INCOME REDISTRIBUTION AND LIFE SATISFACTION

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ABSTRACT

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The widening income gap between the rich and the poor has important social and economic implications. Governmental-level income redistribution presents an opportunity to reduce income inequality through tax and welfare policies. Redistributing income from the rich to the poor may improve societal well-being. The current studies examined the extent to which change in income redistribution relates to life satisfaction along with the moderating factors concerning this relation. Using a nationally-representative sample of 57,932 German respondents from 16 German states across 30 years (Study 1) and a world-wide sample of 115,293 respondents from 35 countries across 24 years (Study 2), I found that increases in state- and national-level income redistribution over time were associated with greater life satisfaction. The models predicted that a 10% reduction in Gini through income redistribution in Germany increased life satisfaction to the same extent as an increase of $\in 12,715$ (or about USD\$18,185) in annual income (Study 1), and a 5% reduction in Gini through income redistribution increased life satisfaction to the same extent as a USD\$1,582 increase in GDP per capita (Study 2). This association was positive across levels of income, amount of tax paid, political attitude, egalitarian value, economic mobility, and cultural values. These findings suggest that income redistribution is linked to greater life satisfaction for most people. These correlational findings provide initial evidence that redistribution policies may play an important role in improving societal well-being.

Keywords: life satisfaction, income inequality, income redistribution, subjective well-being

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INTRODUCTION

Subjective well-being refers to the affective feelings and cognitive assessment of the quality of one's life. Life satisfaction is an integral part of subjective well-being, and it captures the overall cognitive assessment of whether one is satisfied, content, and happy with one's life. Life satisfaction has gained increasing attention as a policy indicator (Diener, Oishi, & Lucas, 2015). Since the United Kingdom started measuring population-level life satisfaction in 2009, over 40 countries now have measures of citizens' subjective well-being.

Why should governments and policymakers care about citizens' subjective well-being? In addition to being a positive feeling in and of itself, subjective well-being has also been linked to a wide range of desirable outcomes. For example, individuals with higher levels of subjective well-being are more likely to live longer lives, have better work performance, get married, and have better social relationships (Luhmann, Lucas, Eid, & Diener, 2013; Lyubomirsky, King, & Diener, 2005). At the societal level, counties in the United States with higher life satisfaction experienced greater population growth (Lucas, 2013). In sum, subjective well-being is associated with many individual and societal benefits. Therefore, it is crucial to understand how policy indicators relate to subjective well-being in order to promote societal well-being.

With the emerging policy relevance of subjective well-being, it is important to understand how it relates to other social indicators. The widening income gap has led to growing concerns about its economic and social implications. Income inequality, as measured by the Gini coefficient has risen drastically in recent decades. Gini coefficients range from 0 to 1, in which 0 means complete income equality (i.e. everyone has the same income) and 1 means complete income inequality (i.e., one person earns all the income, and everyone else makes nothing). In the United States, the Gini coefficient has increased from .35 in 1970s to .45 in 2012 (Xie &

Zhou, 2014). The recent increase in income inequality may have contributed to the onset of the Occupy Wall Street Movement and the continuing public discourse on income inequality. Indeed, in 2013, President Barack Obama identified income inequality as "the defining challenge of our time." The widening income gap is not a unique situation in the United States. In China, income inequality has risen even faster than the United States (Xie & Zhou, 2014). There is an escalating global interest in addressing the causes and consequences of income inequality.

In developed societies, income inequality has been linked to negative outcomes such as worse physical health (Kawachi & Kennedy, 1999), lowered social capital, more violent crime (Kennedy et al., 1998), social comparison (Cheung & Lucas, 2016), and status-seeking behaviors (Walasek & Brown, 2015). These outcomes may contribute to lower societal well-being. Governmental-level income redistribution represents an opportunity to reduce income inequality through tax and welfare policies. Having a progressive tax structure (i.e., increasing the tax rate for higher incomes) and a welfare system may help narrow the widening income gap. How does income redistribution relate to life satisfaction? To the extent that income redistribution reduces actual levels of income inequality, it may help alleviate the negative effect of income inequality. The overarching goal of this dissertation was to examine whether, when, and for whom income redistribution predicts life satisfaction.

Income Inequality and Subjective Well-being

Past research on income inequality and life satisfaction has mainly used two approaches: a cross-national approach and a within-country approach. The cross-national approach uses data from multiple countries and examines whether individuals are less satisfied in countries with wider income gaps between the rich and poor. The main benefit of the cross-national approach is generalizability. That is, to the extent that a wide range of countries is represented, this approach

allows researchers to test if the relation between income inequality and life satisfaction can be reliably observed across national and cultural characteristics. However, income inequality is often calculated in different ways across countries. For example, some countries used household income to calculate income inequality, whereas others used individual income. This difference can create noise and obscure the relation between income inequality and subjective well-being. In contrast, the within-country approach uses data from a single country and tests whether stateor county-level income inequality predicts subjective well-being. This approach typically uses indexes of income inequality that are calculated in a consistent way across regions. However, this approach has limited generalizability beyond the single country examined. Moreover, because certain policies related to income inequality are consistent across regions, the variability in income inequality within a country is also likely smaller relative to the variability across countries. Notably, inconsistent empirical findings have come from studies that used either approach.

For instance, several studies showed negative associations between income inequality and life satisfaction (Alesina, Di Tella, and MacCulloch, 2004; Hargerty, 2000; Verme, 2011). For example, Alesina and his colleagues (2004) adopted a combination of a cross-national approach and a within-country approach and found negative inequality-happiness links across European countries and within the United States. Across 12 European countries included in the Euro-barometer Survey Series, income inequality was sometimes associated with lower happiness (depending on covariates included in the model), and income inequality was consistently linked to unhappiness to respondents on the political left. In the within-country portion of the paper, the authors found that from 1981 to 1996, respondents in the United States reported lower happiness in states where income inequality was high. However, the negative

association became non-significant when state-level unemployment rate was taken into account. In a cross-national analysis on the World and European Value Surveys, Verme (2011) found consistent negative associations between income inequality and life satisfaction, and this result was robust across different sets of covariates and estimation techniques. Using macro-level data from eight countries between 1972 and 1992, Hagerty (2000) found that increases in Gini were associated with lower national-level life satisfaction.

In contrast, others have found the counterintuitive result that greater income inequality was associated with greater subjective well-being (Cheung, 2016; Knight, Song, & Gunatilaka, 2009; Rözer & Kraaykamp, 2013; Tomes, 1986). For example, Rözer and Kraaykamp (2013) examined the link between income inequality and life satisfaction on a cross-national sample of 195,091 respondents from 85 countries. Controlling for individual-level and country-level covariates (e.g., age, gender, education, gross domestic product), Rözer and Kraaykamp found the counterintuitive result that individuals living in countries with high level of income inequality reported greater life satisfaction. Other studies examining the inequality-happiness link within a country have also found positive associations between income inequality and life satisfaction (e.g., China: Cheung, 2016; Knight et al., 2009; Canada: Tomes, 1986). In a nationally representative sample of Chinese participants, higher county-level income inequality predicted greater life satisfaction for respondents living in rural areas (Cheung, 2016). Knight et al. (2009) found similar results based on a separate sample of respondents living in rural China. Using survey data from 1977, Tomes (1986) found that Canadians who lived in electoral districts where poorer people made larger shares of income (i.e., lower income inequality) reported lower life satisfaction than their counterparts who lived in districts where the poor made smaller shares of income.

Finally, some studies found little to no association between income inequality and life satisfaction, at least when potentially relevant controls (such as gross domestic product) are included (Berg & Veenhoven, 2010; Zagorski, Evans, Kelley, & Piotrowska, 2014). In a study examining the inequality-happiness link across 28 European countries from the European Quality of Life Survey, income inequality was associated with lower subjective well-being, explaining 3% of the variance in well-being (Zagorski et al., 2014). However, this association was not significant once key covariates were controlled for (e.g., gross domestic product, age, education, gender). Berg and Veenhoven (2010) observed a null zero-order correlation between income inequality and life satisfaction in a sample of 119 countries. However, once national wealth was controlled for, greater income inequality was linked to *greater* life satisfaction (r = 0.28).

To summarize, a review of past research has uncovered positive, null, and negative associations between income inequality and life satisfaction. Although it is possible that these discrepancies are simply due to small effect sizes, sampling error, and flexible data analysis, these differences could also be explained by new theoretical accounts and methodological differences across studies.

The dual-process model of income inequality. Cheung (2016) recently proposed a dualprocess model of income inequality, suggesting that income inequality may provide hope for upward income mobility in societies experiencing economic growth but lead to perceived unfairness and injustice in societies with limited growth. The dual-process model is rooted in the "tunnel analogy" first described by Hirschman and Rothschild (1973):

Suppose that I drive through a two-lane tunnel, both lanes going in the same direction, and run into a serious traffic jam. No car moves in either lane as far as I can see (which is

not very far). I am in the left lane and feel dejected. After a while the cars in the right lane begin to move. Naturally, my spirits lift considerably, for I know that the jam has been broken and that my lane's turn to move will surely come any moment now. Even though I still sit still, I feel much better off than before because of the expectation that I shall soon be on the move. But suppose that the expectation is disappointed and only the right lane keeps moving: in that case I, along with my left lane cosufferer, shall suspect foul play, and many of us will at some point become quite furious and ready to correct manifest injustice by taking direct action (such as illegally crossing the double line separating the two lanes). (p. 545)

The dual-process model of income inequality posits that income inequality can have both positive and negative effects on subjective well-being, depending on the economic characteristics of the societies. On one hand, in societies with foreseeable economic growth, diversity in income may signal opportunities for upward income mobility, which is beneficial to subjective well-being. This process is analogous to the positive experience of the protagonist in the tunnel analogy. When cars in the right lane start to move, the protagonist may gain hope that his lane may be moving soon. On the other hand, when coupled with limited upward mobility, income inequality may increase perceived injustice, social comparison, and social mistrust, which are detrimental to subjective well-being. This process is analogy when the right lane kept moving but his lane was jammed. This theoretical approach suggests that income inequality is not always bad, and it can have positive and negative effects on subjective well-being.

This model can potentially explain past mixed findings, while also making novel predictions. For example, in rural China (a developing society with foreseeable economic

growth), higher county-level income inequality was linked to greater hope for the future, which was associated with greater life satisfaction (Cheung, 2016). This is consistent with the idea that in early stages of economic development, income differences can be a signal for a better financial future, which gives hope to people. However, in the United States (a developed society), income inequality is associated with stronger social comparison and increased perception of injustice (Cheung & Lucas, 2016; Oishi, Kesebir, & Diener, 2011; Walasek & Brown, 2015). Overall, the recent surge in research on income inequality has significantly improved our understanding of the inequality-happiness link. The basic hypothesis that income inequality is negatively associated with subjective well-being does not receive consistent and robust support, and therefore more complex theoretical accounts, like the dual process model of income inequality, are needed.

Methodological differences in past studies. It is also possible that methodological concerns about the measurement of income inequality may contribute to the mixed findings on income inequality and subjective well-being. Past studies have typically operationalized income inequality as the Gini coefficient. Gini can be calculated using pre-government income (i.e., before tax and government transfer; an index known as *market* Gini) or using post-government income (i.e., after tax and government transfer; an index known as *market* Gini). However, past research has not consistently documented the type of Gini used for analyses. For example, among the studies on income inequality and subjective well-being that were discussed above (i.e., Alesina, Di Tella, and MacCulloch, 2004; Cheung, 2016; Cheung & Lucas, 2016; Oishi, Kesebir, & Diener, 2011; Rözer and Kraaykamp, 2013; Verme, 2011; Walasek & Brown, 2015; Zagorski et al. 2014), only Alesina and his colleagues (2004) and Verme (2011) clearly specified that they used net Gini in their analyses.

Crucially, the psychological consequences of income inequality may depend on whether income inequality is calculated as market Gini or net Gini. For example, in a society with great differences in wages (high level of market Gini) but small differences in disposable income (lower level of net Gini), the large differences in wages may provide incentives for people to strive in the workplace while the small differences in disposable income may reduce the tendency for conspicuous consumption, and this combination of market and net Gini could potentially be beneficial. Therefore, past research with inconsistent findings could be a result of the incomparable definitions of income inequality across studies.

Although the two measures of income inequality are potentially a problem leading to the mixed results in the literature, my proposed research takes advantage of the two different measures of income inequality to create a measure of income redistribution. Richer individuals have higher pre-government income than low-income individuals, and the income gap between the two groups reflects market Gini. Due to taxation, richer individuals tend to have lower post-government income than pre-government income; due to government transfer, low-income individuals have higher post-government income than pre-government income. Therefore, after tax and welfare, the income gap between the two groups, which reflects net Gini, typically shrinks relative to the income gap before tax and welfare. The difference in market Gini and net Gini thus represents the extent to which government-level income redistribution changes income inequality through tax and welfare (Kakwani, 1977; Solt, 2009).

