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Working Paper 21-044



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# WORK VALUES SHAPE THE RELATIONSHIP BETWEEN STRESS AND (UN)HAPPINESS\*

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## Abstract

While global wealth has risen over the past few decades, this has not translated into a less stressful life for most people. In fact, stress has risen for people worldwide. Across six studies—including large-scale survey data from over 150 countries—we show that the typically observed negative association between stress and unhappiness depends critically on the value that people place on work. Using various measures of work values—including individual and area-level historical Protestantism, peer-group working hours, and self-reported measures—we show that the strength of the negative impact of stress on subjective well-being depends upon the extent to which individuals, societies, and cultures more broadly value productive work as a good in itself. These findings emphasize the importance of the “psychological fit” between actions and values in shaping subjective well-being. Using large-scale time-use data, we show that the moderating role of work values can be largely explained by the extent to which these values shape how enjoyable leisure activities are, rather than how they affect people’s experience of work-related activities themselves.

## Significance Statement

Stress is on the rise worldwide. As an increasing number of countries begin to measure national success and progress at least partly using measures of subjective well-being (or “happiness”), it is important to understand the extent to which rising stress may lead to lower happiness. A long line of research stretching back decades on work values—and the Protestant Work Ethic, in particular—has studied the relative value placed on work and leisure. However, nothing is yet known about how these work values shape the relationship between stress and well-being. We show that valuing work can lessen some of the negative impacts of stress that arises from work.

# Introduction

People worldwide are feeling increasingly stressed (1, 2). Although global wealth has increased over the past few decades, this has not necessarily translated into an easier or less stressful life for many people (3). Across the world, the experience of stress has risen over the past two decades (see Figure 1). In the USA—one of the most stressed countries in the world—around 44% of Americans said they experienced stress a lot yesterday in 2008, a figure that rose to 55% by 2018.<sup>1</sup> When asked about the main sources of their stress, the most frequently mentioned personal stressor among a large nationally representative sample of Americans was work (4).

The widespread and increasing experience of psychological stress related to (over)work is a concerning trend in itself, but it is particularly troublesome given the well-documented negative effects that stress has on people’s overall quality of life. People who frequently experience psychological stress usually report lower levels of overall subjective well-being (SWB), including decreased life satisfaction, job satisfaction, and feelings of happiness (see, e.g., 5–8). While stress is typically a psychologically detrimental experience, we suggest that the extent to which stress ultimately translates into unhappiness depends on the value placed on work - by both individuals and societies. We propose that to the extent that stress “fits” psychologically with people’s work values, the negative impacts of stress will be weaker. While stress is likely to reduce happiness for all groups of people regardless of work values, the strength of the typically observed negative link between stress and unhappiness will be less acute for individuals who strongly value work and/or who live in areas where work is strongly valued as a good in itself.

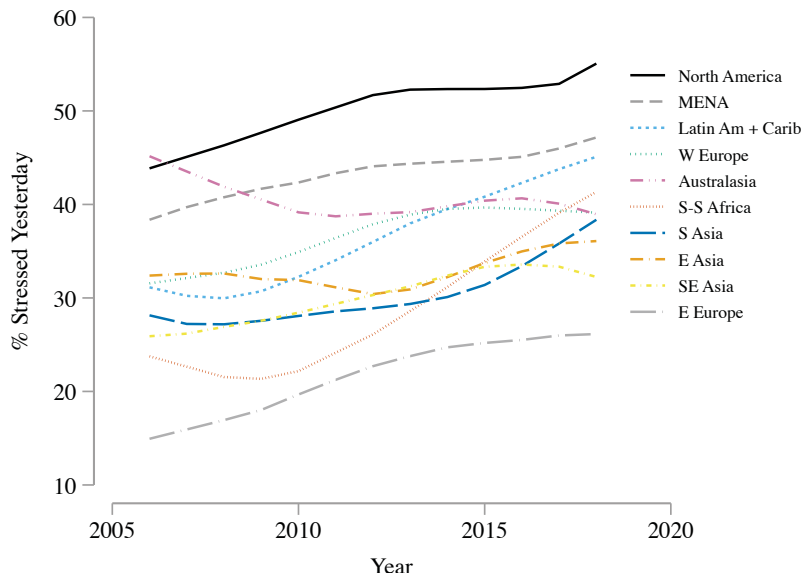
## Work, Stress, and Well-Being

A long line of research demonstrates that the relative value placed on work and leisure varies significantly across cultures and the individuals within them (see, e.g., 9). For the ancient Greeks, for example, work was largely seen as an unfortunate chore that took time away from more worthwhile artistic and romantic pursuits. Closer to the modern day, Thorstein Veblen observed in his classic *Theory of the Leisure Class* that the conspicuous consumption of leisure (i.e. the abstention from work) was typically seen as a signifier of high social and financial status (10). This view sees productive work as an instrumental good – something that is thought of as a means to another good. This more negative conception of work dominated throughout much of human history, at least in the Western world (11). However, during the Protestant Reformation,

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<sup>1</sup>These figures are drawn from the Gallup World Poll. See Materials and Methods for more details.

Figure 1: Rising Stress Around the World



*Source: Gallup World Poll. Data is based on repeated nationally representative samples, which are then aggregated to world regions. Survey item asks respondents if they experienced stress lot of the time yesterday, yes or no. Lines shown here are lowess smoothed. Sample in each country is restricted to 21-64 year olds.*

John Calvin and others popularized an opposing perception of hard work as a positive act of Christian observance. On this more positive view, productive work is seen instead as an intrinsic good – something that is worthwhile not simply as a means to some other good, but rather for its own sake. Centuries later, Max Weber went on to characterize this belief system as the Protestant Work Ethic (PWE) in seminal work that has since spurred a great deal of research across the social and behavioral sciences (12).

