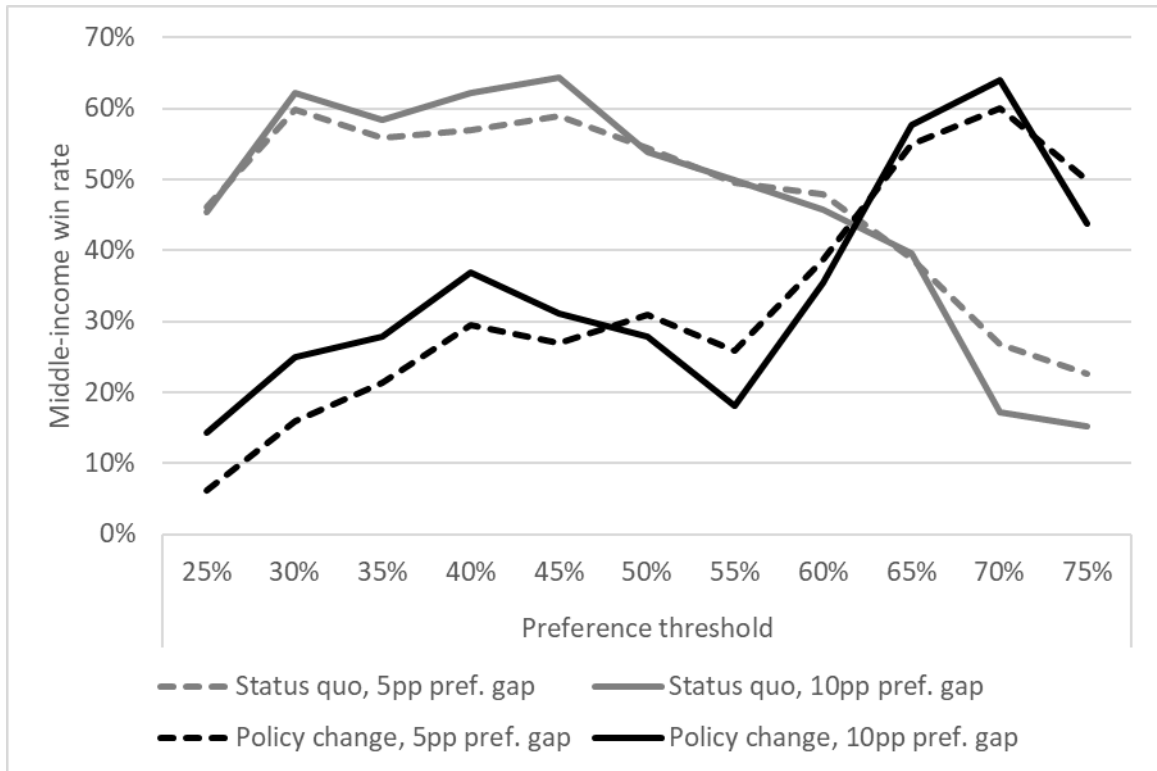
Despite this evidence, however, the authors again dismiss the notion that the affluent dominate policymaking, arguing that “There are inequalities to be sure, but they are limited.” This conclusion is based on comparisons with policy change rates when the middle disagree with both the affluent and poor; a relatively rare occurrence. There are only 40 cases of this, which represents less than 3% of all observations in the data set and only 11.4% of cases of disagreement. For comparison, there are 145 cases where the affluent disagree with the other two groups and 167 cases where the poor disagree.

We are limited in the conclusions we can confidently draw from these cases. The difference in policy change rates when the middle alone favor change and when all three groups oppose change is not statistically significant. The rate when all three groups favor change is also not significantly different from the rate when only the middle oppose change.

Branham, Soroka, and Wlezien provide insufficient evidence for their conclusions that the middle have only slightly less influence than the affluent and that the affluent do not dominate policymaking. Rather, the available evidence is more consistent with the opposite conclusions. Moreover, these results suggest that while the definitions of disagreement used by Gilens and his critics produce contradictory findings based on win rates, they produce findings based on policy change rates that consistently support the unequal responsiveness hypothesis.

## ***A2.2: Win Rates by Policy Outcome***

Appendix Figure 1 provides additional evidence that win rates are an unreliable measure of relative influence, precisely because they are conditional on which income group prefers the status quo versus policy change. The black lines represent middle-income win rates in cases of disagreement over a proposed policy change when the change was in fact implemented. Worded differently, the black lines represent the proportion of *enacted* policy changes that were preferred by the middle and opposed by the affluent. The grey lines represent the corresponding win rates when the policy change was *not* enacted. That is, the grey lines represent the proportion of *unimplemented* policy changes that were opposed by the middle and preferred by the affluent.