Income redistribution can be quantified by examining the difference between market and net Gini. Specifically, if complete equality is a Gini of 0, and complete inequality is a Gini of 1, the proportion of income inequality that is reduced through income redistribution can be quantified through the following equation: (*MarketGini – NetGini*)/*MarketGini*. The resulting

index (referred to as income redistribution below) can be interpreted as % reduction in income inequality through tax and welfare.¹ For example, if a state has a market Gini of 0.5 and a net Gini of 0.3, it means that income inequality is reduced by 40% ((0.5-0.3)/0.5=0.4) through income redistribution. The current studies aimed to elucidate the extent to which income redistribution relates to life satisfaction and the moderating factors concerning this relation.

Income Redistribution and Subjective Well-being.

Income redistribution refers to governmental effort towards reducing income inequality through tax and welfare transfer. The psychological consequences of income redistribution have received little to no attention in the psychological literature, even though redistributing income from the rich to the poor may be important to societal well-being. Income redistribution may increase subjective well-being for a number of reasons. First, because of diminishing returns, the same amount of income may matter more for low-income individuals relative to high-income individuals. Thus, redistributing a constant amount from the richest members of a society to the poorest may lead to a greater benefit to those who receive that additional income than it would have to those from whom it was taken. Second, in societies where income inequality is negatively associated with subjective well-being, income redistribution reduces relative difference in income among people, which could potentially lead to positive effects on overall well-being.

These potential consequences of income redistribution can be understood through both absolute income and relative income hypotheses. The absolute income hypothesis is the idea that

¹ It is noted that this definition of income redistribution does not include some other governmental efforts that redistribute resources. For example, building infrastructure in low-income neighborhoods (e.g., highway, hospitals, parks) may also benefit low-income individuals, but these efforts do not necessarily translate into reduction of income inequality. Increasing minimum wage is another way to improve the income level of poorer individuals without necessarily affecting tax or welfare.

income improves well-being by fulfilling needs, whereas the relative income hypothesis posits that relative position in income matters to well-being. Past research on absolute income has consistently shown a log-linear association between income and life satisfaction (e.g., Cheung & Lucas, 2015; Clark, Frijters, & Shields, 2008; Diener, Ng, Harter, & Arora, 2010; Kahneman & Deaton, 2010; Luhmann, Schimmack, & Eid, 2011). A log-linear association means that the same proportional increase in income predicts life satisfaction linearly. This reflects the idea that income has diminishing returns on happiness such that the same amount of income buys more happiness for low-income individuals. For example, assume every 100% increase in income is associated with 1 unit increase in life satisfaction, then a \$10,000 increase in income would increase the satisfaction of individuals making \$10,000 by 1 unit, but the same \$10,000 increase would only buy .1 unit of happiness for individuals making \$100,000. Given the log-linear association, redistributing \$10,000 income from someone making \$100,000 (a 10% loss; a .1 unit decrease in satisfaction) to someone making \$10,000 (a 100% gain; a 1 unit increase in satisfaction) should increase the overall satisfaction of the aggregate of low- and high-income individuals.

The above example does not account for the possibility that income loss is more costly to well-being than the benefit of income gain. A recent study on loss aversion estimated that the magnitude of the effect of loss in disposable income on life satisfaction was roughly twice the effect of income gain (Boyce, Wood, Banks, Clark, & Brown, 2013). Returning to the example, accounting for the effect of loss aversion, redistributing \$10,000 income from someone making \$100,000 (a 10% loss; a .2 unit decrease in satisfaction accounting for loss aversion) to someone making \$10,000 (a 100% gain; a 1 unit increase in satisfaction) should still have net positive effect on societal well-being. This example suggests that based on the absolute income

hypothesis, an idealized version of income redistribution (that redistributes income effectively with an appropriate tax rate and benefits exactly those in needs)² should lead to greater societal well-being, but it may have a small negative effect on tax-payers' well-being (if taxation is experienced in a similar way as loss of disposable income).

In addition to the absolute income hypothesis, the relative income hypothesis can also explain why income redistribution may improve subjective well-being by reducing income comparison. The relative income hypothesis suggests that satisfaction decreases to the extent that one's income compares less favorably to others (Blanchflower & Oswald, 2004; Di Tella, MacCulloch, & Oswald, 2003; Luttmer, 2005). For example, Cheung and Lucas (2016) examined a large sample of over 1.7 million United States respondents and found that holding household income constant, respondents reported lower life satisfaction in counties with higher median income. Moreover, the negative association between county income and life satisfaction was particularly strong in counties high in income inequality. The authors argued that a large discrepancy in income may increase the salience of the income difference, which increases the frequency of social comparison. To the extent that income redistribution reduces income inequality, it may also reduce the negative effect of income comparison on subjective well-being. Therefore, based on the absolute and relative income hypotheses, there are good reasons to expect that income redistribution improves societal well-being.

When examining the association between income redistribution and life satisfaction, it is important to consider the appropriate level of analysis. The current dissertation focused on testing whether *over-time change* in income redistribution in a *state* or *country* is related to life

² As a counter example, redistributing \$10,000 from someone making \$60,000 (a 16.6% loss; a .33 unit decrease in satisfaction accounting for loss aversion) to someone making \$30,000 (a 33.3% gain; a .33 unit increase in satisfaction) should not improve overall well-being.

satisfaction. The focus on *over-time change* tests whether individuals become more satisfied as income redistribution in a state or country increases over time. This is the most relevant level of analysis for public policy because redistribution policies lead to an over-time change (or a within-state change) in income inequality. For example, state policies that redistribute income from wealthier individuals in State A to poorer individuals in State A and federal policies that redistribute income inequality in State A to poorer State A can both reduce income inequality in State A. In effect, the current approach is interested in whether residents in State A become more satisfied, as income inequality in State A is reduced over time through income redistribution. The association between over-time change in income redistribution and life satisfaction is referred to as the time varying effect of income redistribution. The word "effect" is used in this paper to be consistent with prior usage of the similar wording by methodologists who developed the statistical models used in the current studies (Allison, 2009; Neuhaus & Kalbfleisch, 1998), and it does not imply a causal relationship.

This focus on over-time change can be contrasted with a between-regions focus, which tests whether life satisfaction is higher in states or countries that, on average, have higher levels of income redistribution. A between-regions approach tests whether residents in State X with high income redistribution were more satisfied than residents in State Y with low income redistribution. This approach is less informative for policy. Redistribution policies can change State Y with low income redistribution to State Y with high income redistribution (hence the focus on the time-varying effect of redistribution). However, policies cannot change State Y with low income redistribution to State X with high income redistribution because even if policies increase income redistribution in State Y to the same level as State X, State Y is still a fundamentally different state from State X. The current studies used a hybrid effect model that

separates the time-varying effect from the between-regions effect (Allison, 2009; Neuhaus & Kalbfleisch, 1998; also known as a between-within model, Sjölander, Lichtenstein, Larsson, & Pawitan, 2013). It should be noted that findings on the time-vary effects should not be assumed to generalize to the between-regions level, and vice versa. This between- and within-unit distinction has been shown to be an important difference (Cheung & Lucas, 2015).

Moreover, the time-varying effect of income redistribution was examined at the *state or country* level because these broader geographical regions typically have stronger influence over social policies than smaller regions. Recent findings suggest that results from one level of analysis (e.g., county) should not be assumed to generalize to another level of analysis (e.g., state). For example, Luhmann, Murdoch, and Hawkley (2014) found that while county-level poverty and unemployment rate predicted lower subjective well-being, state-level poverty and unemployment were not significant predictors of well-being. Therefore, the emphasis on the time-varying effect of income redistribution at the state and country level should inform the effectiveness of state and national polices on income redistribution.

Two past studies have examined the association between income redistribution and life satisfaction. A study in economics used a within-country approach and examined the association between income redistribution (defined as % reduction in Gini through tax and welfare) and life satisfaction using data from the 1985 – 1998 German Socioeconomic Panel (SOEP; Schwarze & Härpfer, 2007). The level of analysis in this study was spatial planning regions (SPRs) which are geographical regions smaller than states; similar to metropolitan statistical areas in the United States. The authors modeled the time-varying effect of SPR-level income redistribution by testing whether within-SPR change in income redistribution predicted life satisfaction after partialling out the between-SPR differences in income redistribution. This approach specifically

tested whether over-time changes in SPR-level income redistribution predicted life satisfaction. However, income redistribution was not a significant predictor of life satisfaction.

Notably, the SPR-level of analysis in the study conducted by Schwarze and Härpfer (2007) may not have provided the strongest test for the effect of income redistribution. Estimates of income redistribution were based on relatively small samples. For example, in 1998, the minimum number of households surveyed by the SOEP in a SPR was 13 (Knies & Spiess, 2007). In addition, relative to the federal or state level, SPRs may not have as strong of an influence on redistribution policies. For instance, in Germany, "the Federal Spatial Planning Law of 1965 ... outlined a broad aim to develop and spatially organize the country to ensure equal conditions, regardless of geography, and gave primary responsibility for doing so to the Länder [which is the German word for state]" (Hall, 1992 as cited in Schmidt & Buehler, 2007, p. 61). Therefore, while this study provided preliminary evidence that over-time change in income redistribution does not increase subjective well-being, the results may not generalize to state- or country-level analyses. Methodologically, larger samples are often obtained at the state or national level, which provide better estimates of income inequality and income redistribution. Moreover, states and nations may have more influence over income redistribution policies relative to smaller regions.

Hajdu and Hajdu (2014) also studied the link between income redistribution and life satisfaction in a sample of 29 European countries using data from the 2002 to 2008 European Social Survey. They found that respondents reported greater life satisfaction in countries with greater income redistribution. It is noteworthy that although the dataset covered multiple years, changes in income redistribution over time are very small over this relative short time frame. The level of income redistribution (as expressed as % reduction in Gini through tax and welfare) changed less than 1% in 14 out of the 29 countries. Therefore, the finding was likely driven by

between-country differences in income redistribution, rather than the time-varying effect (i.e., within-country change) of income redistribution. In sum, there is some preliminary evidence that living in a European country with greater income redistribution is beneficial to subjective wellbeing, but it is unclear whether an increase in income redistribution over time is linked to an increase in subjective well-being. These two studies represented an initial step towards understanding the role of redistribution policies on subjective well-being.

To extend beyond the overall main effect of income redistribution, it is also important to consider whether the association between income redistribution and life satisfaction may be positive for some people and negative for others. In the current studies, I tested the strong vs. weak hypotheses of income redistribution by examining potential moderators of the link between income redistribution and life satisfaction. The strong hypothesis posits that income redistribution is beneficial (or at least not detrimental) to the subjective well-being of most people. The weak hypothesis posits that income redistribution may simply redistribute happiness such that it is beneficial to some and damaging to others. The strong vs. weak hypotheses of income redistribution were tested through identifying the boundary conditions of the association between income redistribution and life satisfaction. Individual and national factors may moderate the effect of income redistribution.

At the individual level, the amount of tax paid, income mobility, egalitarian values, and political leanings may be important moderators. First, the association between income redistribution and life satisfaction may be moderated by individual-level tax and government transfer (e.g. welfare). By redistributing income from high-income individuals to low-income individuals (or those in need), the effect of income redistribution may be positive for those on the receiving end but negative for those on the giving end. In other words, the effect of income

redistribution may be conditional on the amount of taxes one paid and/or the amount of government transfer one received.

Second, income mobility may also change the association between income redistribution and life satisfaction. For individuals experiencing upward income mobility, the prospect of giving up larger proportions of their income to taxation may be unappealing. Indeed, individuals with greater potential for upward income mobility tended to oppose policies towards income redistribution (Alesina & La Ferrara, 2005). For individuals experiencing downward income mobility, however, income redistribution can become more appealing because a stronger welfare program may provide security for these individuals with declining income.

Third, the association between income redistribution and life satisfaction may depend on egalitarian values, which refers to beliefs in equality for all people. For example, imagine that an individual is choosing to move to State A and State B. State A has low income inequality, and 95% of residents have incomes between \$30,000 and \$70,000. State B has high income inequality, and 95% of residents have incomes between \$10,000 and \$100,000. An individual who holds egalitarian value should prefer State A over State B because income is distributed more equally. Therefore, individuals who endorse egalitarian values may benefit from income redistribution. However, income redistribution may be detrimental to people who prefer a stronger social hierarchy (perhaps people who are high in social dominance orientation, an individual difference measure of people's preference for unequal relations between social groups; Pratto, Sidanius, Stallworth, & Malle, 1994).