Individual differences in PWE have been shown to have an influence on a range of outcomes such as effort provision (13), persistence on tasks (14), personality measures like locus of control (15), working while commuting (16), teamwork behaviors (17), attributions of responsibility for work outcomes (18), and reactions to performance evaluations (19). Research conducted in the United States—a country initially colonized by Puritans—on “idleness aversion” shows that people choose busyness over idleness (20), to the extent that people would rather give themselves mild electric shocks than be left in a room with nothing to do (21). Psychological research on PWE and related concepts has typically conceptualized work values as an individual difference that is principally learned through socialization at an early age (15, 22). As a result, PWE is associated with people’s social and cultural background, and is seen to vary from society

to society. For example, although long working hours and visible busyness provide a signal of high status in the USA, they fail to do so in European contexts where leisure has a higher value (23). Emerging evidence suggests that, even within high PWE cultures, there are pervasive individual differences in the extent to which individuals value work and leisure (e.g. 24–27). Building on this previous research, we assess both the value placed on work by individuals as well as the value placed on work by the societies in which those individuals live assessing the extent to which each construct plays a role in heightening or dampening the negative impact of stress on overall subjective well-being.<sup>2</sup>

Why might the value placed on work at both the personal and societal level dampen the magnitude of the negative effects of stress on well-being? On the personal level, previous research suggests that both individual differences (such as neuroticism) as well as situational mindsets (such as a “stress-is-enhancing” mindset) shape responses to stress in ways that impact upon subsequent psychological and health outcomes (28–30). In addition, recent research suggests a role for “psychological fit”—or the extent to which people’s behavior is consistent with their values and personality—in predicting the impact of behaviors on subsequent well-being (31). On the societal level, the fit between personal values and cultural values can also play a critical role in shaping the impact of behaviors, circumstances, and events on outcomes such as well-being, as for example with research demonstrating that personal religiosity predicts longevity only in cultural contexts where religion is prevalent (32).

Taken together, this research leads to our prediction that the value that individuals and society place on work plays a key role in determining the extent to which stress translates into unhappiness. For individuals living in an areas that value work highly, or who themselves have strong work values, being stressed more should not “conflict” as strongly with their values (cf. 33), and therefore should be less likely to translate into greater unhappiness. The experience of stress has a closer “psychological fit” for people or places with high work values. Thus we hypothesize that positive work values will moderate the typically observed negative link between stress and unhappiness. While expect the effects of stress on SWB to be negative among all groups of people, we hypothesize that the strength of this negative impact will be lower where work values are higher. In other words, we expect work values to buffer the negative impact of stress. We explore two potential mechanisms underlying these buffering or dampening effects:

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<sup>2</sup>We follow a definition of subjective well-being from prior research as a combination of cognitive and affective experiences, – more specifically, high life satisfaction, high positive mood, and low negative mood (6).



changes in how people experience work-related activities, and changes in how people experience leisure activities.

## Overview of Studies

We test this account in six studies, using multiple operationalizations of work values at the individual and societal level. In Study 1a we use a large cross-sectional survey dataset covering over 1 million Americans in order to explore the moderating role of i) individual-level Protestantism and ii) county-level historical Protestantism on the impact of self-reported stress (as well as time stress) on life satisfaction, job satisfaction, and positive affect. In Study 1b we replicate these analyses at the cross-national level in dataset comprising representative samples of 154 countries. In Study 2 we use a different operationalization of work values to assess the moderating role of societal values: the average work hours of local peers; we replicate these results in a pre-registered analysis in Study 3a. Study 3b delves more deeply into underlying psychological mechanisms, utilizing time-use data to examine the moderating role of work values in determining the extent to which specific work and leisure activities are experienced as stressful or enjoyable. Finally, rather than rely on behavioral or historical proxies for work values, in Study 4 we directly elicit them in a global survey. In doing so we are able to ask about work value at both individual and societal levels simultaneously, and document the extent to which the interplay of these values influences the relationship between work stress and SWB.

## Study 1

Across the six studies, we repeatedly use a similar regression framework, regardless of the dataset or measure of work values. Throughout the paper, our main outcome is SWB, which is typically thought of as having both cognitive and affective components (6, 34). Accordingly, life satisfaction, job satisfaction, and positive affect are our outcomes of interest. The experience of stress is the main predictor of interest. We then add into the equation a measure of—or proxy for—positive work values, which we then interact with the stress variable. In all of our empirical models, following prior research (see, e.g., 35, 36), we control for a critical set of individual and household characteristics including age, gender, marital status, income, and occupation status.

In this set-up, we expect to see two principal dynamics. First, we expect stress to attract a strongly negative coefficient, consistent with prior research (see, e.g., 5–8). Second, we expect

the interaction term of stress with positive work values to be oppositely signed. A oppositely-signed interaction term would signify here that the negative impact of stress on SWB is smaller in magnitude for respondents with high work values. Of course, depending on the size of the oppositely-signed coefficient on the interaction term, stress is still likely to be a negative experience even among high work values people or places (albeit a less acutely negative one). To be clear, our proposition is not that work values will reverse the sign of the main effect of stress on SWB, but rather that work values will moderate the relationship, and make the effects less negative.

### **Study 1(a)**

In order to study the extent to which the negative effects of stress may vary according to levels of work values, we begin by employing the proxy most commonly appealed to in the prior theoretical and empirical literature: Protestantism. To begin with, we look in depth at the United States, where Gallup has for over a decade surveyed an independent, large, nationally representative sample of individuals each day, asking questions about various issues including their religion, their feelings of stress, as well as how happy and satisfied they are with their lives (and jobs) as a whole. This provides us with a very large and richly detailed dataset.