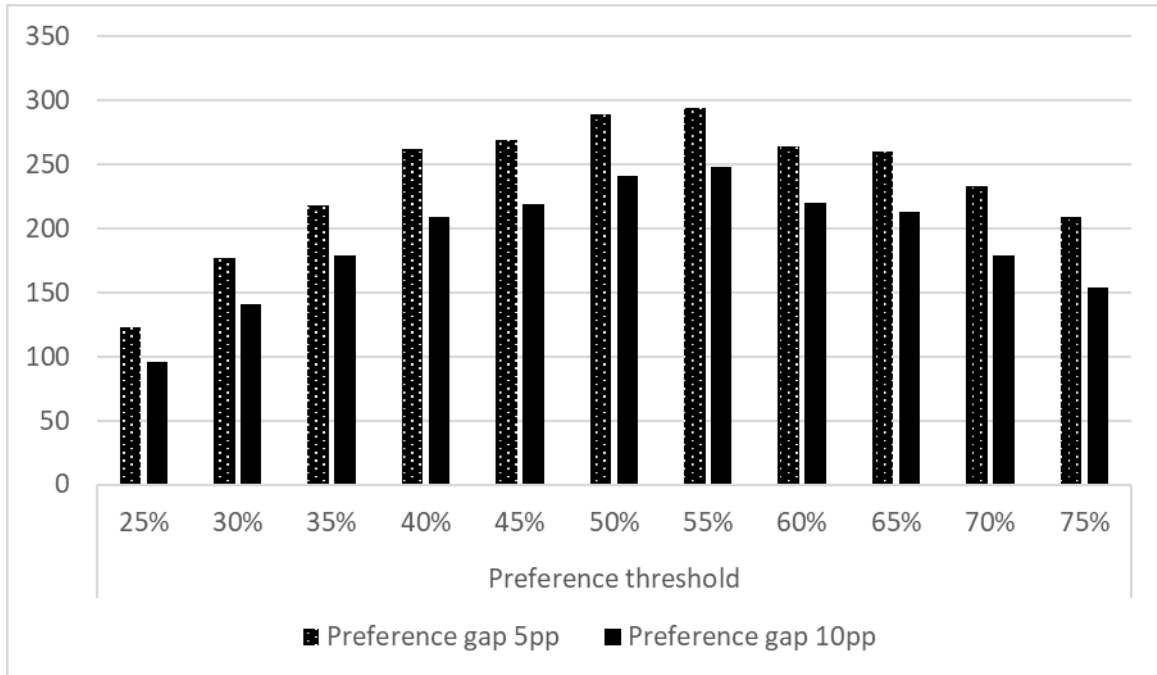
**Appendix Figure 1: Middle-income win rates vary by policy outcome.**

The win rates for the middle-income group vary considerably based on whether policy change was implemented, or the status quo was maintained. Using a 10pp preference gap and a majoritarian absolute preference threshold, the middle wins roughly 54% of the time that the status quo is maintained but only 28% of the time when policy change is implemented. A large majority (78%) of all middle-income wins using this disagreement measure are instances when the status quo was maintained. This reflects the fact that, using this definition, the middle tend to prefer the status quo much more than the affluent.

When the middle do prefer policy change, they are far less likely to see it implemented. Combining the 10pp preference gap with a popularity-based (75 percent) preference threshold, the middle win 44% of the time that policy change occurs. This