Fourth, income redistribution may be differentially associated with well-being depending on where one stands on the political spectrum. A common way to classify political views is to use the left-right political continuum. Because individuals on the political left tend to support

egalitarianism and social welfare, income redistribution aligns more closely to left-wing ideologies. Hajdu and Hajdu (2014) found that the positive effect of income redistribution was stronger for left-wing individuals. Therefore, I hypothesized that the time-varying effect of income redistribution may be stronger for people on the political left than people on the political right.

At the national level, economic growth and power distance may moderate the link between income redistribution and life satisfaction. Economic growth and power distance were conceptualized to be analogous to upward income mobility and egalitarian values at the individual level. In countries with a growing economy, larger income difference may signal greater hope for income mobility. Witnessing a rags-to-riches story from a fellow villager may improve one's perception of the future financial state. In this context, income redistribution may temper motivation to make more money. Therefore, income redistribution may not be beneficial in countries with a growing economy. The effect of income redistribution may also depend on cultural differences. A particularly relevant cultural aspect is called power distance, which is "the extent to which the less powerful members of institutions and organizations with a country expect and accept that power is distributed unequally" (Hofstede, Hofstede, & Minkov, 2010, p. 61). To the extent that income redistribution reduces inequality, it may not be beneficial in cultures that prefer a stronger hierarchy.

To summarize, I predicted that increases in income redistribution are associated with increases in societal well-being. Moreover, I tested the strong vs. weak hypotheses of income redistribution. The strong hypothesis predicts that income redistribution improves subjective well-being for all, whereas the weak hypothesis predicts that income redistribution is detrimental to the subjective well-being of individuals who pay taxes, experience upward income mobility,

do not hold egalitarian values, endorse right-wing ideologies, live in countries experiencing economic growth, and live in cultures that expect inequality.

Overview of Current Studies

Overall, the current studies examine whether change in income redistribution over time predict subjective well-being, along with the boundary conditions of this association. Study 1 uses a within-country approach and analyzes data from the 1984-2013 SOEP. The SOEP was selected because it is the largest on-going panel study with sufficient information to estimate state-level income inequality and income redistribution. Although a prior study on income redistribution has been conducted on the SOEP (Schwarze & Härpfer, 2007), the current study was a significant improvement with twice the amount of waves (30 waves compared to 14 waves) and a different level of analysis (SPRs compared to states). In Study 1, I tested the time-varying effect of state-level income redistribution on life satisfaction using 30 years of data in Germany. In addition, I tested whether the time-varying effect of state-level income redistribution depended on the amount of tax paid and income mobility.

Study 2 uses a cross-national approach and analyzes data from the 1981-2014 World Value Survey (WVS). The WVS was selected because it contains data from many countries and covers a long time frame, which may capture more variability in income redistribution across countries and over time. Study 2 also makes use of the Standardized World Income Inequality Database Version 5.0 (Solt, forthcoming; SWIID), which is a promising development in cross-national research on income inequality and income redistribution. Past cross-national research has sometimes used datasets that did not have standardized measures of income inequality. For example, in the World Income Inequality Database, income inequality is sometimes calculated with household income and sometimes calculated with personal income. In other cases, market

Gini and net Gini are not distinguished. These limitations add noise to analyses. The SWIID provides standardized measures of income inequality and income redistribution across countries. In Study 2, I test the time-varying effect of country-level income redistribution and life satisfaction and examine egalitarian values, political leanings, economic growth, and power index as moderators.

Since more and more societies (e.g., Great Britain, France, Bhutan) are creating official measures of subjective well-being, it is becoming increasingly important to understand how subjective well-being links to objective characteristics (e.g., income inequality and income redistribution) and how these associations may vary as a function of individual, national, and cultural differences. The current studies contributed to this area of research by using cross-national and within-country approaches to understand the connections between income inequality, income redistribution, and subjective well-being. The current studies informed our understanding of 1) the longitudinal links between change in income redistribution over time and subjective well-being, 2) the individual-level boundary conditions of these associations, and 3) the roles of national characteristics and cultural values.

STUDY 1: INVESTIGATING THE LINK BETWEEN INCOME REDISTRIBUTION AND LIFE SATISFACTION USING A WITHIN-COUNTRY APPROACH Participants

The current study used data from the SOEP. The sample size was determined based on the availability of data from the SOEP. The sample included 57,932 participants from 16 German states tracked up to 30 years with 448,440 total observations (183,108 out of a total of 631,548 observations were excluded due to incomplete data.). Table 1a presents the descriptive statistics of participants during their first year of reporting complete data. Table 1b presents descriptive statistics of German states aggregated across individuals. The sample was 51.4% women, 57.7% married, and 55.4% employed. Ten states had 30 years of data, five states had 22 years of data, and one state had 14 years of data. Therefore, there were a total of (10 * 30 + 5 * 22 + 1 * 14)424 state-years. Figures 1 presents the time series of life satisfaction, net Gini, and income redistribution for the 16 German States.

To provide some context, Germans pay tax at the federal, state, and municipality levels, and person income tax, corporate income tax, and value-added tax (VAT; which is a consumption-based tax placed on goods and services and is a shared tax between federal government and states) are the major sources of government revenue. Germany has a progressive tax structure. According to a cross-national comparison of tax and welfare (De Nardi, Ren, & Wei, 2000), for an average German working age household, the average tax rate was 17% (compared to 16% in the US, 21% in Canada, 23% in Finland, and 25% in Sweden; p. 3), and 6% of the household income comes from government transfer (compared to 3% in the US, 8% in Canada, 15% in Finland, and 19% in Sweden; p.3). There is a complex system for intergovernmental transfer across states. According to Ma (1997), to redistribute income from richer states to poorer states, three separates steps are used: 1) VAT sharing, where a portion of VAT is shared with priority to poorer states, 2) an interstate equalization system, which redistributes income based on states' fiscal needs, and 3) supplementary grants (which at times, included grants that were specific to certain Western states as well as grants that targeted Eastern states). In 1996, before intergovernmental transfer, Western states' per capita revenue was 11% above national average, whereas Eastern states' per capita revenue was 39% below national average (Ma, 1997, p. 14). After all three steps of intergovernmental transfer, Western states' per capita revenue was 5% below national average.

Measures

Life satisfaction. Participants reported their life satisfaction on an 11-point scale (0 "very dissatisfied" to 10 "very satisfied") to a single-item "All things considered, how satisfied are you with your life as a whole?" The psychometric properties of single-item life satisfaction measures (including this specific measure in this specific sample) have been shown to be satisfactory (Cheung & Lucas, 2014; Lucas & Donnellan, 2012).

Pre- and post-government income. The SOEP Cross National Equivalent File provides data on participants' pre- and post-government household income (Frick, Jenkins, Lillard, Lipps, & Wooden, 2007). The Cross National Equivalent File contains data on a wide range of equally defined variables for several panel studies, such as British Household Panel Study, Swiss Household Panel, and Household, Income and Labour Dynamics in Australia Survey. Both income variables were calibrated for inflation to reflect Euros in 2011 using the Consumer Price Index. Post-government income (i.e. disposable income) was used as a measure of financial

resources. It was log-2 transformed to reduce skewness. After transforming the income variable, a unit increase equals twofold increase in income.

Individual-level tax and government transfer. Individual-level government tax and government transfer was calculated by subtracting post-government income (log) from pregovernment income (log) to capture the change in income from taxes, welfare, and other sources of government transfer. A positive number means that participants had higher pre-government income than post-government income, indicating that the amount of tax paid was greater than the amount of government transfer received.

Income mobility. Income mobility was operationalized as the time-varying effect of individual-level household income. The time-varying effect of income tests whether as household income increases over time, participants report greater life satisfaction. Details about how household income was recoded to capture the time-vary effect are discussed in the Analytical Strategy section.

Income inequality and income redistribution. Pre- and post-government incomes were used to calculate income inequality as indexed by Gini coefficients. Market Gini and net Gini by states were calculated using the R package reldist based on pre- and post-government income respectively (Handcock, 2015; Handcock & Morris, 2006). Income redistribution was calculated using: (MarketGini - NetGini)/MarketGini (M = 0.18, SD = 0.04). Income inequality in the average German state was reduced by 18% through income redistribution.

Analytical Strategy

Multilevel modeling was used to account for the nonindependence of the data with year (level-1) nested within person (level-2) nested within states (level-3). The residual error structure was specified as a fixed-order autoregressive structure (known as AR1). This means that the

residual correlations between time points decreased as time lag increased. The analyses were conducted in R using the nlme package (Pinheiro, Bates, DebRoy, Sarkar, & R Core Team, 2015). The intraclass correlation for life satisfaction was calculated to estimate the level of nonindependence. The intraclass correlations were .43 at the person level and .026 at the state level, indicating 43% of the variance of life satisfaction can be explained by the fact that there was a substantial amount of within-person stability in life satisfaction across the years of the study and 2.6% of the variance can be attributed to the fact that participants living in the same states had somewhat similar life satisfaction. These results supported the use of multilevel modeling.

In the following analyses, a hybrid effect model was used to isolate the time-varying effects of post-government household income, state-level net Gini, and state-level income redistribution from the between-state effects (Allison, 2009). These three variables were recoded using a group-mean centering procedure, which provided estimates of the time-varying effects of predictors (e.g., whether changes in income redistribution over time are associated with life satisfaction) controlling for all time-invariant individual and state characteristics (Allison, 2009). Specifically, for household income, yearly household income was centered around individual-specific means; individual-specific means were then centered around state-specific means. This procedure created three variables related to household income: yearly household income, individual-specific means of income, and state-specific means of income. The yearly household income tested the time-varying effect of household income (i.e., whether changes in household income were associated with changes in life satisfaction over time), and it was used as a measure of income mobility. Individual-specific means of income tested whether richer individuals tended to report higher life satisfaction than low-income individuals. State-specific means of

income tested whether participants living in states with higher income reported greater life satisfaction compared to participants living in states with lower income.

State-level yearly net Gini and income redistribution were centered around state-specific means. The mean-centered net Gini and income redistribution tested the time-varying effects of income inequality and income redistribution (e.g., as income redistribution in State A increases, do respondents from State A reported greater life satisfaction?). Estimates of these associations were based on 424 state-years. The state-specific means of net Gini and income redistribution tested whether state differences in income inequality and income redistribution were associated with life satisfaction (e.g., do respondents from State A with high income inequality report lower life satisfaction compared to respondents from State B with low income inequality?). These associations should be interpreted cautiously because they were tested based on a small number of states (i.e., 16).

With the time-varying effect of household income, I can place a monetary value on the effect of other predictors in terms of changes in annual income. As a hypothetical example, assume that a one-unit increase in household income over time is associated with a one-unit increase in life satisfaction. If a 10% reduction in Gini through income redistribution is also associated with a one-unit increase in life satisfaction, then a 10% reduction in Gini through income redistribution has about the same effect on life satisfaction as a twofold increase in income over time.

Results

The purposes of the analysis were to test the time-varying effect of state-level income redistribution on life satisfaction and the potential moderating role of individual-level tax and welfare and income mobility on income redistribution. The correlations among continuous

variables aggregated across waves are presented in Table 2. Notably, life satisfaction was positively correlated with income (r = .15, p < .001), suggesting that in general, people with greater income tended to be more satisfied. Life satisfaction was positively correlated with net Gini (r = .14, p < .001) and negatively correlated with income redistribution (r = -.04, p < .001). These correlations suggest that life satisfaction tended to be higher when income inequality was high and when income redistribution was low. These zero-order correlations may be confounded by income because states with higher Gini tended to be richer (r = .09, p < .001), and states with higher income redistribution tended to be poorer (r = -.09, p < .001). The correlations also did not take the longitudinal nature of the data into account.

To test the time-varying effect of income redistribution, a multilevel model was estimated with life satisfaction as the outcome. The time-varying effects of state-level net Gini, state-level income redistribution, and individual-level post-government income were the main predictors of interest. The state-specific means of net Gini, income redistribution, and individual- and statespecific means of post-government household income were also included as predictors. Gender, employment status, marital status, number of household adults, number of household children, years of education, age, survey year, years of participation were also included as covariates. Years of participation referred to the number of times respondents had participated in GSOEP. This variable was included to control for the panel conditioning effect that has been previously documented in the GSOEP dataset (Baird, Lucas, & Donnellan, 2010). Table 3 presents the results. The results did not differ with and without covariates.