In columns (1), (3) and (5) of Table 1, we confirm prior findings that stress is detrimental to SWB. However, we show that this impact is not uniform across groups of people in terms of Protestantism. In columns (2), (4) and (6) the interaction of stress and being a Protestant is highly significant and oppositely signed to the main impact of stress. This suggests that although stress has a deleterious impact on SWB, the magnitude of this impact is less pronounced for people who are Protestant (see Figure S5 for a graphical representation of this interaction).

Going beyond individual-level Protestantism, we look further into the cultural context. Here we use a historical measure of county-level Protestantism in the 1930s, and look separately at respondents who are currently Protestant and non-Protestant. Remarkably, the moderating role of area-level historical Protestantism is significantly evident even for people in the modern day who are not Protestant. We summarize these findings for life evaluation in Figure 2 (see Table S3 for detailed regression results).<sup>3</sup> In Panel A we show the results when considering the whole sample together. As can be seen, stress is less detrimental in more historically Protestant areas.

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<sup>3</sup>In this case we split the sample between Protestants and non-Protestants. Analogously, in Tables S4-S6, we also report three-way interaction models in which we interact stress, being a Protestant, and historical Protestantism.

Table 1: Impact of Stress among Protestants and Non-Protestants

|                         | Life Evaluation      |                      | Positive Affect      |                      | Job Satisfaction     |                      |
|-------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                         | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  |
| <b>Stress</b>           |                      |                      |                      |                      |                      |                      |
| Stressed Yesterday (=1) | -0.416***<br>(0.002) | -0.431***<br>(0.002) | -0.470***<br>(0.002) | -0.484***<br>(0.002) | -0.322***<br>(0.002) | -0.338***<br>(0.003) |
| <b>PWE</b>              |                      |                      |                      |                      |                      |                      |
| Is Protestant (=1)      | 0.028***<br>(0.002)  | 0.005*<br>(0.003)    | 0.040***<br>(0.002)  | 0.020***<br>(0.002)  | 0.035***<br>(0.002)  | 0.012***<br>(0.002)  |
| <b>Interaction</b>      |                      |                      |                      |                      |                      |                      |
| Stress * Is Protestant  |                      | 0.055***<br>(0.004)  |                      | 0.047***<br>(0.004)  |                      | 0.056***<br>(0.005)  |
| $R^2$                   | 0.116                | 0.116                | 0.072                | 0.072                | 0.050                | 0.050                |
| Observations            | 957,245              | 957,245              | 1,142,653            | 1,142,653            | 886,363              | 886,363              |

*Notes: Standard errors in parentheses, adjusted for clustering on date of survey. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup Daily Poll, 2008-2017.*

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

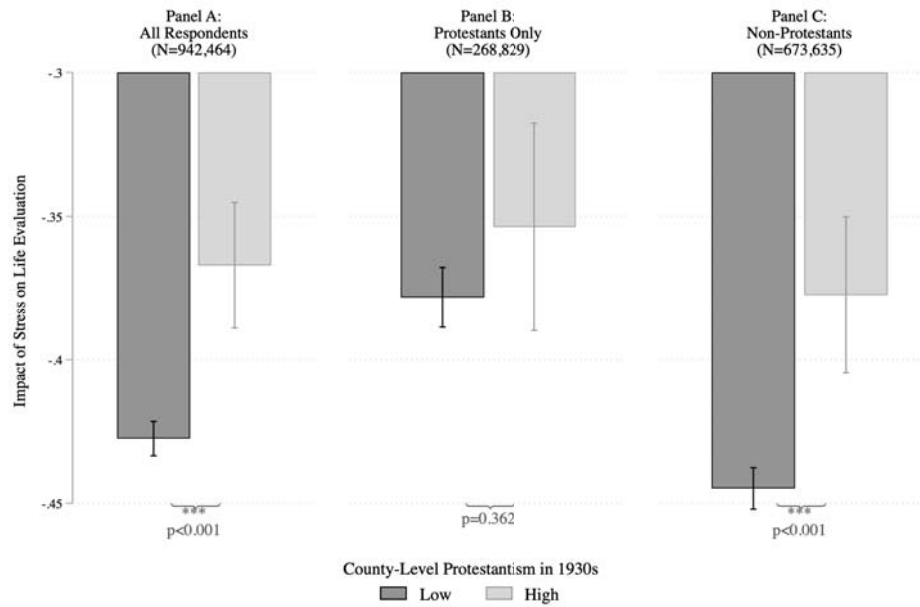
When splitting the sample between Protestants and non-Protestants in Panels B and C, we see two main dynamics. First, comparing panels B and C overall (i.e. regardless of county-level history), the impact of stress on life evaluation is less negative among Protestants (as in Table 1). Second, even among non-Protestants in Panel C, Protestant culture has a moderating effect: people who are not protestant but live in areas that are historically Protestant experience the incidence of stress less negatively (for Protestants themselves, the broader history of the area is of less importance in shaping how psychologically detrimental is the experience of stress).

We find very similar patterns of results when looking at positive affect as well as job satisfaction as our outcome measure (see Tables S5 and S6). Moreover, in a further test of robustness, we replace the experience of stress yesterday with a measure of time stress—whether the respondent had enough time to do everything they needed to do yesterday—and again we observe very similar moderation patterns (see Table S7).

### Study 1(b)

We now broaden the geographical scope of the analysis, this time using the Gallup World Poll. Whereas the Gallup Daily Poll provided a very large sample of one country, allowing us to consider the impact of work values within very small geographical areas, the World Poll allows us to study many more countries worldwide. On an annual basis, Gallup has surveyed a large, annual, nationally representative sample of people in over 150 countries around the world.