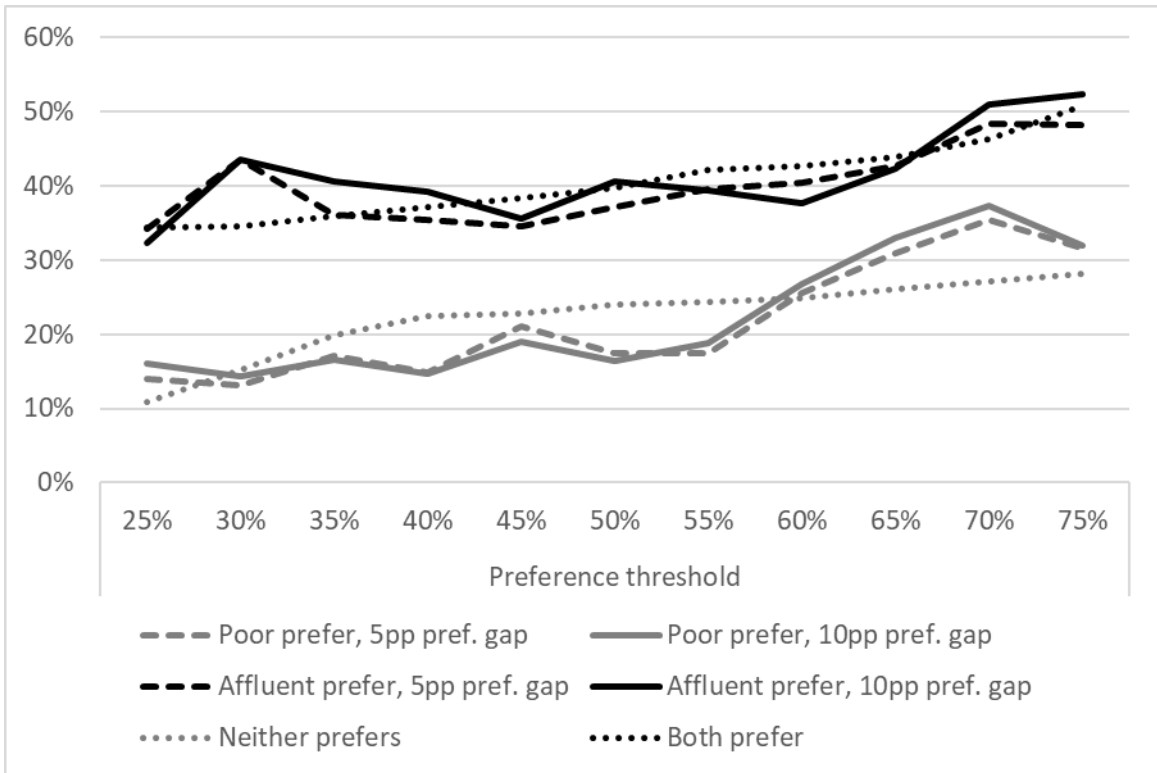
indicates that a majority of the policy changes that were actually implemented were those preferred by the affluent. As Figure 6 shows, the middle prefer policy change in 71% of cases of disagreement using this definition. So even though the affluent prefer policy change less than half as often as the middle using this definition of disagreement, more of their preferred policies are enacted. This provides additional evidence that the affluent are much more likely to see their preferred policy changes enacted.

### A2.3: Affluent-Poor Analyses

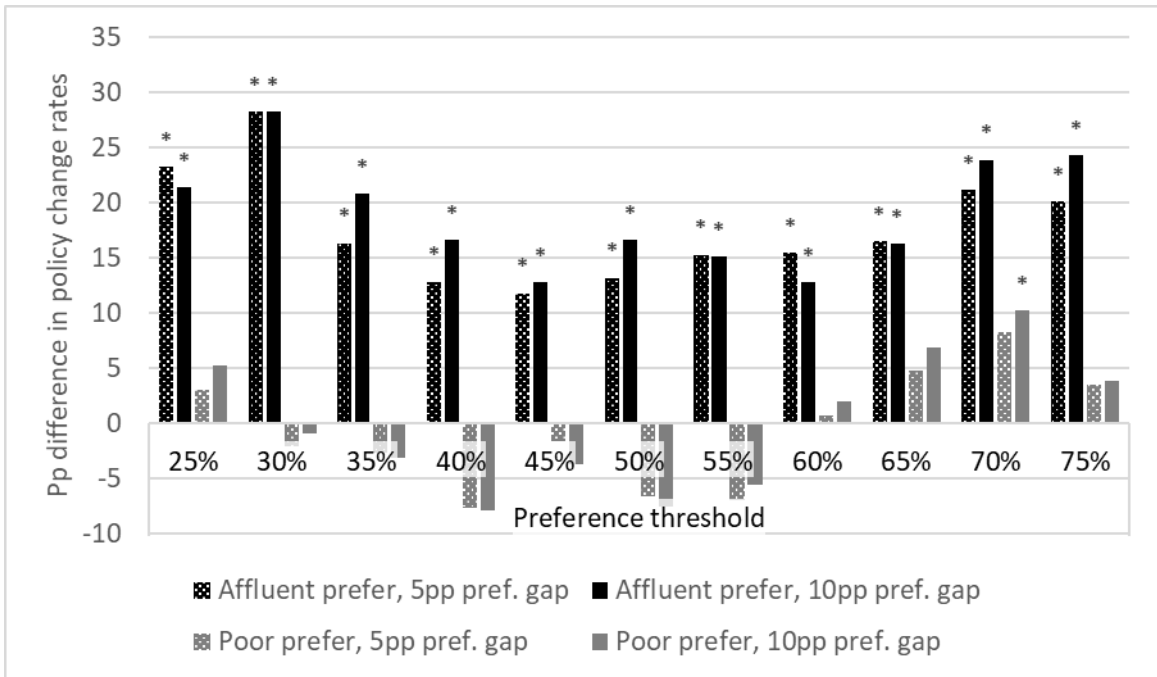


Appendix Figure 2: Number of cases of affluent-poor disagreement by preference threshold and preference gap.