The associations between individual-level covariates and life satisfaction were mostly consistent with past research. Married, more educated, higher income individuals tended to be more satisfied. For state-level covariates, respondents living in richer states reported significantly

higher life satisfaction than those living in states with lower income, b = 1.75, SE = 0.18, p < .001. State differences in income redistribution did not significantly predict life satisfaction, b = 0.39, SE = 0.48, p = .41. State differences in net Gini significantly predicted life satisfaction, b = 1.41, SE = 0.45, p = .002, such that respondents living in more unequal states reported *greater* life satisfaction. This positive association between state differences in net Gini and life satisfaction was found with and without covariates, and this counterintuitive finding is consistent with some prior research (Cheung, 2016; Knight, Song, & Gunatilaka, 2009; Rözer & Kraaykamp, 2013; Tomes, 1986).

The time-varying effects of income inequality and income redistribution on life satisfaction. The time-varying effect of post-government household income was significant, b= 0.15, SE = 0.005, p < .001. Every twofold increase in household income was associated with 0.15 unit increase in life satisfaction. This association was used as a benchmark to quantify the effects of income inequality and income redistribution in terms of income. As income inequality increased over time, respondents tended to report being less satisfied, b= -0.45, SE = 0.17, p = .007. A 10% increase in net Gini (from 0.30 to 0.33) lowered life satisfaction to the same extent as a decrease of €2,102 (or about USD\$3,006) in household income. More importantly, increases in income redistribution over time predicted greater life satisfaction, b = 0.67, SE = 0.12, p < .001. The model predicted that a 10% reduction in Gini through income redistribution would increase life satisfaction to the same extent as an increase of €12,715 (or about USD\$18,185) in annual income.

The moderating roles of tax and welfare and income mobility. Next, I tested whether the positive time-varying effect of income redistribution was moderated by individual-level tax and government transfer and income mobility. Specifically, the weak hypothesis predicted that income redistribution may be beneficial to the well-being of individuals on the receiving end of redistribution and detrimental to the well-being of individuals on the giving end of redistribution. It also predicted that income redistribution may be beneficial to those experiencing downward income mobility but detrimental to those experiencing upward income mobility. An interaction term between the time-varying effect of state-level income redistribution and individual-level tax and welfare and an interaction term between the time-varying effects of state-level income redistribution and individual-level household income were added to the model.

The positive time-varying effect of income redistribution remained significant in this model, b = 0.71, SE = 0.12, p < .001. Tax and welfare showed a significant main effect, b =0.014, SE = 0.001, p < .001, suggesting that participants who paid more tax also reported greater life satisfaction. Income mobility (as reflected by the time-varying effect of household income) was also associated with greater life satisfaction, b = 0.14, SE = 0.005, p < .001. That is, given two individuals with the same average income, the individual who experienced an increase in income over time reported greater life satisfaction. With regards to the interactions, the positive time-varying effect of income redistribution was not moderated by tax and welfare, b = 0.02, SE = 0.03, p = .51, or income mobility, b = -0.16, SE = 0.14, p = .26. These results suggested that the association between time-varying income redistribution and life satisfaction did not differ significantly for participants who paid tax and participants who received government transfer, and the association also did not differ for participants with increasing income and participants with decreasing income. In sum, the moderation analyses provided support for the strong hypothesis of income redistribution that income redistribution is beneficial to the subjective wellbeing of most people.

Discussion

Using a longitudinal sample of 57,932 Germans covering 30 years, Study 1 found evidence of the positive effect of time-varying income redistribution on life satisfaction. In other words, in German states that redistributed income to an increasing extent over the years, respondents became more satisfied with their life. Based on the model, the magnitude of the time-varying effect of income redistribution was comparable to an increase of a considerable amount of household income. Moreover, consistent with the strong hypothesis of income redistribution, the redistribution-happiness link appeared to be similar in magnitude for individuals on both the receiving and giving ends of income redistribution and for individuals experiencing upward and downward mobility.

Study 1 isolated the time-varying effects of income redistribution and income inequality from the between-state effects of income redistribution and income inequality using a hybrid effect model. As discussed in the introduction, the decision to focus on the time-varying effects was made a priori because it is a more appropriate level of analysis that can more directly inform theory and policy. In the current study, the two levels of analysis (within- and between-state) yielded different results. Income redistribution had a positive time-varying effect but a null between-state effect (at least when covariates were controlled). That is, participants reported greater life satisfaction in years with a greater level of income redistribution, but participants living in states with higher income redistribution. Income inequality (measured as net Gini) had a negative time-varying effect but a positive between-state effect. It should be noted that the between-state effects should be interpreted with caution because of the small sample size of states (there were only 16 German states in total). The differences in the time-varying and

between-state effects offers another explanation for why past research that did not use a groupcentering procedure (including cross-sectional research) found ambiguous results. The estimates for income inequality and income redistribution in these studies were an average of the withinunit and between-unit effects. To the extent that these effects differ in both magnitude and direction (like in Study 1), this may have contributed to the mixed and sometimes contradictory findings in past research.

Study 1 used a within-country approach and found that increases in income redistribution over time predicted greater life satisfaction. A within-country approach has limited generalizability. Therefore, in Study 2, I aimed to generalize results from Study 1 to a crossnational sample. Specifically, I examined the time-varying effect of income redistribution on life satisfaction, and the strong vs. weak hypotheses using a cross-national approach based on WVS and SWIID data.
STUDY 2: INVESTIGATING THE LINK BETWEEN INCOME REDISTRIBUTION AND LIFE SATISFACTION USING A CROSS-NATIONAL APPROACH Participants

Study 2 used data from the 1981 to 2014 WVS. Because the focus was on the timevarying effect of income redistribution, only countries with 2 or more waves of data on income redistribution were included in the analyses. The sample included 115,293 respondents from 35 countries from 1989 - 2012. The sample was 51.8% women, 56.6% married, and 56.4% employed (including part-time, full-time, and self-employed). Descriptive statistics by countries are presented in Table 4. There were a total of 108 country-years.

Measures

Life satisfaction. Participants reported their life satisfaction on a 10-point scale (1 "Dissatisfied" to 10 "Satisfied") to a single-item "All things considered, how satisfied are you with your life as a whole these days?"

Income. Participants reported their income using deciles based on income data from their residing country at the time of survey. The survey question on income was constructed at each country for each wave by the local WVS principal investigator(s). Country statistics (e.g., census data) were used to construct 10 income brackets that corresponded to 10 income deciles. WVS participants reported their income by choosing one of the 10 income brackets. After the data were collected, the income data were recoded as income deciles to be a measure of relative income that is comparable across countries. For example, a Bulgarian participant who participated in the WVS in 1997 would see 10 income brackets that corresponded to the 10 income deciles that were specific to Bulgaria in 1997. If the participant reported that her income

was at the second income bracket, it means that her income level was at the second decile (between 11%-20%) in Bulgaria in 1997.

Individual-level moderators. In Study 2, political leaning and egalitarian values were tested as moderators of the association between income redistribution and life satisfaction. Political leaning was measured by asking participants "In political matters, people talk of 'the left' and 'the right.' How would you place your views on this scale, generally speaking?" from 1 "Left" to 10 "Right." Respondents reported their level of egalitarian values by responding to a 10-point scale where 1 was "Income should be made more equal" and 10 was "We need larger income differences as incentives." This measure was reverse-coded such that a greater number indicated stronger endorsement of egalitarian values.

Income inequality and income redistribution. Estimates of country-level income inequality and income redistribution were obtained from the SWIID (Solt, forthcoming). Consistent with Study 1, Study 2 used net Gini (post-tax and post-welfare) as the measure of income inequality and income redistribution was expressed as % reduction in income inequality through tax and welfare. The SWIID integrates multiple existing datasets to improve the coverage and comparability of measures of income inequality and income redistribution across nations.

GDP. GDP per capita for countries was obtained from World Bank. GDP was log-2 transformed such that 1 unit change represented a twofold increase in GDP.

Economic growth. Economic growth was operationalized as the time-varying effect of GDP, which tests whether as GDP within a country increases over time, residents in the country become more satisfied. The coding procedure used to isolate the time-varying effect is discussed in the Analytical Strategy section.

Power distance. Power distance refers to the extent to which inequality in hierarchy is expected in a society. Data on power distance were retrieved from the book *Cultures and Organizations: Software of the Mind* (Hofstede, Hofstede, & Minkov, 2010). The measure was developed based on survey questions asking respondents about their reactions and preferences towards interacting with more powerful individuals.

Analytical Strategy

Multilevel modeling was used to account for the nested structure of the data with respondents (level-1) nested within countries (level-2). Multilevel modeling was carried out using the R packages lme4 and lmerTest (Bates, Maechler, Bolker, & Walker, 2015; Kuznetsova, Brockhoff, & Christesen, 2014). The intraclass correlation for life satisfaction was .168, suggesting that 16.8% of the variance in life satisfaction can be explained by the country participants resided in. This supported the use of multilevel modeling to account for the nonindependence in the data.

Similar to Study 1, a hybrid effect model was used to separate the time-varying effects of GDP, income inequality, and income redistribution from the between-region effects. To do so, GDP, net Gini, and income redistribution were centered around country-specific means. The mean-centered GDP variable tested the time-varying effect of GDP (i.e., whether as the economy in a country grew, people became more satisfied). The mean-centered net Gini and income redistribution variables tested the time-varying effects of income inequality and income redistribution. The time-varying associations were estimated based on 108 country-years. Country-specific means of GDP, net Gini, and income redistribution were included as predictors. These variables tested whether between-country differences in GDP, income inequality, and

income redistribution were associated with life satisfaction. These associations were tested with 35 countries.

Results

The purposes of the analyses were to test the time-varying effect of country-level income redistribution on life satisfaction and the potential moderating role of political leaning, egalitarian values (individual-level or level-1 moderators), economic growth, and power distance (country-level or level-2 moderators). The correlations among continuous variables are presented in Table 5.

To test the time-varying effect of income redistribution, a multilevel model was estimated with life satisfaction as the outcome. The time-varying effects of country-level net Gini and income redistribution were the main predictors. In addition, at the country level, the time-varying effect of GDP and the state-specific means of GDP, net Gini, and income redistribution were included as predictors. At the individual level, gender, employment status, marital status, educational attainment, income decile, age, and survey year were included as covariates. Results from the multilevel models are presented in Table 6. The results did not differ with and without covariates.

Similar to Study 1, married, more educated, higher income individuals tended to be more satisfied. For state-level covariates, respondents living in richer countries tended to have higher life satisfaction, b = 0.40, SE = 0.09, p < .001. State differences in income redistribution were not associated with life satisfaction, b = 0.02, SE = 0.01, p = .08. Respondents living in more unequal states reported *greater* life satisfaction, b = 0.09, SE = 0.18, p < .001. These results were consistent with Study 1.

The time-varying effects of income inequality and income redistribution on life satisfaction. The time-varying effect of GDP was a significant predictor of life satisfaction, b = 0.51, SE = 0.02, p < .001. Every twofold increase in GDP was associated with 0.51 unit increase in life satisfaction. This association between increase in GDP and life satisfaction was used to interpret the time-varying effects of country-level income inequality and income redistribution in terms of increase in GDP. As net Gini increased over time, respondents reported lower life satisfaction, b = -0.05, SE = 0.003, p < .001. A 5% increase (1SD) in net income inequality lowered life satisfaction to the same extent as a USD\$923 (11%) decrease in GDP per capita. More importantly, the time-varying effect of income redistribution was linked to greater life satisfaction, b = 0.03, SE = 0.003, p < .001. A 5% reduction in income inequality through income redistribution increased life satisfaction to the same extent as a USD\$923 (11%) decrease in GDP per capita. GDP per capita. These results suggested that respondents living in countries that experienced increases in income redistribution over time became more satisfied with their life.

The moderating roles of individual and country characteristics. In addition to examining the main effect of income redistribution, I tested the boundary conditions of the timevarying effect of income redistribution. To recap, the strong hypothesis predicted that income redistribution was beneficial or at a minimum not detrimental to subjective well-being, whereas the weak hypothesis posited that income redistribution was beneficial to some people but damaging to others. At the individual level, the weak hypothesis of income redistribution predicted that the time-varying effect of country-level income redistribution may be detrimental to life satisfaction for individuals on the political right, individuals who do not hold egalitarian values strongly, and individuals with low income. At the country level, the weak hypothesis predicted that the time-varying effect of income redistribution may be detrimental to life

satisfaction in countries experiencing economic growth and in countries where inequality in power is expected.