Figure 2: Impact of Stress on Life Evaluation in the Gallup Daily Poll



Notes: Coefficients and 95% confidence intervals are reported from three regressions of z-scored life evaluation on the experience of stress yesterday. Stress is interacted with the proportion of Protestants in the county in 1936. Coefficients are reported for counties that were entirely non-Protestant in 1936 and entirely Protestant in 1936. The regressions controls for gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup Daily Poll, 2008-2017. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Across the world, stress has a detrimental impact on subjective well-being, regardless of whether we look at evaluative or hedonic outcome measures. In Table 2 we show that when we interact the experience of stress with the proportion of people in the local sub-country region (e.g. US states) who are protestant, we find that the magnitude of the impact of stress is lessened in areas that are more strongly protestant. Overall, the data suggest that stress is less harmful in areas where PWE values are stronger. For example, looking at column (2) of Table 2, the difference in life satisfaction (conditional on a rich vector of controls including income, gender, age, and education) between stressed and non-stressed individuals was 0.228 standard deviations in regions with low Protestantism, but only 0.065 standard deviations lower in regions with high Protestantism.<sup>4</sup> Similar patterns of moderation are found for both positive affect as well as job satisfaction. An alternative way to see this is shown in Figure 3, where we use these interaction models to plot the expected SWB of stressed and non-stressed individuals in regions with high and low Protestantism. As can be seen, the slope of the relationship is

<sup>4</sup>Although we focus here on area-level Protestantism, Protestant survey respondents experience stress less negatively, as in Study 1(a) (see Table S10).

Table 2: Stress, Predestination, and SWB: Worldwide Evidence

|                         | Life Evaluation      |                      | Positive Affect      |                      | Job Satisfaction     |                      |
|-------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                         | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  |
| <b>Stress</b>           |                      |                      |                      |                      |                      |                      |
| Stressed Yesterday (=1) | -0.205***<br>(0.011) | -0.228***<br>(0.016) | -0.542***<br>(0.015) | -0.575***<br>(0.020) | -0.241***<br>(0.013) | -0.268***<br>(0.018) |
| <b>PWE</b>              |                      |                      |                      |                      |                      |                      |
| Proportion Protestant   | 0.128<br>(0.106)     | 0.074<br>(0.110)     | 0.092<br>(0.085)     | 0.016<br>(0.091)     | -0.090<br>(0.135)    | -0.143<br>(0.140)    |
| <b>Interaction</b>      |                      |                      |                      |                      |                      |                      |
| Stress * Protestantism  |                      | 0.163**<br>(0.063)   |                      | 0.229***<br>(0.088)  |                      | 0.190**<br>(0.092)   |
| $R^2$                   | 0.235                | 0.235                | 0.104                | 0.104                | 0.082                | 0.082                |
| Observations            | 658,353              | 658,353              | 665,606              | 665,606              | 258,540              | 258,540              |
| Countries               | 154                  | 154                  | 154                  | 154                  | 140                  | 140                  |

*Notes: Robust standard errors in parentheses, clustered on countries. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include world region and wave fixed effects, and controls for national (logged) GDP per capita, gender, age and its square, marital status, education level, household income, and children in the household. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup World Poll.*

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

steeper for people living in areas with low levels of Protestantism.

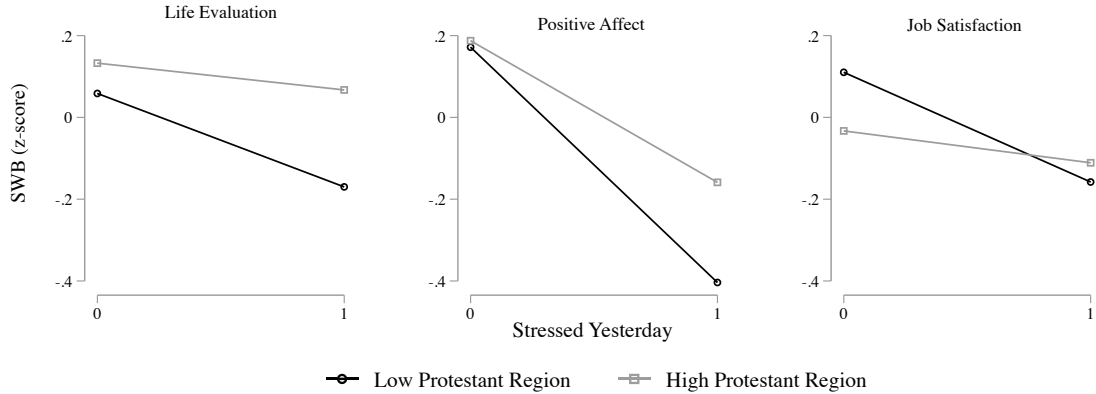
## Study 2

While Study 1 looked at the moderating role of Protestantism, we move on in Study 2 to use a more behavioral proxy for work values. Here we build on a long line of work in psychology, sociology, and economics on reference groups, and consider the extent to which the working hours of peers affects the extent to which stress has a negative impact on well-being. A great deal of research suggests that we often look to our peers to understand how we are doing in life. To the extent that peers are working a lot of hours, they could serve as a reference for how much a person should work and serve as a mechanism by which individuals internalize work values. Thus we predicted that individuals who live in an area where their peers worked a lot of hours would less strongly show the typically observed link between stress and well-being

Using the average working hours of people in the same age group, gender, education level and state, we are able to build an alternative operationalization of work values that is based on behavior. Peer working hours in our sample range from around 15 to 60 hours per week, with a mean of 40.8 and standard deviation of 3.3 hours.<sup>5</sup>

<sup>5</sup>We z-score this measure, such that in interaction models, the interaction term will give the difference in the magnitude of the stress coefficient when peer working hours are 1 standard deviation above the mean.