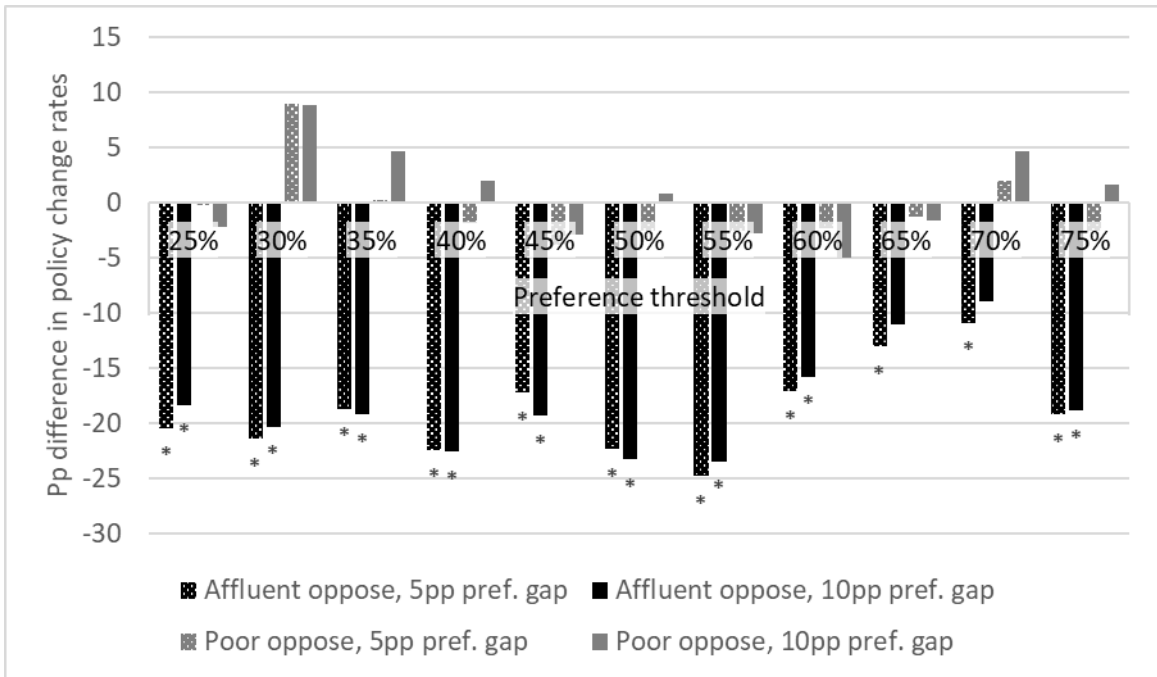




**Appendix Figure 3: Policy change rates are similar whether the poor agree or disagree with the affluent.**



**Appendix Figure 4: Policy change rates are higher when only the affluent prefer change than when neither group prefers change.**



**Appendix Figure 5: Policy change rates are lower when only the affluent oppose change than when both groups prefer change.**

## Appendix for Chapter 3

**Appendix Table 1: Within-person fixed effects estimates of the impact of unemployment on the affective well-being of wives and husbands.**

	Wives			Husbands		
	(1)	(2)	(3)	(1)	(2)	(3)
Unemployed - <i>self</i>	-0.123*** (0.029)	-0.117*** (0.028)	-0.117*** (0.028)	-0.182*** (0.029)	-0.184*** (0.029)	-0.182*** (0.029)
Unemployed - <i>spouse</i>	-0.080** (0.028)	-0.075** (0.028)	-0.073** (0.028)	-0.000 (0.033)	-0.002 (0.033)	0.001 (0.033)
Out of labor force - <i>self</i>	-0.095*** (0.018)	-0.051** (0.018)	-0.048** (0.019)	-0.104*** (0.030)	-0.051 (0.032)	-0.040 (0.032)
Out of labor force - <i>spouse</i>	-0.013 (0.026)	0.006 (0.028)	0.011 (0.029)	-0.004 (0.018)	0.005 (0.019)	0.011 (0.019)
Part-time in prior year - <i>self</i>	-0.000 (0.017)	0.002 (0.017)	0.003 (0.017)	-0.000 (0.028)	0.012 (0.028)	0.017 (0.028)
Part-time in prior year - <i>spouse</i>	-0.062* (0.026)	-0.065* (0.026)	-0.063* (0.026)	-0.022 (0.019)	-0.023 (0.019)	-0.019 (0.019)
Weeks of work missed in prior year						
Unemployed - <i>self</i>	0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)
Unemployed - <i>spouse</i>	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Caring for sick person - <i>self</i>	-0.010* (0.004)	-0.010* (0.004)	-0.010* (0.004)	-0.021** (0.007)	-0.019** (0.007)	-0.019** (0.007)
Caring for sick person - <i>spouse</i>	-0.010 (0.007)	-0.005 (0.007)	-0.005 (0.007)	-0.011* (0.005)	-0.010* (0.005)	-0.010* (0.005)