Moderators were tested in two ways: 1) all moderators were tested in the same model (Table 5) and 2) each moderator was tested in a separate model (Table 5). The former approach had the benefit of testing each moderator while controlling for the other moderators, but the sample size was limited to 65,955 respondents from 22 countries due to missing data at the individual and country level. The latter approach had the benefit of maximizing the statistical power to test each moderator, but it did not control for all moderators.

When all moderators were entered into a single model, the time-varying effect of income redistribution on life satisfaction was not moderated by political leaning (b = -0.001, SE = 0.002, p = .55), egalitarian values (b = -0.002, SE = 0.002, p = .39), income (b = -0.002, SE = 0.002, p = .39), or economic growth (b = 0.04, SE = 0.02, p = .08). Power distance significantly moderated the time-varying effect of income redistribution, b = 0.002, SE = 0.0003, p < .001. Figure 2 illustrates this interaction. Contrary to the weak hypothesis' prediction that income redistribution may be detrimental in cultures that expected greater social hierarchy, income redistribution was more positively linked to life satisfaction in cultures that scored higher on the power distance index. A simple slope analysis showed that increases in income redistribution over time significantly predicted greater life satisfaction in cultures low in power distance index (1SD below mean), b = 0.04, SE = 0.006, p < .001, but especially in cultures high in power distance index (1SD above mean), b = 0.12, SE = 0.010, p < .001.

When the moderators were analyzed separately, power distance remained a significant moderator, b = 0.002, SE = 0.0003, p < .001. The time-varying effect of income redistribution was not moderated by political leaning (b = -0.001, SE = 0.002, p = .47) or economic growth (b

= -0.005, SE = 0.005, p = .32). With this alternative approach, egalitarian values (b = -0.003, SE = 0.001, p = .008; Figure 3) and income (b = -0.003, SE = 0.001, p = .007; Figure 4) emerged as significant moderators. Simple slope analyses showed that the time-varying effect of income redistribution was linked to greater life satisfaction for individuals with high egalitarian values (b = 0.02, SE = 0.004, p < .001), and this positive association was stronger for people with low egalitarian values (b = 0.04, SE = 0.004, p < .001). The association between income redistribution and life satisfaction was weaker for high-income individuals (b = 0.02, SE = 0.004, p < .001) relative to low-income individuals (b = 0.03, SE = 0.004, p < .001). Although the interactions were significant, both simple slopes were positive. That is, even though the time-varying effect of income redistribution was weaker for individuals with high egalitarian value and high-income individuals, increases in income redistribution were nevertheless associated with increases in life satisfaction.

Across analytical approaches, only power distance consistently moderated the association between time-varying income redistribution and life satisfaction. However, power distance moderated the time-varying effect of income redistribution in unexpected ways. Increases in income redistribution had stronger links with life satisfaction for individuals living in countries with *high* power distance. An additional exploratory analysis was conducted to test the robustness of this significant interaction. By examining Table 5, power distance and income redistribution had a strong negative correlation, r = -.71. Societies with greater income redistribution tended to expect less inequality in power. Because two variables were very strongly correlated, an interaction term between income redistribution and power distance may inadvertently reflect a curvilinear relation between income redistribution and life satisfaction (i.e., an interaction between income redistribution and income redistribution). To test this possibility, I

re-ran the moderation model with all moderators and added time-varying-income-redistributionsquared (an interaction term between time-varying income redistribution and time-varying income redistribution) as a predictor. However, the moderating role of power distance remained significant, b = .002, SE = .0003, p < .001.

Discussion

Using cross-national data from 115,293 participants covering 24 years, I found evidence for the positive link between time-varying income redistribution and life satisfaction. Participants were more satisfied in countries that experienced increases in income redistribution over time. To test the strong vs. weak hypotheses of income redistribution, egalitarian values, political leaning, income, economic growth, and power distance were examined as potential moderators. The association between time-varying income redistribution and life satisfaction was stronger for low-income individuals, people with lower egalitarian values, and cultures that expect and accept inequality in power. Political leaning and economic growth showed no evidence of their moderating roles. The results supported the strong hypothesis of income redistribution such that over-time reduction in income inequality through income redistribution was associated with greater life satisfaction for individuals with varying levels of income, egalitarian values, and political attitudes, for countries with a growing economy, and for cultures that expected inequality.

Similar to Study 1, Study 2 also used a group-mean centering procedure to estimate the time-varying and between-country effects of income redistribution and income inequality. Income redistribution had a positive time-varying effect and a null between-country effect (when control variables were included), suggesting that increases in income redistribution over time was linked to greater satisfaction but the mean level of income redistribution was not associated

with greater life satisfaction. Net income inequality had a negative time-varying effect and a positive between-country effect, meaning that decreases in income inequality lowered life satisfaction, but living in countries with higher average level of income inequality was linked to greater satisfaction. These differential results at the two different levels of analysis appeared to be robust across Studies 1 and 2.

GENERAL DISCUSSION

The recent increase in income inequality in modern societies has led to a growing body of empirical research on income inequality and well-being. However, virtually no study in psychology has examined the psychological consequences of income redistribution. The current dissertation introduced a measure of income redistribution calculated based on market and net Gini. Across two studies totaling over 150,000 participants, I examined the overall main effect of change in income redistribution on life satisfaction and the moderating roles of individual, national, and cultural characteristics.

Increases in Income Redistribution over Time Predicted Greater Life Satisfaction

I found that increases in income redistribution over time predicted increases in life satisfaction by using an analytical approach that isolated the time-varying effects of income redistribution. This finding corroborated earlier research on European countries (Hajdu & Hajdu, 2014). The results suggest that over-time reduction in income inequality through tax and welfare policies is linked to greater subjective well-being. Based on the models, the time-varying effects of income redistribution were linked to increases in life satisfaction that were similar to the predicted effects of increases in a substantial amount of household income and GDP. The current studies provided a starting point for estimating whether social policies aimed at reducing inequality may be worth the expense from a life satisfaction perspective.

There are several reasons why increases in income redistribution may improve life satisfaction. First, income redistribution may improve overall life satisfaction because income has diminishing returns on life satisfaction (e.g. Diener et al., 2010; Kahneman & Deaton, 2010). Due to diminishing returns, the same amount of income should improve the well-being of lowincome individuals more than the well-being of high-income individuals. Therefore,

redistributing income from the rich to the poor should have a net positive effect on life satisfaction for the society as a whole. Second, by reducing the gap in disposable income among the rich and the poor, income redistribution may help reduce certain negative consequences of income inequality, such as greater income comparison, perception of unfairness, and social disharmony (Cheung & Lucas, 2016; Oishi, Kesebir, Diener, 2011). These explanations are not meant to be exhaustive or mutually exclusive, and there may be multiple mechanisms through which income redistribution influences citizens' well-being. Future research should further assess the merits of these plausible explanations.

A Strong Hypothesis of Income Redistribution

In addition to testing the time-varying effect of income redistribution, I tested the strong hypothesis that income redistribution is beneficial to most against the weak hypothesis that income redistribution is beneficial to some but damaging to others. Income redistribution (at least as defined and measured in the current study) reduces income inequality through tax and welfare, and increases in income redistribution may pose a greater financial burden on tax-paying and high-income individuals. Therefore, it is possible that increases in income redistribution may be beneficial to the well-being of low-income and welfare-receiving individuals but detrimental to the well-being of taxing-paying and high-income individuals. Moreover, people may react to income redistribution differently, and income redistribution may be detrimental to well-being if reducing inequality does not align with one's political views, attitudes, and cultural values. Therefore, across the two studies, I examined whether changes in income redistribution may have different associations with life satisfaction depending on tax and welfare, income, income mobility, political leaning, egalitarian values, economic growth, and power distance. Across different individual and societal characteristics, living in regions with

increasing income redistribution was linked to significantly greater life satisfaction. These results favored the strong hypothesis of income redistribution over the weak hypothesis.

Financial situations. The current studies found that increases in income redistribution predicted greater life satisfaction for people who had low or high income, paid tax or received welfare, experienced downward or upward income mobility, and lived in countries experiencing economic growth or economic downturn. If the time-varying effect of income redistribution was purely driven by the fact that income has diminishing return on happiness, individuals with higher income should have lower life satisfaction as income redistribution increases because they needed to pay a greater proportion of tax from their income. The results from Study 2 showed some evidence that change in income redistribution had a weaker association with life satisfaction for high-income individuals compared to low-income individuals. However, the simple slope analyses revealed that individuals on both the receiving (low income/welfare receiving) and giving (high income/tax paying) ends of income redistribution tended to have greater life satisfaction if they lived in regions with increasing income redistribution. Therefore, these findings suggest that the diminishing returns of income on happiness are not the only mechanism behind the positive time-varying effect of income redistribution. It is plausible that income redistribution may have benefited high-income individuals by promoting social harmony, perception of fairness, or even a sense of generosity or meaning through their monetary contribution to the broader societies.

The current studies also found consistent null results for the moderating roles of mobility in income and GDP. The time-varying effect of income redistribution on life satisfaction was similarly positive in years when respondents experienced upward mobility and in years when they experienced downward mobility. This result seems to be inconsistent with the past finding

that individuals with greater income mobility tend to be less supportive of redistribution policy (Alesina & La Ferrara, 2005). A possible interpretation is that while *preferences* for income redistribution differ among people with greater income mobility and people with lower income mobility, the *effect* of income redistribution on these individuals' subjective well-being may be similar. When asked about preferences for redistribution policies, people with greater income mobility may find the prospect of paying a greater proportion of income to tax aversive, and thus, show less support for such policies. However, income redistribution may have benefits that people with greater income mobility do not take into account when expressing their preferences for redistribution policies.

Attitudes and values. In Study 2, I examined how individual and cultural values may interact with income redistribution to predict life satisfaction. The results suggest that income redistribution was linked to greater life satisfaction to the same degree for respondents who were on the political left as for those on the political right. The null result for political leaning as a moderator did not replicate earlier research, which found that the positive effect of income redistribution was stronger for those on the left as compared to those on the right (Hadju & Hadju, 2014). Notably, in the study by Hadju and Hadju (2014), although the association was weaker for right-winged individuals, the simple slopes for both left- and right-winged individuals were significantly positive. Therefore, these results were consistent with the strong hypothesis of income redistribution.

Egalitarian values significantly moderated the association between income redistribution and life satisfaction in the analysis that analyzed each moderator separately. Based on the weak hypothesis of income redistribution, I expected that income redistribution should be more beneficial to the well-being of individuals who endorsed egalitarian values strongly. This was not

the case in Study 2 – increases in income redistribution over time were more strongly linked to life satisfaction for individuals with lower egalitarian values. This finding was puzzling. One possible explanation is that the measure of egalitarian values may not be valid in this sample. In the WVS, the two anchors of the item on egalitarian values were "Income should be made more equal" and "We need larger income differences as incentives." However, these statements may not represent two polar opposites. For example, it is possible to have high market income inequality (e.g., large differences in salary) as incentives and low net income inequality (i.e., disposable income is made more equal) at the same time. Perhaps this measurement issue biased respondents' report of their endorsement of these statements. Future research should carefully revise measurements of people's attitudes towards income inequality to take into account the differences in market and net income inequality. Given that the significant moderation was only found in one of the analytical approaches and that there is a measurement concern of egalitarian values, more evidence is needed to support the potential moderating role for egalitarian values. The bottom line is that the results supported the strong hypothesis of income redistribution -- the time-varying effect of income redistribution on life satisfaction was positive for individuals low or high in egalitarian values.

At the cultural level, income redistribution had a stronger positive association with life satisfaction in cultures with high power distance index. This finding again ran counter to the prediction based on the weak hypothesis of income redistribution. Power distance refers to the extent to which members of lower social hierarchy accept and expect inequality in power. It is plausible that acceptance and expectation of inequality do not imply *preference* for inequality. A plausible explanation of the current results is that cultures with high power distance may also have a strong preference for income equality. Thus, in cultures which accept inequality but prefer

equality, governmental efforts to reduce income inequality may be perceived as an unexpected benefit, whereas in cultures with low power distance (cultures that expect income equality), income redistribution may be seen as what a government ought to do. To the extent that an unexpected benefit leads to greater increase in well-being than an expected benefit, income redistribution could be more beneficial to well-being in cultures with higher power distance. I acknowledge that this explanation is highly speculative, and future research should generalize the current finding beyond the 23 countries examined before incorporating power distance as a theoretically relevant moderator. To summarize the moderation analyses, the results supported the strong hypothesis of income redistribution such that income redistribution is beneficial to the well-being of most people.