Figure 3: Stress, Protestant Culture, and SWB: Worldwide Evidence



Notes: Predictive margins are plotted from three regressions of z-scored SWB (each is centered to have a mean of 0 and SD of 1) on stress, sub-region Protestantism, and the interaction of the two. Linear predictions are shown for stressed and non-stressed individuals when the proportion of Protestants in the sub-country region is equal to 0 and when it is equal to 1. All models include world region and wave fixed effects, and controls for national (logged) GDP per capita, gender, age and its square, marital status, education level, household income, and children in the household. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup World Poll. Full reporting of these models can be found in Table 2.

Before proceeding to the main analysis, we first compare this behavioral proxy for work values with our previously used measures of Protestantism. In Table S13 we regress peer working hours on various measures of individual- and area-level Protestantism, with and without controls for demographic characteristics of respondents. We show that peer working hours are highly (and positively) correlated with both individual- and area-level Protestantism.

In Table 3 we show that the negative impact of stress is not uniform across groups of people in terms of peer working hours. The interaction of stress and peer working hours is highly significant and oppositely signed to the main impact of stress.<sup>6</sup> Looking at column (2), for example, where life evaluation is the outcome in our interaction model, we can see that the experience of stress yesterday is associated with a 0.420 standard deviation decrease in life evaluation [95% CIs: -0.424, -0.416] for people at the mean of peer working hours. The magnitude of this stress impact is greater (i.e. more negative) for people 1 standard deviation below the mean of peer working hours (-0.478 [-0.485, -0.472]), and is less pronounced for people in areas with high work values (-0.361 [-0.367, -0.356]).

Overall, the data suggest that although stress has a negative impact on SWB, the magnitude of this impact is less acute for people who live in areas with high work values, and is more pronounced among people who live in areas with low work values. These dynamics remain

<sup>6</sup>For ease of interpretation, we also show these patterns graphically for life evaluation in Figures S5 and S6.

Table 3: Stress, Peer Working Hours, and SWB in the Gallup Daily Poll

|                                    | Life Evaluation      |                      | Positive Affect      |                      | Job Satisfaction     |                      |
|------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                    | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  |
| <b>Stress</b>                      |                      |                      |                      |                      |                      |                      |
| Stressed Yesterday (=1)            | -0.416***<br>(0.002) | -0.420***<br>(0.002) | -0.469***<br>(0.002) | -0.474***<br>(0.002) | -0.322***<br>(0.002) | -0.324***<br>(0.002) |
| <b>Work Values</b>                 |                      |                      |                      |                      |                      |                      |
| Mean Work Hours of Peers (z-score) | 0.015***<br>(0.002)  | -0.011***<br>(0.002) | 0.016***<br>(0.002)  | -0.006***<br>(0.002) | 0.035***<br>(0.002)  | 0.024***<br>(0.002)  |
| <b>Interaction</b>                 |                      |                      |                      |                      |                      |                      |
| Stressed * Peer Work Hours         |                      | 0.058***<br>(0.002)  |                      | 0.050***<br>(0.002)  |                      | 0.025***<br>(0.003)  |
| $R^2$                              | 0.118                | 0.119                | 0.072                | 0.072                | 0.050                | 0.050                |
| Observations                       | 1,026,419            | 1,026,419            | 1,131,780            | 1,131,780            | 880,181              | 880,181              |

*Notes: Standard errors in parentheses, adjusted for clustering on date of survey. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup Daily Poll, 2008-2017. Peer working hours are drawn from the CPS, and refer to mean hours of workers with the same state, year, age group, gender, and level of education.*

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

evident in the data even when we include in the analysis measures of Protestantism (and their interactions as in Study 1) in Table S15. Moreover, similar patterns of results are found when using a measure of time stress as the main predictor (see Table S14).

### Study 3

In Study 3 we move on to use the American Time Use Survey (ATUS), which asks respondents a number of questions about their life generally as well as detailed questions relating to specific activities they engaged in on the day prior to the interview. In Study 3(a) we conduct a (pre-registered) replication of our findings in Study 2, using the ATUS data at the person-day level. In Study 3(b) we conduct more detailed activity-level analysis, by examining whether specific activities such as leisure and work are differently associated with stress and happiness depending on variation in work values.

#### Study 3(a)

In order to test the robustness of the results found in Study 2, we preregistered a replication using ATUS. Here we find a consistent pattern of results. For example, we show in Table S7 that impact of a one unit increase in stress on life evaluation. At the mean of peer working hours, increased stress reduces life evaluation by 0.224 standard deviations [-.245,-.203]. The impact is greater (-0.259 [-.287,-.230]) in areas with low work values, i.e. where peer work hours are one

standard deviation below the mean, and is high (-0.189 [-.220,-.157]) in areas with relatively high working hours norms (for a visual representation, see Figure S7). A similar pattern of results is found when considering happiness, rather than life evaluation, as the outcome (see column (2) of Table S18).<sup>7</sup>

### Study 3(b)

In contrast to Study 3(a), where we analyzed the data at the person-level, we now look in a more fine-grained analysis at the activity-level. This allows us to examine mechanisms more closely. In Table 4 we estimate the impact of work and leisure on stress and happiness. In each case, doing an activity that is work-related is deleterious to SWB – working is less enjoyable and more stressful than other activities within-people over the day. However, we find that this negative impact on SWB is no greater or smaller in areas with differing levels of work values.<sup>8</sup>

Leisure provides a boost to SWB – it is more enjoyable and less stressful than other activities. However, we find that the magnitude of that increase varies according to the level of work values in the surrounding area. In places where peer working hours are high, the positive impact of leisure on SWB is dampened. That is, people whose peers work longer hours appear to i) enjoy leisure less and ii) find leisure less stress-relieving.<sup>9</sup>

Based on recent research, in columns (3) and (4) of Table 4 we break down leisure into active and passive components (37).<sup>10</sup> Consistent with prior studies (37), leisure is associated within-people with higher SWB, and active leisure in particular is more strongly associated with better well-being. For both active and passive leisure, the sign of the interaction effect with positive work values (proxied by peer working hours) is as before; however, the magnitude of the interaction is slightly larger for active leisure.