Sick - <i>self</i>	-0.002 (0.002)	-0.002 (0.002)			-0.005+ (0.003)	-0.005+ (0.003)
Sick - <i>spouse</i>	0.002 (0.002)	0.002 (0.002)			-0.002 (0.003)	-0.002 (0.003)
Current health variables						
Work disability - <i>self</i>	-0.400*** (0.049)	-0.396*** (0.049)			-0.174** (0.058)	-0.170** (0.058)
Work disability - <i>spouse</i>	-0.055 (0.046)	-0.055 (0.046)			-0.163** (0.055)	-0.161** (0.055)
Self-rated health - <i>self</i>	0.140*** (0.009)	0.139*** (0.009)			0.087*** (0.010)	0.087*** (0.010)
Self-rated health - <i>spouse</i>	0.022* (0.009)	0.022* (0.009)			0.019* (0.009)	0.019* (0.009)
Household finances						
Log of family income		0.008 (0.014)				0.032* (0.015)
Zero or negative wealth		-0.104*** (0.020)				-0.063** (0.022)
Homeowners		0.002 (0.021)				-0.007 (0.023)
Children in home	0.017* (0.007)	0.014+ (0.007)	0.011 (0.007)	0.007 (0.008)	0.007 (0.008)	0.005 (0.008)
Year fixed effects						
2001	-0.096*** (0.024)	-0.168*** (0.024)	-0.160*** (0.024)	-0.134*** (0.025)	-0.177*** (0.025)	-0.167*** (0.025)
2003	-0.075** (0.023)	-0.143*** (0.023)	-0.136*** (0.023)	-0.111*** (0.024)	-0.150*** (0.024)	-0.140*** (0.025)
2007	-0.008 (0.021)	-0.055** (0.021)	-0.051* (0.022)	-0.054* (0.023)	-0.079*** (0.023)	-0.073** (0.023)

2009	-0.039+	-0.073***	-0.065**	-0.116***	-0.132***	-0.124***
	(0.021)	(0.021)	(0.021)	(0.022)	(0.022)	(0.022)
2011	0.007	-0.017	-0.008	-0.064**	-0.077***	-0.068**
	(0.021)	(0.021)	(0.021)	(0.022)	(0.022)	(0.022)
2013	0.006	-0.011	-0.003	-0.055*	-0.068**	-0.061**
	(0.020)	(0.020)	(0.020)	(0.022)	(0.022)	(0.022)
2015	0.046*	0.035+	0.039*	-0.001	-0.008	-0.004
	(0.020)	(0.020)	(0.020)	(0.021)	(0.021)	(0.021)
2017 (reference)	-	-	-	-	-	-
Intercept	0.125***	-0.419***	-0.498**	0.331***	-0.043	-0.403*
	(0.019)	(0.043)	(0.169)	(0.020)	(0.046)	(0.180)
Respondents	5,030	5,030	5,030	3,652	3,652	3,652
Person-years	18,629	18,629	18,629	12,892	12,892	12,892
R-squared	0.008	0.034	0.036	0.014	0.028	0.029

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

**Appendix Table 2: Within-person fixed effects estimates of the impact of unemployment on the cognitive well-being of wives and husbands.**