Increases in Net Income Inequality over Time Predicted Lower Life Satisfaction

The time-varying effect of net income inequality was consistently negative when predicting life satisfaction. As reviewed in the introduction, past research has found mixed results for the link between income inequality and life satisfaction (e.g., Verme, 2011; Rözer & Kraaykamp, 2013; Zagorski et al., 2014). In studies that have examined income inequality and income redistribution simultaneously and specifically tested the time-varying effect of income inequality, increases in income inequality over time consistently predicted lower life satisfaction, at least based on samples from Germany (Schwarze & Härpfer, 2007; Study 1) and 33 countries around the world (Study 2). Therefore, to the extent that the data are available, future research should 1) examine income inequality and income redistribution simultaneously and 2) separate the time-varying effect of income inequality from the between-region effect. In the current studies, income inequality was moderately correlated with income redistribution (r = .29 in Study 1 and r = .46 in Study 2). Thus, in studies that did not include income redistribution, the

estimates for income inequality could be biased. In addition, Neuhaus and Kalbfleisch (1998) have shown that if a model ignores the differences of the within- and between-region effects of a certain predictor, the estimate of the predictor would neither capture the within- nor between-region effects. In short, future research should carefully consider modeling issues related to misspecification and confounding variables.

Differences in Within-region and Between-region Associations between Income Inequality, Income Redistribution, and Life Satisfaction

Interestingly, by isolating the time-varying effects from the between-region associations of income redistribution, income inequality, and life satisfaction, both income redistribution and income inequality showed different associations with life satisfaction when examined at the between-region level. Before speculating on why such differences exist, it should be noted that the between-region associations were found with relatively small samples of 16 German states in Study 1 and 33 countries and Study 2 (whereas the within-regions associations were tested with 440 state-years and 108 country-years). In Studies 1 and 2, when covariates were taken into account, living in regions that on average redistributed income to a greater degree did not relate to respondents' life satisfaction judgment, whereas living in regions that on average had greater level of income inequality was associated with increased life satisfaction.

The differences in the within-region and between-region effects could be due to the fact that people have different reactions towards *change* in income redistribution and inequality and the average levels of redistribution and inequality. Using income inequality as an example, Chambers, Swan, and Heesacker (2014) demonstrated that Mechanical Turk workers tended to underestimate income inequality but overestimate the *increase* in income inequality from 1970-2010. Actual changes in income inequality likely play a role in the perceptions of change in

income inequality. The overestimation of increases in income inequality may make salient the widening income gap. Income inequality tends to have negative connotations (Charles-Coll, 2011), and when it is made salient in people's mind, people may be more likely to think about social injustice and unfairness (the negative effect of income inequality) rather than the possibility of obtaining a better income (the positive effect of income inequality). Therefore, the overestimation of the change in income inequality may lead to the perceptions of social injustice, which lowers well-being. Future research should further disentangle the relations between actual (market and net) income inequality, perceived income inequality, and the positive and negative consequences of income inequality.

With regard to the positive between-region effect of income inequality, regions with greater income inequality have greater differences in income. These differences could have stemmed from more diverse sources of income or career options, which may be beneficial for life satisfaction. It also remains a possibility that the positive between-region effect of income inequality is confounded by a third variable.

The observed differences in the within- and between-region effects of income redistribution and income inequality suggest that past research may have resulted in mixed findings because past estimates of the associations of income inequality and life satisfaction were a mixture of the within- and between-regions effects. Indeed, this concern may also apply to research on inequality and other outcomes (e.g., health, social trust). Therefore, an implication from the current studies is that future research should carefully consider the level of analysis and use longitudinal designs that can separate the within-regions effects from the between-regions effects.

Future Directions, Limitations, and Conclusions

This dissertation discussed two different measures of income inequality -- market Gini and net Gini. Past research has not consistently reported whether market or net Gini was used in analyses, and this omission may have contributed to the mixed results found in earlier research. Although the two measures of income inequality tend to be highly correlated, they were not perfectly correlated. For example, in Study 2, the correlation between net and market Gini across countries was 0.57. The two measures of income inequality could have distinct effects on people's reaction. Imagine a society where market Gini is very high (e.g., there are large differences in salary) and net Gini is very low (i.e., there are little differences in disposable income). To the extent that people are aware of others' pre-government income (e.g., people may have a rough idea of the difference in salaries of physicians, investment bankers, and cashiers), then people may perceive a high degree of income inequality even though income inequality after government-level income redistribution is relatively low. Future psychological research should clearly specify the sources of income used to calculate Gini to improve the comparability of research across fields. This issue is particularly salient in cross-national research because countries calculate income inequality in different ways. The recent development of the SWIID provides an excellent resource for researchers because it standardizes measures of market and net income inequality across countries covering many years.

The current dissertation made an important methodological contribution by introducing a measure of income redistribution to the psychology literature. While the current studies focused on life satisfaction as the dependent variable, future research should further examine the consequences of income redistribution on outcomes beyond subjective well-being, such as children's outcomes, voting behavior, group processes, and physical health. In addition, the

measurement of income redistribution can be easily adapted to study other phenomena. For example, it is possible to calculate the extent to which income redistribution reduces poverty by comparing individuals' pre- and post-government income to a poverty line (e.g., half of the median regional income). Therefore, this measure of income redistribution opens up many new research directions.

Some limitations in the dissertation should be noted. First, the current studies were correlational, and the uses of "effect" throughout the paper did not imply causation. The current results can be complemented by future research that tracks participants over time before and after the implementation of policies that aim to reduce income inequality. Second, although the results favor the strong hypothesis of income redistribution, it remains plausible that the effect of income redistribution may depend on other socio-demographic characteristics and values not examined in the current analyses. Third, the current studies used a secondary analysis approach, and not all potentially relevant variables were measured in GSOEP or WVS. For example, measures of perceptions of income inequality, income redistribution, income mobility, social injustice would be very helpful in identifying the causal process underlying how income redistribution and income inequality relate to life satisfaction.

To conclude, based on 30 years of data from Germany and 24 years of data from across the world, increases in state- and national-level income redistribution over time were linked to greater life satisfaction, and this link was positive across individual, national, and cultural characteristics. The strong hypothesis of income redistribution – the idea that income redistribution benefits most people – gains empirical support from the current results. That is, income redistribution does not simply redistribute happiness. Rather, by redistributing income from the rich to the poor, citizens experience in life satisfaction across the board. For example,

increases in income redistribution predicted greater satisfaction for tax-paying individuals *and* welfare-receiving individuals, for people on the political left *and* people on the political right, and for the poor *and* the rich. The use of subjective well-being to guide social policy has gained increasing attention (Diener, Oishi, & Lucas, 2015). The current studies provide a critical piece of evidence that redistribution policies play an important role on improving societal well-being.

APPENDIX

Table 1	la.
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Descriptive Statistics of Individual-level Continuous Variables of Participants during Their First Year of Reporting Complete Data

State	Life Satisfaction		Age		Post-gov Income		Tax and Welfare		Year of Edu		No. of HH Adult		No. of HH Children	
	Satisi	action			(thousands)		(thous	sands)	Lut	••	110	un	Children	
	M	SD	М	SD	М	SD	М	SD	M	SD	М	SD	М	SD
Schleswig-Holstein	7.61	1.80	43.2	18.5	36.6	28.3	5.7	22.3	11.4	2.5	2.15	0.83	0.65	0.95
Hamburg	7.45	1.88	43.2	18.1	36.2	23.4	7.6	21.1	11.7	2.7	2.09	0.82	0.64	0.94
Lower Saxony	7.51	1.88	42.2	18.2	37.9	24.7	5.6	21.9	11.2	2.4	2.35	0.93	0.74	1.09
Bremen	7.39	2.18	44.3	18.6	35.6	55.1	6.3	54.1	11.6	2.7	2.07	0.80	0.73	1.09
North-Rhine-Westfalia	7.47	1.88	41.4	17.6	38.4	28.1	8.2	24.6	11.3	2.7	2.31	0.91	0.73	1.04
Hessen	7.49	1.86	41.1	17.3	42.4	40.0	11.6	35.3	11.5	2.8	2.33	0.95	0.74	1.03
Rheinland-Pfalz	7.49	1.83	42.1	18.5	36.6	20.9	6.4	18.8	11.0	2.4	2.39	0.94	0.75	1.04
Baden-Wuerttemberg	7.51	1.84	40.4	17.7	40.5	23.9	10.6	21.5	11.1	2.6	2.40	1.00	0.81	1.08
Bavaria	7.51	1.82	41.9	18.0	40.8	29.7	9.8	25.3	11.3	2.5	2.30	0.89	0.67	0.93
Saarland	7.21	1.98	43.4	18.6	36.6	20.7	3.7	20.0	11.2	2.5	2.36	1.02	0.66	0.92
Berlin	7.07	1.97	41.5	17.4	35.8	25.9	6.7	23.9	12.1	2.9	2.07	0.86	0.63	1.00
Brandenburg	6.75	1.84	43.5	18.2	33.0	19.5	2.7	17.5	11.8	2.3	2.27	0.84	0.59	0.90
Mecklenburg-Vorpommern	6.67	1.90	41.7	18.0	31.7	18.5	2.1	15.7	11.7	2.3	2.23	0.86	0.67	0.97
Saxony	6.71	1.81	42.6	18.1	31.6	17.0	2.4	15.6	11.9	2.4	2.21	0.78	0.60	0.86
Saxony-Anhalt	6.63	1.86	42.8	18.1	32.4	18.3	2.2	16.9	11.7	2.3	2.33	0.93	0.62	0.96
Thuringia	6.69	1.82	42.9	18.3	31.3	16.6	1.5	14.8	11.7	2.2	2.28	0.85	0.57	0.86
Full Sample	7.34	1.88	41.8	17.9	37.9	27.1	7.4	24.0	11.4	2.6	2.30	0.91	0.70	1.00

Notes. Post-gov Income = Post-government household income; Year of Edu. = Years of education; No. of HH Adult = Number of household adults; No. of HH Children = Number of household children.

Table 1b.				
Descriptive Statistics	of States	Aggregated	across	Individuals

Stata	#	<u> </u>	Averag	e	Aver	age In	come		Not Ci		Income			%	%	%	%
State	Yr	Life	Satisfa	ction	(tł	iousan	ds)		Net GI	nı	Ree	distrib	ution	Tax	Emp	Mar	F
		М	Min	Max	М	Min	Max	М	Min	Max	М	Min	Max				
Schleswig-Holstein	30	7.32	6.86	7.71	37.3	30.2	45.7	.30	.25	.40	.16	.12	.22	63.0	61.4	63.7	52.6
Hamburg	30	7.19	6.69	7.56	36.8	30.0	45.3	.31	.26	.39	.16	.12	.20	65.0	59.9	53.0	53.1
Lower Saxony	30	7.18	6.96	7.41	38.6	31.2	44.6	.30	.26	.34	.16	.12	.20	62.1	60.0	64.3	51.3
Bremen	30	7.23	6.77	7.54	33.6	23.0	57.4	.32	.25	.58	.25	.19	.33	50.9	52.5	56.9	52.8
North-Rhine-Westfalia	30	7.16	6.89	7.43	39.2	31.7	45.2	.31	.27	.36	.15	.11	.19	66.7	60.7	65.3	51.5
Hessen	30	7.21	6.90	7.52	41.7	33.3	50.0	.31	.27	.40	.14	.10	.18	69.2	64.8	66.4	51.3
Rheinland-Pfalz	30	7.22	6.94	7.46	36.9	32.2	41.1	.28	.25	.32	.15	.11	.20	63.9	58.8	64.2	52.5
Baden-Wuerttemberg	30	7.11	6.88	7.49	41.1	33.9	47.2	.28	.24	.32	.12	.08	.16	71.2	64.7	65.1	51.1
Bavaria	30	7.16	6.95	7.36	40.9	32.5	48.7	.29	.25	.35	.13	.10	.17	69.9	65.7	64.3	51.7
Saarland	14	7.08	6.76	7.37	36.9	34.0	39.1	.29	.24	.31	.20	.17	.22	56.2	56.3	57.9	53.4
Berlin	30	6.69	6.26	7.16	35.6	31.0	41.5	.30	.25	.36	.17	.09	.24	62.1	64.3	53.5	52.2
Brandenburg	22	6.46	6.15	6.78	33.2	30.6	36.3	.29	.25	.34	.23	.11	.31	51.4	58.9	60.7	52.1
Mecklenburg-	$\gamma\gamma$	6 5 8	6.02	6.08	326	20.6	35 5	30	24	35	21	10	20	513	61 /	50.0	523
Vorpommern		0.58	0.02	0.98	52.0	29.0	55.5	.50	.24	.55	.41	.10	.29	51.5	01.4	59.9	52.5
Saxony	22	6.55	6.07	6.87	32.0	30.1	34.7	.27	.23	.30	.22	.12	.26	52.7	61.5	62.1	52.1
Saxony-Anhalt	22	6.45	6.08	6.90	32.6	30.6	35.5	.28	.24	.33	.22	.11	.27	52.2	60.2	63.1	52.6
Thuringia	22	6.41	6.13	6.97	31.7	29.7	34.8	.28	.22	.33	.23	.13	.27	50.3	60.0	60.3	52.4
State Averages		6.94	6.02	7.71	36.3	23.0	57.4	.30	.22	.58	.18	.08	.33	60.0	60.7	61.3	52.2

Notes. # Yr = Number of years; % Tax = Percent of participants with higher post-government income than pre-government income; % Emp = Percent of employed participants; % Mar = Percent of married participants; % F = Percent of women.