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<sup>7</sup>In further models we also included an additional interaction with the focal worker’s own usual weekly hours. Here we find no significant differences in the pattern of results across workers with long or short work hours (see Table S19).

<sup>8</sup>Similar results are found in Table S22, where we replace the individual fixed effects instead with a set of observable characteristics.

<sup>9</sup>In further models we also include an additional interaction with the focal worker’s own usual weekly hours. Here we find no significant differences in the pattern of results across workers with long or short work hours (see Table S23).

<sup>10</sup>Active leisure comprised of activities such as playing sport, going out to social events, or attending cultural events; passive leisure comprised of activities such as watching television, spectating sport, listening to the radio.



Table 4: Activity-Level Stress and Happiness in ATUS According to Peer Working Hours

|   | Stress               |                      | Happiness            |                      |
|---|----------------------|----------------------|----------------------|----------------------|
|   | (1)                  | (2)                  | (3)                  | (4)                  |
| <b>Activity Type</b>                    |                      |                      |                      |                      |
| Working (=1)                            | 0.412***<br>(0.028)  | 0.412***<br>(0.028)  | -0.294***<br>(0.029) | -0.272***<br>(0.021) |
| Leisure/Socializing (=1)                | -0.204***<br>(0.017) |                      | 0.089***<br>(0.017)  |                      |
| Active Leisure (=1)                     |                      | -0.225***<br>(0.023) |                      | 0.245***<br>(0.025)  |
| Passive Leisure (=1)                    |                      | -0.190***<br>(0.021) |                      | -0.002<br>(0.021)    |
| <b>Interaction With Peer Work Hours</b> |                      |                      |                      |                      |
| Working * Peer Hours                    | 0.015<br>(0.021)     | 0.015<br>(0.021)     | -0.016<br>(0.021)    | -0.015<br>(0.021)    |
| Leisure * Peer Hours                    | 0.038**<br>(0.017)   |                      | -0.044**<br>(0.018)  |                      |
| Active Leisure * Peer Hours             |                      | 0.043*<br>(0.026)    |                      | -0.056**<br>(0.024)  |
| Passive Leisure * Peer Hours            |                      | 0.035*<br>(0.020)    |                      | -0.036<br>(0.022)    |
| $R^2$                                   | 0.824                | 0.824                | 0.792                | 0.793                |
| Observations                            | 53,910               | 53,910               | 53,808               | 53,808               |
| Individuals                             | 18,256               | 18,256               | 18,233               | 18,233               |

*Notes: Robust standard errors in parentheses, clustered on individuals. Analysis is at the person-activity level. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. Work Norm refers to the natural logarithm of the mean work hours of peers, which we z-score. All models include individual and date fixed effects, as well as ordering of SWB question. Sample is all employed respondents between the ages of 21 and 65. Source: American Time Use Survey, 2010-2013.*

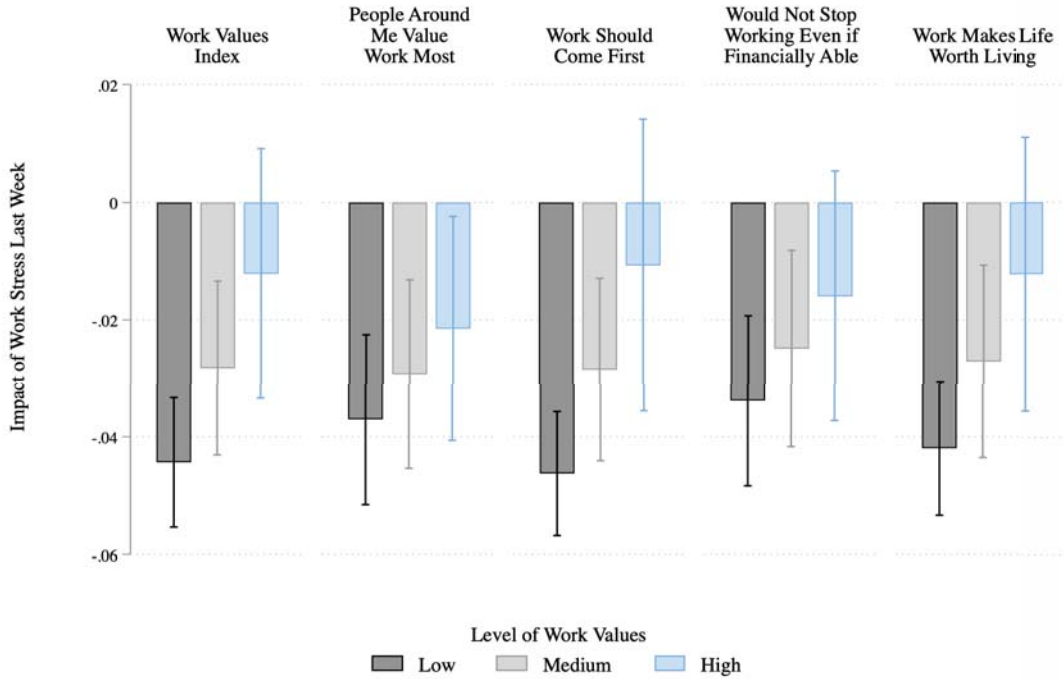
\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

## Study 4

Studies 1 to 3 showed a strong moderating role for work values in the relationship between stress and overall subjective well-being. However, these studies have two key limitations. First, the use of peer working hours and (personal as well as area-level) Protestantism is limiting given that these measures may be imperfect proxies for work values since they do not directly measure this construct. In Study 4, we were able to directly ask respondents to provide their beliefs and attitudes toward work and leisure. Second, the analysis has thus far largely been focused on the USA (with the exception of Study 1(b)). Here we look instead at data from large nationally representative samples from 15 countries worldwide, drawn from a survey that covers six continents and is ultimately representative of around 52% of the global population.