	Wives			Husbands		
	(1)	(2)	(3)	(1)	(2)	(3)
Unemployed - <i>self</i>	-0.108** (0.039)	-0.110** (0.038)	-0.108** (0.038)	-0.108** (0.039)	-0.196*** (0.043)	-0.194*** (0.043)
Unemployed - <i>spouse</i>	-0.170*** (0.037)	-0.159*** (0.037)	-0.155*** (0.037)	-0.170*** (0.037)	0.015 (0.048)	0.016 (0.048)
Out of labor force - <i>self</i>	-0.074** (0.027)	-0.064* (0.027)	-0.055* (0.028)	-0.074** (0.027)	0.006 (0.051)	0.021 (0.052)
Out of labor force - <i>spouse</i>	-0.110** (0.038)	-0.094* (0.041)	-0.077+ (0.042)	-0.110** (0.038)	0.055+ (0.032)	0.062+ (0.032)
Part-time in prior year - <i>self</i>	-0.026 (0.025)	-0.027 (0.025)	-0.022 (0.025)	-0.026 (0.025)	-0.045 (0.042)	-0.042 (0.042)
Part-time in prior year - <i>spouse</i>	-0.033 (0.034)	-0.032 (0.034)	-0.025 (0.034)	-0.033 (0.034)	0.020 (0.030)	0.024 (0.030)
Weeks of work missed in prior year						
Unemployed - <i>self</i>	-0.001 (0.001)	-0.001 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.002 (0.001)	-0.002 (0.001)
Unemployed - <i>spouse</i>	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.002* (0.001)	-0.002+ (0.001)
Caring for sick person - <i>self</i>	-0.004 (0.006)	-0.003 (0.006)	-0.003 (0.006)	-0.004 (0.006)	-0.014 (0.009)	-0.014 (0.009)
Caring for sick person - <i>spouse</i>	-0.003 (0.009)	-0.001 (0.009)	-0.002 (0.009)	-0.003 (0.009)	-0.009 (0.007)	-0.009 (0.007)
Sick - <i>self</i>		0.001 (0.003)	0.001 (0.003)		-0.006 (0.004)	-0.006 (0.004)

Sick - <i>spouse</i>		0.001 (0.003)	0.001 (0.003)		-0.004 (0.004)	-0.004 (0.004)
Current health variables						
Work disability - <i>self</i>		-0.079 (0.069)	-0.072 (0.069)		0.104 (0.091)	0.107 (0.091)
Work disability - <i>spouse</i>		0.002 (0.065)	-0.000 (0.065)		-0.023 (0.087)	-0.020 (0.087)
Self-rated health - <i>self</i>		0.078*** (0.014)	0.077*** (0.014)		0.079*** (0.016)	0.080*** (0.016)
Self-rated health - <i>spouse</i>		0.075*** (0.013)	0.075*** (0.013)		0.050** (0.016)	0.051** (0.016)
Household finances						
Log of family income			0.046* (0.022)			0.036 (0.025)
Zero or negative wealth			-0.066* (0.027)			-0.020 (0.033)
Homeowners			0.059+ (0.030)			0.095* (0.038)
Children in home	0.013 (0.013)	0.016 (0.013)	0.012 (0.013)	0.013 (0.013)	0.014 (0.016)	0.010 (0.016)
Year fixed effects						
2009	-0.093*** (0.023)	-0.127*** (0.023)	-0.113*** (0.023)	-0.093*** (0.023)	-0.137*** (0.028)	-0.125*** (0.028)
2011	0.033 (0.022)	0.009 (0.022)	0.026 (0.023)	0.033 (0.022)	-0.043 (0.027)	-0.032 (0.027)
2013	0.034 (0.022)	0.017 (0.022)	0.032 (0.022)	0.034 (0.022)	-0.013 (0.026)	-0.003 (0.026)
2015	0.037+ (0.021)	0.026 (0.021)	0.035+ (0.021)	0.037+ (0.021)	0.017 (0.025)	0.023 (0.025)



2017 (reference)	-	-	-	-	-	-
Intercept	0.282*** (0.024)	-0.255*** (0.062)	-0.803** (0.256)	0.282*** (0.024)	-0.247*** (0.074)	-0.730* (0.301)
Respondents	4,055	4,055	4,055	4,055	2,876	2,876
Person-years	11,951	11,951	11,951	11,951	8,180	8,180
R-squared	0.013	0.024	0.026	0.013	0.026	0.028

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Standard errors in parentheses  
 \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