Table 2.

6		2							
	2	3	4	5	6	7	8	9	
1. Life Satisfaction	-0.042*	0.121*	0.038*	0.028*	0.210*	0.145*	0.138*	-0.040*	
2. Age		-0.003	-0.278*	-0.338*	-0.140*	-0.511*	0.037*	0.070*	
3. Year of Education			-0.104*	-0.060*	0.305*	0.180*	0.183*	0.157*	
4. Number of Household Adults				0.142*	0.471*	0.289*	-0.085*	-0.108*	
5. Number of Household Children					0.164*	0.187*	-0.044*	-0.089*	
6. Post-government Household Income						0.482*	0.089*	-0.087*	
7. Tax and Welfare							0.007	-0.125*	
8. Net Gini								0.288*	
9. Income Redistribution								—	
* 001									

Correlations among Continuous Variables in Study 1

* p < .001

			T 4 4
	Main Effect	Main Effect	Interaction
	Model	Model	Model
	without	with	
	Covariates	Covariates	
Intercept	7.115^{***}	7.190^{***}	7.176***
	(0.006)	(0.010)	(0.010)
Time-Varving Predictors			
Net Gini	-0.583***	-0.451**	-0.380*
	(0.167)	(0.166)	(0.167)
Income Redistribution (IR)	0.485 ***	0.674***	0.713***
	(0.119)	(0.118)	(0.119)
Household Income	(0111))	0.148***	0.140^{***}
Household meome		(0.005)	(0.005)
Madamatan		(0.003)	(0.005)
			0.01.4***
Tax and welfare			0.014
			(0.001)
Interaction Terms			
IR X Tax and Welfare			0.020
			(0.031)
IR X Household Income			-0.157
			(0.139)
Individual-level Covariates			. ,
Women		0.088^{***}	0.087^{***}
		(0.012)	(0.012)
Δαρ		-0.007^{***}	-0.006^{***}
Age		-0.007	-0.000
II		(0.0004)	(0.0004)
Unemployed/Not in labor force		-0.0002	0.024
		(0.007)	(0.008)
Years of education		0.027	0.027
		(0.002)	(0.002)
Number of household adults		-0.089***	-0.090***
		(0.004)	(0.004)
Number of household children		-0.023***	-0.021***
		(0.004)	(0.004)
Individual-specific means of household income		0.339***	0.323***
1		(0.008)	(0.008)
		(()
Marital Status (married as reference)			
Single		-0 085***	-0.077***
Single		(0.003)	-0.077
		(0.012)	(0.012)

Table 3.

Unstandardized Coefficients and Standard Errors from Multilevel Models in Study 1

Table 3. (cont'd)			
Widowed		-0.242***	-0.238***
		(0.019)	(0.019)
Divorced		-0.292***	-0.291***
		(0.016)	(0.016)
Separated		-0.487***	-0.487***
		(0.022)	(0.022)
Survey year		-0.005^{***}	-0.005***
		(0.0004)	(0.0004)
Years of Participation	-0.015***	-0.012***	-0.013***
	(0.001)	(0.001)	(0.001)
State-level Covariates (state-specific means)			
Net Gini	1.980^{***}	1.410^{**}	1.476^{**}
	(0.454)	(0.449)	(0.449)
IR	-3.983***	0.393	0.428
	(0.132)	(0.481)	(0.480)
Household Income		1.747^{***}	1.722^{***}
		(0.182)	(0.182)

Note: *p<.05**p<.01***p<0.001

Country	# of Waves	Ν	Life Sat	isfaction	A	ge	Inco	ome	Egali Va	tarian lue	Political Right		
			М	SD	М	SD	М	SD	М	SD	М	SD	
Argentina	5	2121	7.13	2.27	42.3	17.3	5.14	2.85	5.66	3.22	5.84	1.99	
Australia	4	4026	7.46	1.83	47.0	17.1	5.24	2.72	5.57	2.59	5.35	1.92	
Armenia	2	2945	4.63	2.46	41.3	17.3	3.57	1.94	4.83	2.95	5.49	2.27	
Brazil	2	3016	7.48	2.27	37.8	14.2	3.38	2.20	5.21	3.20	5.44	2.59	
Bulgaria	2	1738	4.92	2.34	47.1	17.1	4.66	2.46	5.43	2.77	5.31	2.35	
Belarus	2	3441	4.97	2.27	44.3	16.8	5.22	2.23	5.14	2.72	5.35	1.78	
Canada	2	3483	7.77	1.81	47.2	17.3	5.30	2.81	5.50	2.56	5.44	1.84	
Chile	5	3864	7.13	2.05	41.8	15.9	4.53	2.32	6.64	2.90	5.24	2.05	
China	5	5327	6.82	2.24	41.1	13.7	4.76	1.96	5.79	3.07	6.55	2.43	
Colombia	4	7040	8.37	1.80	37.1	13.3	4.18	2.38	5.30	3.18	5.39	1.82	
Estonia	2	2498	5.73	2.24	46.6	17.5	4.31	2.08	6.54	2.53	5.59	1.92	
Finland	3	1826	7.80	1.66	44.6	17.1	4.08	2.48	6.41	2.33	6.04	2.21	
Georgia	2	1450	4.95	2.25	45.6	17.2	3.48	1.78	4.13	2.78	4.77	1.78	
Germany	2	3434	6.93	1.98	47.2	17.2	4.89	2.07	6.37	2.41	5.67	1.92	
Hungary	2	967	5.88	2.13	45.7	16.8	4.00	1.60	6.42	2.32	5.53	2.82	
India	4	6180	6.26	2.44	36.4	12.9	4.02	1.99	5.99	3.41	5.63	1.85	
Japan	6	3823	6.82	1.93	49.3	15.5	4.50	2.83	5.35	2.12	6.06	2.68	
Mexico	6	6293	8.07	2.13	36.1	14.1	4.22	2.69	5.34	3.23	5.56	2.52	
Moldova	3	2847	4.62	2.43	42.6	16.2	4.15	2.22	4.48	2.79	5.43	2.04	
Netherlands	2	2350	7.58	1.34	51.8	16.8	4.18	2.27	5.50	2.34	5.70	1.96	
New Zealand	3	2444	7.73	1.92	47.6	16.1	6.13	2.79	5.63	2.62	5.57	1.80	
Norway	2	1969	7.83	1.70	44.5	15.8	5.40	2.85	5.81	2.26	6.58	2.52	
Philippines	3	2350	7.00	2.68	40.5	15.3	4.49	2.27	4.54	2.92	5.72	2.21	
Poland	3	1844	7.03	2.03	47.0	17.5	4.25	1.91	4.44	2.80	5.63	2.44	
Romania	3	4074	5.81	2.51	47.0	17.1	4.19	2.70	5.38	3.18	5.19	2.22	
Singapore	2	3203	7.08	1.70	37.3	15.5	4.96	2.09	4.74	2.42	6.02	2.33	
Slovenia	3	1964	7.32	1.92	47.6	17.6	4.93	1.81	6.90	2.53	4.70	1.91	
South Africa	2	5090	6.81	2.53	37.4	15.4	4.95	2.43	5.47	3.13	5.47	2.26	

Table 4a.Descriptive Statistics of Individual-level Continuous Variables in Study 2

Table 4a. (cont'd))											
Spain	5	3786	6.94	1.77	46.1	17.9	4.43	1.75	5.63	2.69	5.35	2.04
Sweden	3	2991	7.72	1.69	47.3	17.3	5.58	2.38	5.36	2.44	5.39	2.04
Switzerland	3	3106	8.09	1.71	48.2	17.0	5.39	2.51	6.84	2.72	5.78	1.96
Ukraine	2	3116	4.56	2.42	44.9	16.3	3.89	2.24	4.26	2.68	5.14	2.46
United States	4	5740	7.52	1.85	47.3	17.1	5.53	2.26	5.30	2.54	6.50	2.85
Uruguay	3	2830	7.40	2.06	45.8	18.0	4.71	2.08	5.81	2.97	5.84	1.99
Venezuela	2	2117	7.06	2.80	36.2	14.1	4.26	2.50	5.47	3.37	5.35	1.92
Full Sample			6.90	2.36	43.1	16.6	4.61	2.42	5.51	2.91	5.62	2.27

Country	# of	N	% Women	% Employed	% Married	% HS Grad		
	Waves	1 V	70 WOMEN	70 Employed	70 Wanned	70 115 Oldu		
Argentina	5	2121	52.5	50.9	59.1	21.2		
Australia	4	4026	52.8	62.6	65.8	53.5		
Armenia	2	2945	57.8	43.9	62.6	61.5		
Brazil	2	3016	53.5	56.7	57.6	15.3		
Bulgaria	2	1738	52.5	46.5	70.9	34.9		
Belarus	2	3441	57.0	59.9	62.9	51.3		
Canada	2	3483	58.5	56.0	60.4	45.5		
Chile	5	3864	52.7	54.8	61.2	28.4		
China	5	5327	48.2	77.6	83.4	34.6		
Colombia	4	7040	48.9	59.7	59.7	58.9		
Estonia	2	2498	55.6	60.2	61.8	49.7		
Finland	3	1826	51.2	50.9	60.7	30.3		
Georgia	2	1450	52.7	33.9	67.8	62.8		
Germany	2	3434	55.2	48.0	63.6	30.3		
Hungary	2	967	53.4	50.4	55.3	42.0		
India	4	6180	39.3	55.5	76.8	52.3		
Japan	6	3823	51.4	66.1	75.9	74.6		
Mexico	6	6293	49.0	57.2	62.4	35.1		
Moldova	3	2847	53.0	51.4	70.1	43.3		
Netherlands	2	2350	50.3	50.7	64.3	35.8		
New Zealand	3	2444	55.2	66.3	72.3	58.6		
Norway	2	1969	49.1	73.1	69.5	53.5		
Philippines	3	2350	49.9	54.6	75.9	48.0		
Poland	3	1844	51.5	48.3	62.5	30.2		
Romania	3	4074	54.4	45.4	70.1	49.2		
Singapore	2	3203	52.9	60.3	55.4	36.1		
Slovenia	3	1964	55.3	49.4	65.9	33.9		
South Africa	2	5090	49.8	45.7	51.7	33.1		
Spain	5	3786	50.5	45.9	64.1	24.0		
Sweden	3	2991	49.7	65.8	65.0	58.6		
Switzerland	3	3106	52.4	62.8	63.4	37.4		
Ukraine	2	3116	61.1	56.2	70.3	45.5		
United States	4	5740	51.9	60.2	63.1	62.1		
Uruguay	3	2830	55.8	54.2	58.3	19.4		
Venezuela	2	2117	48.9	54.5	57.6	37.2		
Full Sample		115293	51.8	56.4	65.1	43.6		

Table 4b.Descriptive Statistics of Individual-level Categorical Variables in Study 2