We find results that are very consistent with Studies 1 to 3. Stress has a negative impact

Figure 4: Impact of Work Stress on Life Evaluation



Notes: Coefficients and 95% confidence intervals are reported from a series of regressions of z-scored life evaluation on the experience of stress over the past week (0-10 scale). In each case, stress is interacted with a measure of work values. Coefficients are reported at the mean of each work values variable, and one SD above and below the mean. All models controls for gender, age group dummies, number of children in household, marital status, education level, household income, occupation. Sample is all employed respondents between the ages of 21 and 65.  $N=8,502$ . Source: Global Happiness and Political Attitudes Survey, 2019. For full reporting of the models, see of Table S27. Stars and p-values refer to the interaction term between work stress and the work values variable noted above each series of 3 bars.  $*p < 0.10$ ,  $**p < 0.05$ ,  $***p < 0.01$ .

on subjective well-being, whether it is measured in terms of affect or evaluation. In Table S26 we show the results using the overall index of work values, separately for each measure of SWB: life satisfaction, positive affect, and job satisfaction. In each case, the interaction with work values is strongly significant and oppositely signed. We show this graphically in Figure 4 for life evaluation. For analogous graphs using job satisfaction and positive affect, in which we observe very similar patterns, see Figures S8-S9. As can be seen, the impact of a one unit increase in stress over the past week is  $-0.028$   $[-.046, -.010; p = .005]$ , at the mean of the work values index. The impact is much stronger for people one standard deviation below the mean of work values, where the impact is almost twice as large, at  $-0.044$   $[-.058, -.031; p < .001]$ . For people with high work values, however, i.e. those one standard deviation above the mean of the index, the impact of stress is not significantly different from zero  $[-.038, .014; p = .331]$ .

When splitting the analyses between different work values measures, in Panels B to E of

Figure 4, the data suggest that the personal beliefs and attitudes—such as believing that work should always come first in life and that work makes life worth living more so than leisure—have a stronger moderating role than do perceived social norms such as they extent to which people believe that people around them value work over leisure. It is important to note, however, that both have a role to play, consistent with the evidence presented in Study 1 showing that area-level historical Protestantism plays a strong moderating role even among non-Protestants.

## General Discussion

Although global wealth has risen over the past two decades, this has not necessarily translated into an easier life for many people. In fact, the incidence of stress has risen markedly (1, 2). While the experience of negative emotions like stress may be seen as a bad thing in and of itself, the recent surge in worldwide stress levels leaves open the additional question of what overall effects this is likely to have overall on SWB – which is increasingly seen as a key outcome of interest, not only for individuals themselves but also for societies more broadly (38). The study of subjective well-being has grown enormously over the past few decades across various of the social and behavioral sciences (6, 36), and an ever-growing number of countries are beginning to view subjective well-being as an important measure of national progress and success (39). Many governments now collect data on measures such as life satisfaction and positive/negative affect on a large scale in surveys and have begun to use it to inform and evaluate policy choices (40).

In six different studies, in which we use multiple different operationalizations of work values at both the individual and societal level, we find evidence of a strong moderating role of work values in the relationship between stress and overall SWB. Where stress “fits” more clearly with the value either they or society more broadly places on work, the negative effects of stress are weaker. The data suggest that people with stronger attachment to the notion of productive work as a good in itself, as well as people who live in areas where work is strongly valued, experience the negative effects of stress less acutely. It is important to note that while we show that work values moderate the typically-observed negative relationship between stress and SWB, we do not find these values reverse it. On the contrary, for all groups of people – in terms of level of work values – that we study in this paper, stress is a psychologically detrimental experience. The data suggest, however, that work values are stress-buffering: stress is less detrimental to

SWB where work values are high.

One of the main strengths of our approach is to draw on a variety of large-scale datasets, each of which brings its own benefits. The use of the Gallup World Poll allowed us to test our hypothesis in an analysis that included large nationally representative samples from over 150 countries worldwide, while the use of the Daily Poll enabled us to look more closely at local-level historical Protestantism as well dynamics within peer reference groups at the county-level in the United States. One potential drawback from these analyses was that it was difficult to precisely observe which work values—social or individual—were most strongly driving any moderation. By adding questions to a large-scale global survey, we were able to more directly measure a number of potential work values. Across each of these large-scale datasets—whether looking at life satisfaction, job satisfaction, or positive affect—we find a consistent pattern. An important caveat to our approach, however, is that the evidence presented in this paper from large-scale surveys is cross-sectional, and cannot be interpreted in a causal manner. Further research may look to manipulate work values in more controlled laboratory settings in order to demonstrate causal moderation more clearly.

Using fine-grained activity-level data, we found that living in an area where peers engage in more work significantly shaped the enjoyment individuals derived from their leisure. This is consistent with research showing that opportunity cost reminders can undermine the extent to which individuals enjoy leisure activities in the lab such as listening to music or eating chocolate (41). Our data provides a valuable real-world test of this related idea, using a dataset that captures how people actually spend time using rigorous day reconstruction methods. In doing so, these analyses also open up future research exploring the mechanisms behind why people enjoy leisure less when they live in an area that more strongly values work. While the perceived opportunity costs of leisure might be higher, it is also possible that in areas with higher work norms, it is harder to engage in meaningful social activity given that peers and friends and family are working (for a similar argument, see 42). It is also possible that distraction might play a role, such that individuals who live in areas with high work norms are unable to enjoy their leisure because the leisure they experience is more interrupted by work-relevant requests (for a similar argument, see 5). Future research should build on these findings by delineating the causal pathways through which work hours, and work values more broadly, significantly shape the ability for individuals to reap satisfaction from their leisure activities.