## Appendix for Chapter 4

**Appendix Table 3: First difference regression of standardized subjective well-being on income change – full sample.**

	Affective well-being				Cognitive well-being			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Income loss	-0.035+	-0.020	-0.005	0.013	-0.092***	-0.038	-0.036	-0.024
	(0.019)	(0.019)	(0.020)	(0.019)	(0.024)	(0.024)	(0.025)	(0.024)
Income gain	0.003	0.001	-0.000	-0.000	0.008**	0.004+	0.003	0.003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Household characteristics								
Married		0.077***	0.080***	0.085***		0.200***	0.200***	0.203***
		(0.023)	(0.022)	(0.022)		(0.028)	(0.028)	(0.028)
Divorced		0.062*	0.055+	0.051		-0.027	-0.032	-0.040
		(0.032)	(0.032)	(0.031)		(0.040)	(0.040)	(0.040)
Separated		-0.074*	-0.074*	-0.075*		-0.179***	-0.178***	-0.181***
		(0.032)	(0.032)	(0.032)		(0.041)	(0.041)	(0.041)
Widowed		-0.046	-0.030	-0.038		-0.123	-0.119	-0.129
		(0.065)	(0.064)	(0.064)		(0.086)	(0.085)	(0.085)
Num. of children		0.018*	0.021**	0.019**		0.025**	0.026**	0.026**
		(0.007)	(0.007)	(0.007)		(0.009)	(0.009)	(0.009)
Labor force participation								
Fired			0.030	0.034			0.077*	0.080*
			(0.027)	(0.026)			(0.032)	(0.031)
Unemployed			-0.140***	-0.137***			-0.154***	-0.149***
			(0.014)	(0.014)			(0.019)	(0.019)
Out of labor force			-0.130***	-0.069***			-0.053**	-0.032
			(0.015)	(0.015)			(0.019)	(0.020)
Part time			-0.039***	-0.035**			-0.035*	-0.032*
			(0.012)	(0.012)			(0.016)	(0.016)
Weeks of work missed								
Unemployed			0.000	-0.000			-0.000	-0.000
			(0.000)	(0.000)			(0.001)	(0.001)
Caring for sick person			-0.016***	-0.016***			-0.007+	-0.006+
			(0.003)	(0.003)			(0.004)	(0.004)
Self sick				-0.002+				-0.001
				(0.001)				(0.002)
Health variables								
Permanently disabled				-0.298***				-0.033
				(0.026)				(0.034)
Self-reported health				0.130***				0.125***

				(0.005)				(0.007)
Household wealth				0.000				0.001*
				(0.000)				(0.000)
Years								
2001-03	0.052**	0.054***	0.057***	0.052**				
	(0.016)	(0.016)	(0.016)	(0.016)				
2007-09	-0.009	-0.007	0.002	0.005				
	(0.016)	(0.016)	(0.016)	(0.016)				
2009-11	0.056***	0.057***	0.058***	0.053***	0.105***	0.107***	0.108***	0.105***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.019)	(0.018)	(0.018)	(0.018)
2011-13	0.023	0.023	0.022	0.018	0.032+	0.033+	0.031+	0.027
	(0.016)	(0.016)	(0.016)	(0.016)	(0.019)	(0.019)	(0.019)	(0.019)
2013-15	0.053**	0.053**	0.054**	0.051**	0.040*	0.041*	0.040*	0.037*
	(0.016)	(0.016)	(0.016)	(0.016)	(0.019)	(0.019)	(0.019)	(0.019)
2015-17 (reference)								
Constant	0.048***	0.047***	0.048***	0.050***	0.104***	0.099***	0.097***	0.099***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.013)	(0.013)	(0.013)	(0.013)
Respondents	10,670	10,670	10,670	10,670	8,994	8,994	8,994	8,994
Person-years	38,017	38,017	38,017	38,017	26,261	26,261	26,261	26,261

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

**Appendix Table 4: First difference regression of standardized subjective well-being on income change – partnered respondents.**