Table 4c.	
Descriptive Statistics of Country-level Variables in Study 2	
11 C	

Country	# of	N	Average			GD	GDP per capita			Net Gini			Income			
Country	Waves	IN	Life	Satisfa	ction							Rec	listribut	tion		
			М	Min	Max	М	Min	Max	М	Min	Max	М	Min	Max		
Argentina	5	2121	7.10	6.90	7.29	7586	7408	7765	43.8	42.9	44.8	5.6	4.9	6.3	49	
Australia	4	4026	7.44	7.29	7.60	40624	20364	67512	31.4	30.4	33.1	33.8	31.5	35.3	38	
Armenia	2	2945	4.76	4.28	5.24	1972	523	3422	37.2	35.5	38.8	2.7	-1.0	6.4	-	
Brazil	2	3016	7.49	7.35	7.63	4233	2677	5788	50.3	48.7	51.9	12.3	12.3	12.3	69	
Bulgaria	2	1738	4.93	4.58	5.27	2566	1347	3786	29.7	28.7	30.7	5.5	2.9	8.1	70	
Belarus	2	3441	5.06	4.34	5.78	3879	1452	6306	26.9	25.9	28.0	0.4	-2.7	3.5	-	
Canada	2	3483	7.77	7.71	7.83	32138	24032	40245	31.6	31.5	31.7	32.3	31.9	32.7	39	
Chile	5	3864	7.13	6.85	7.28	8546	5133	14511	49.8	48.0	51.5	5.3	4.9	5.6	63	
China	5	5327	6.80	6.53	6.97	2597	604	6093	47.3	38.3	53.5	-0.8	-4.6	4.0	80	
Colombia	4	7040	8.37	8.31	8.42	4569	2552	7763	50.1	47.6	51.6	3.3	2.6	4.0	67	
Estonia	2	2498	5.61	5.02	6.20	10263	3348	17179	33.0	32.8	33.3	24.6	15.8	33.4	-	
Finland	3	1826	7.80	7.77	7.82	32373	25778	38968	24.0	22.1	25.8	49.5	44.6	54.5	33	
Georgia	2	1450	4.95	4.95	4.95	2441	2441	2441	42.1	42.1	42.1	10.1	10.1	10.1	-	
Germany	2	3434	6.94	6.91	6.96	31706	27012	36400	27.6	27.0	28.2	42.9	42.2	43.6	35	
Hungary	2	967	5.88	5.88	5.88	12907	12907	12907	26.5	26.5	26.5	43.9	43.9	43.9	-	
India	4	6180	6.18	5.37	6.74	514	376	830	46.5	45.0	48.9	-0.8	-1.6	-0.3	77	
Japan	6	3823	6.80	6.51	6.98	38663	35781	42909	30.1	29.5	30.9	33.6	31.5	35.4	54	
Mexico	6	6293	7.96	7.28	8.49	6383	3604	9818	46.8	44.3	48.7	2.6	0.7	6.4	81	
Moldova	3	2847	4.60	3.74	5.49	624	459	951	36.7	36.0	37.2	8.9	5.2	13.6	-	
Netherlands	2	2350	7.61	7.52	7.70	46569	44009	49128	26.2	25.6	26.9	43.1	41.8	44.5	-	
New Zealand	3	2444	7.73	7.64	7.91	25718	14585	37373	33.3	32.9	33.7	30.0	27.4	32.1	22	
Norway	2	1969	7.83	7.68	7.99	60055	36555	83556	24.1	23.8	24.4	43.5	42.7	44.3	31	
Philippines	3	2350	7.01	6.65	7.36	1775	962	2588	44.3	42.8	45.9	6.6	5.0	8.1	-	
Poland	3	1844	7.03	7.00	7.07	10426	7976	12876	30.8	30.4	31.2	36.8	34.8	38.7	68	
Romania	3	4074	5.76	4.85	6.67	4989	1871	8445	30.1	27.6	31.6	25.3	25.0	25.7	90	
Singapore	2	3203	7.10	6.95	7.25	38012	22017	54007	40.4	39.9	40.9	8.3	7.9	8.7	-	
Slovenia	3	1964	7.32	7.28	7.37	21566	18168	24965	23.9	22.9	24.9	40.8	39.7	41.9	-	
South Africa	2	5090	6.78	6.30	7.27	4183	2706	5660	59.9	59.5	60.3	8.9	8.4	9.4	49	

Table 4c. (cont'o	1)														
Spain	5	3786	6.93	6.62	7.34	23758	14788	32708	33.3	30.7	35.3	31.4	29.4	34.1	57
Sweden	3	2991	7.72	7.64	7.78	46146	32587	59593	23.2	21.6	24.0	51.2	48.6	54.6	31
Switzerland	3	3106	8.09	7.91	8.32	46720	30326	63225	28.2	26.0	31.5	27.8	23.9	31.4	-
Ukraine	2	3116	4.92	4.02	5.83	1588	873	2303	33.7	29.7	37.8	1.4	-0.1	3.0	-
United States	4	5740	7.53	7.26	7.71	39911	28782	49803	36.9	36.0	37.6	24.6	23.3	26.0	40
Uruguay	3	2830	7.40	7.13	7.59	8719	5879	13961	41.8	40.3	44.2	16.3	15.7	16.7	61
Venezuela	2	2117	7.09	6.72	7.45	3913	3026	4800	42.7	42.0	43.4	6.3	6.2	6.4	81
Full Sample			6.78	3.74	8.49	17960	376	83556	36.1	21.6	60.3	20.5	-4.6	54.6	55.2

Note. PDI = Power Distance Index.

Table 5.

	2	3	4	5	6	7	8	9
1. Life Satisfaction	-0.046*	0.216*	-0.039*	0.109*	0.188*	0.059*	0.131*	-0.107*
2. Age	_	-0.078*	0.051*	0.007*	0.183*	-0.215*	0.207*	-0.164*
3. Income			-0.095 *	0.016*	0.147*	-0.080*	0.092*	-0.183*
4. Egalitarian Value				-0.152*	0.062*	-0.017*	0.066*	-0.019*
5. Political-right					-0.067 *	0.108*	-0.093*	0.066*
6. GDP						-0.541*	0.716*	-0.728*
7. Net Gini						_	-0.735*	0.456*
8. Income Redistribution								-0.712*
9. Power Distance								
* p < .001								

Correlations among Continuous Variables in Study 2

Table 6.

Main Effect Main Effect Interaction Power Egalitarian Political Model Model with GDP as Model Income as Value as Leaning as Distance as with Moderator without all Moderator Moderator Moderator Moderator Covariates Covariates Moderators 23 Number of Countries 35 35 22 35 33 35 35 Number of Respondents 115293 115293 65955 111190 87461 115293 115293 85056 7.28*** 7.12*** 7.14*** 6.79*** 7.14*** 7.18*** 7.14*** 7.28** Intercept (0.15)(0.11)(0.14)(0.11)(0.11)(0.11)(0.11)(0.14)**Time-Varying Effects** -0.04*** -0.04*** -0.02*** -0.05*** -0.05*** 0.02** -0.03*** 0.02** Net Gini (0.003)(0.003)(0.01)(0.00)(0.01)(0.00)(0.00)(0.01)0.02 *** 0.02*** 0.03*** 0.08*** 0.03*** 0.02*** 0.03*** 0.07*** Income Redistribution (IR) (0.003)(0.003)(0.01)(0.003)(0.00)(0.00)(0.00)(0.01)0.51 *** 0.58^{***} 0.51*** 0.55^{***} 0.52*** 0.50^{***} 0.50^{***} GDP (0.02)(0.02)(0.03)(0.02)(0.02)(0.04)(0.03)**Moderators** -0.04*** -0.03*** Egalitarian Value (0.002)(0.002) 0.08^{***} 0.07*** **Political Leaning** (0.003)(0.00)0.15*** 0.14*** 0.15*** 0.15*** 0.15*** 0.14*** 0.12*** Income Decile (0.003)(0.004)(0.003)(0.00)(0.00)(0.00)(0.00)0.005 0.01 **Power Distance** (0.01)(0.01)**Interactions** -0.003** IR X Egalitarian Value -0.002 (0.002)(0.001)**IR X** Political Leaning -0.001 0.00

	Regression	Coefficients and	d Standard Errors	(in Parentheses)) from Multilevel Models in S	Study 2
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Table 6. (cont'd)							
		(0.002)		(0.00)			
IR X Income Decile		-0.002			-0.00**		
		(0.002)			(0.00)		
IR X Time-Varying GDP		0.04				-0.01	
		(0.02)				(0.01)	
IR X Power Distance		0.002***					0.00^{***}
		(0.0003)					(0.00)
Individual-level Covariates							
Age	-0.004***	-0.003***	-0.004***	-0.01***	-0.00***	-0.00****	-0.00*
	(0.001)	(0.001)	(0.001)	(0.00)	(0.00)	(0.00)	(0.00)
Women	0.04**	0.08***	0.05^{***}	0.06^{***}	0.04^{**}	0.04^{**}	0.07^{***}
	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
Survey Year	-0.03***	-0.03***	-0.02***	-0.03***	-0.03***	-0.03***	-0.03***
	(0.002)	(0.003)	(0.003)	(0.00)	(0.00)	(0.00)	(0.00)
Marital Status (married as reference)							
Cohabitated	-0.17***	-0.19***	-0.17***	-0.16***	-0.17***	-0.17***	-0.19***
	(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)
Divorced	-0.52***	-0.57***	-0.52***	-0.52***	-0.52***	-0.52***	-0.55***
	(0.03)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)
Separated	-0.66***	-0.71***	-0.66***	-0.65***	-0.66***	-0.66***	-0.69***
	(0.04)	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Widowed	-0.34***	-0.34***	-0.35***	-0.34***	-0.34***	-0.34***	-0.32***
	(0.03)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Single	-0.26***	-0.33***	-0.26***	-0.28***	-0.26***	-0.26***	-0.29***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Employment Status (full-time employed as	s reference)						
Part-time	-0.06**	-0.05	-0.06*	-0.03	-0.06**	-0.06**	-0.09***
	(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)

Table 6. (cont'd)								
Self-employed		0.01	-0.06*	-0.001	-0.01	0.01	0.01	-0.02
		(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)
Retired		0.07**	0.13***	0.09^{***}	0.12^{***}	0.07^{**}	0.07^{**}	0.11^{***}
		(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)
Housewife		0.12***	0.05	0.12^{***}	0.08^{**}	0.12^{***}	0.12^{***}	0.08^{**}
		(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)
Students		0.24***	0.14***	0.25^{***}	0.24^{***}	0.24^{***}	0.24^{***}	0.11^{***}
		(0.03)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Unemployed		-0.47***	-0.54***	-0.48***	-0.49***	-0.48***	-0.47***	-0.51***
		(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)
Other		-0.24***	-0.28***	-0.24***	-0.29***	-0.25***	-0.24***	-0.24***
		(0.05)	(0.07)	(0.05)	(0.06)	(0.05)	(0.05)	(0.06)
Education (college graduates a	s reference)							
Below Elementary		-0.30***	-0.24***	-0.23***	-0.23***	-0.30***	-0.30***	-0.37***
Education		(0.03)	(0.04)	(0.03)	(0.04)	(0.03)	(0.03)	(0.03)
Elementary Education		-0.18***	-0.16***	-0.13***	-0.17***	-0.17***	-0.18***	-0.20***
		(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)
Incomplete Secondary:		-0.09**	-0.09*	-0.08**	-0.10***	-0.09**	-0.09**	-0.08^{*}
Vocational Type		(0.03)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Complete Secondary:		-0.11***	-0.09**	-0.09***	-0.12***	-0.11***	-0.11***	-0.11***
Vocational Type		(0.02)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)
Incomplete Secondary:		-0.14***	-0.07*	-0.13***	-0.13***	-0.14***	-0.14***	-0.09**
University-Prep		(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Complete Secondary:		-0.06**	-0.03	-0.05*	-0.07**	-0.06**	-0.06**	-0.02
University-Prep		(0.02)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Some College		-0.10***	-0.10**	-0.09***	-0.09***	-0.10***	-0.10***	-0.12***
		(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Country-Level Covariates (C	country-Specifi	ic Means)						
Net Gini	0.09^{***}	0.09^{***}	0.07^{**}	0.09^{***}	0.08^{***}	0.09^{***}	0.09^{***}	0.07^{**}

Table 6. (cont'd)								
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Income Redistribution	0.06^{***}	0.02	0.03	0.03	0.02	0.02	0.02	0.02
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
GDP		0.40^{***}	0.29	0.39***	0.43^{***}	0.40^{***}	0.40^{***}	0.33*
		(0.09)	(0.15)	(0.09)	(0.10)	(0.09)	(0.09)	(0.16)

Notes. ${}^{***}p < 0.001$, ${}^{**}p < 0.01$, ${}^{*}p < 0.05$


Figure 1. Time series of a) life satisfaction, b) net Gini, c) income redistribution for 16 German states.

Figure 1. (cont'd)



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Note. Lines in the figures are numbered such that: 1) Schleswig-Holstein, 2) Hamburg, 3) Lower Saxony, 4) Bremen, 5) North-Rhine-Westfalia, 6) Hessen, 7) Rheinland-Pfalz, 8) Baden-Wuerttemberg, 9) Bavaria, 10) Saarland, 11) Berlin, 12) Brandenburg, 13) Mecklenburg-Vorpommern, 14) Saxony, 15) Saxony-Anhalt, and 16) Thuringia.



Figure 2. The interaction between income redistribution and power distance index. Error bars represent 95% confidence intervals.



Figure 3. The interaction between income redistribution and egalitarian values. Error bars represent 95% confidence intervals.



Figure 4. The interaction between income redistribution and income. Error bars represent 95% confidence intervals.

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