	Affective well-being				Cognitive well-being			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Income loss	-0.079** (0.030)	-0.076* (0.031)	-0.072* (0.031)	-0.064* (0.031)	-0.119** (0.040)	-0.121** (0.040)	-0.120** (0.041)	-0.119** (0.041)
Income gain	0.002 (0.004)	0.002 (0.004)	0.001 (0.004)	0.001 (0.004)	0.002 (0.006)	0.001 (0.006)	-0.000 (0.006)	0.000 (0.006)
Household characteristics								
Num. of children		0.027** (0.009)	0.027** (0.009)	0.026** (0.009)		0.013 (0.012)	0.014 (0.012)	0.014 (0.012)
Labor force participation								
Fired		0.010 (0.039)	0.009 (0.039)	0.009 (0.039)		0.075 (0.046)	0.074 (0.046)	0.076+ (0.046)
Unemployed		-0.128*** (0.022)	-0.129*** (0.021)	-0.125*** (0.021)		-0.143*** (0.029)	-0.145*** (0.029)	-0.140*** (0.029)
Out of labor force		-0.046** (0.018)	-0.046* (0.018)	-0.013 (0.018)		-0.041+ (0.024)	-0.042+ (0.024)	-0.039 (0.025)
Part time		-0.016 (0.016)	-0.014 (0.016)	-0.009 (0.016)		-0.005 (0.021)	-0.005 (0.021)	-0.002 (0.021)
Weeks of work missed								
Unemployed		0.001 (0.001)	0.000 (0.001)	0.000 (0.001)		-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Caring for sick person		-0.015*** (0.004)	-0.014*** (0.004)	-0.014*** (0.004)		-0.005 (0.005)	-0.004 (0.005)	-0.004 (0.005)
Self sick				-0.003 (0.002)				-0.000 (0.002)
Health variables								
Permanently disabled				-0.293*** (0.041)				0.053 (0.055)
Self-reported health				0.101*** (0.007)				0.077*** (0.011)
Spouse controls								
Labor force participation								
Fired			0.030 (0.042)	0.024 (0.042)			-0.035 (0.050)	-0.038 (0.050)
Unemployed			-0.011 (0.023)	-0.011 (0.023)			-0.097** (0.031)	-0.097** (0.031)
Out of labor force			0.004 (0.019)	0.003 (0.019)			0.017 (0.026)	0.017 (0.026)
Part time			-0.029+ (0.019)	-0.027 (0.019)			0.007 (0.026)	0.006 (0.026)

			(0.017)	(0.017)			(0.023)	(0.023)
Weeks of work missed								
Unemployed			-0.000	-0.000			-0.001	-0.001
			(0.001)	(0.001)			(0.001)	(0.001)
Caring for sick person			-0.016***	-0.013***			-0.013*	-0.012*
			(0.004)	(0.004)			(0.005)	(0.005)
Self sick			-0.001	-0.001			-0.000	-0.001
			(0.002)	(0.002)			(0.003)	(0.003)
Health variables								
Permanently disabled			-0.051	-0.044			0.029	0.018
			(0.040)	(0.039)			(0.053)	(0.053)
Self-reported health			0.043***	0.018*			0.076***	0.058***
			(0.007)	(0.007)			(0.010)	(0.010)
Household wealth			-0.000	-0.000			0.002*	0.002*
			(0.001)	(0.001)			(0.001)	(0.001)
Years								
2001-03	0.049*	0.055**	0.054**	0.050*				
	(0.020)	(0.020)	(0.020)	(0.020)				
2007-09	-0.025	-0.018	-0.016	-0.015				
	(0.020)	(0.020)	(0.020)	(0.020)				
2009-11	0.064**	0.066***	0.065**	0.063**	0.140***	0.142***	0.142***	0.140***
	(0.020)	(0.020)	(0.020)	(0.020)	(0.023)	(0.023)	(0.023)	(0.023)
2011-13	0.032	0.032	0.031	0.027	0.055*	0.054*	0.052*	0.049*
	(0.020)	(0.020)	(0.020)	(0.020)	(0.024)	(0.024)	(0.024)	(0.024)
2013-15	0.067**	0.070***	0.069***	0.066**	0.052*	0.053*	0.050*	0.047+
	(0.021)	(0.021)	(0.021)	(0.021)	(0.025)	(0.025)	(0.024)	(0.024)
2015-17 (reference)								
Constant	0.033*	0.037*	0.039**	0.039**	0.111***	0.110***	0.114***	0.115***
	(0.015)	(0.015)	(0.015)	(0.014)	(0.016)	(0.016)	(0.016)	(0.016)
Respondents	6,215	6,215	6,215	6,215	4,893	4,893	4,893	4,893
Person-years	19,258	19,258	19,258	19,258	12,954	12,954	12,954	12,954

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

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## Biography

Jarron Bowman has been drawn to inequality research since unexpectedly receiving the Kalamazoo Promise scholarship. The Promise, announced the year Jarron graduated high school, is a universal, place-based scholarship that guarantees students full tuition at any public school in Michigan. This twist of fate sparked an interest in inequalities of opportunity, their causes, and their consequences. Jarron went on to earn a B.A. in Political Science and Middle Eastern and North African Studies from the University of Michigan in 2010 and an M.P.P. from the University of Michigan's Ford School of Public Policy in 2014.

Jarron's recent article, "Do the Affluent Override Average Americans? Measuring Policy Disagreement and Unequal Influence," a version of the first chapter of this dissertation, will be published in *Social Science Quarterly*. Jarron will receive his Ph.D. in Sociology from Duke in May 2020. He will continue his career as an Assistant Professor in the Department of Sociology at Ithaca College.