Overall, our results fit with a broader literature suggesting that when people’s values and

personality fit the environment, this can shape the relationship between actions and SWB. Future research should examine the extent to which work values also moderate the relationship between stress and objective health, in addition to SWB. This is important since it may still be the case that, even though work values can be stress-buffering in terms of SWB, stress may well continue to have very significant negative health effects regardless of the cultural context. Exploratory analyses survey measures of overall self-reported general health suggest that there may be some stress-dampening effect of work values in terms of general health (see Tables S30 to S35 where we re-run all of our main models with self-reported health outcomes). Although the overall patterns are similar (stress has a less strongly detrimental effect on subjective health where work values are higher), we find suggestive evidence that the mechanism is different than in the case of psychological well-being. We find in Table S35, at the activity-level in the ATUS data, that respondents report experiencing less pain during work-related activities in areas where peer working hours are higher. Pain experienced during leisure activities is not significantly different according to work values, however. Further research using objective measures of health is needed in order to explore these issues more fully.

Other fruitful avenues for future research include exploring further possible moderators of the link between stress and well-being, including the existence of policies that enable citizens to make better time-related decisions. Work-life balance policies are gaining popularity worldwide – for example, in a Swedish trial where workers switched from an eight-hour to a six-hour working day, employees who participated in the study reported greater happiness and less stress (43). Our data suggests that the extent to which these policies translate into greater regional and country-level happiness could depend critically on citizens’ underlying attitudes toward work and leisure. Overall, these findings speak to the (albeit overlooked) importance of understanding the value people place on work in predicting the happiness of individuals and of nations.

## Materials and Methods

### Study 1(a)

The Gallup Daily poll surveys a large random sample of adults in the USA on a daily basis. Between 2008 and 2012, we observe around 1,000 adults per day. Since 2013, we observe around 500 adults per day. Roughly 60% of interviews are conducted via cellphone, while around 40%

are collected via landline. Question wordings of the main variables in our analysis are as follows: *Stress*. “Did you experience the following feelings during a lot of the day yesterday? How about stress?” (yes/no). *Life Today*. “Please imagine a ladder with steps numbered from zero at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?” (0/10). *Positive Affect*. Mean response to three yes/no (1/0) questions: “Did you smile or laugh a lot yesterday? Did you experience the following feelings during a lot of the day yesterday? How about... Happiness?...Enjoyment?”

Data on area-level religion is drawn from the Census of Religious Bodies, conducted by the US Census Bureau in 1936 (the final year of the survey). For each county, a fine-grained count of members of a variety of religious organizations and groups is made by county. Within each county we code each of these groups as mainline Protestant or otherwise, and calculate the proportion of all members that is Protestant in that county in 1936. We estimate equations such that:

$$SWB_{ij} = \alpha + \beta_1 s_{ij} + \beta_2 p_{ij} + \beta_3 (s_{ij} * p_{ij}) + \gamma X'_{ij} + \epsilon_{ij} \quad (1)$$

where  $SWB_j$  corresponds to the individual  $i$ 's SWB in county  $j$ . Each of these outcome variables was z-scored to have a mean of 0 and a standard deviation of 1, in order to enable comparison across models.  $s_i$  is an indicator variable equal to 1 if respondent  $i$  experienced stress yesterday, 0 otherwise.  $p_{ij}$  is an indicator variable equal to 1 if the respondent is a Protestant or not. In further models, we also include  $\bar{p}_j$ , which is the proportion of Protestants in county  $j$  in 1936. In all models, we also include a vector of controls  $X'_{ij}$ , which included gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. The sample is all employed respondents between the ages of 21 and 65.

### Study 1(b)

The Gallup World Poll is an annual global survey, in which around 1,000 respondents of each country and surveyed on a wide range of issues in a consistent manner. Life evaluation and job satisfaction are measured in the same way as in the Gallup Daily Poll above. Positive affect is the mean of enjoyment, feeling rested, and smiling/laughing yesterday. A question in the World Poll asks respondents for their major religion and denomination. We code the proportion (lying

between 0 and 1) of protestants in each sub-country region.<sup>11</sup> We estimate equations similar to (1), in which we predict SWB using the experience of stress yesterday, the proportion of protestants in the respondent’s region — and the interaction between the two. We include in all models a rich vector of demographic and economic controls, including GDP per capita, gender, age and its square, marital status, education level, and household income. In our main models we also include a set of 11 world region fixed effects, such that we are comparing individuals in similar places geographically. In additional regression analyses, we also include a much more restrictive set of country fixed effects.<sup>12</sup>

## Study 2

We again use the Gallup Daily Poll and main outcome variables, as well as our measure of stress, are the same as in Study 1(a). To measure peer group working hours we use the Current Population Survey (CPS), which gives a very large random sample of the working hours of Americans. We split the CPS into cells according to age group, gender, education level and state. We then calculate the mean working hours of employed individuals within each cell. We then match these to the Gallup respondents, such that we observe the mean working hours of each Gallup respondent’s peer group. We estimate equations analogous to 1 above. We replace  $p_{ij}$  with  $\bar{h}_i$ , which is the mean working hours of people in  $i$ ’s year, state, gender, age group and education level in the CPS, which was logged and then z-scored. The coefficient  $\beta_1$  now gives the the impact of  $s_i$  on  $SWB_i$ , when  $\bar{h}_i = 0$  (holding constant the rich vector of controls  $X_i'$ ). That is, it provides an estimate of the impact of stress when peer working hours are at the mean (since  $\bar{h}_i$  is centered to have a mean of zero).  $\beta_3$  then gives the difference in the impact of stress between someone at the mean of peer working hours and someone one standard deviation above the mean of working hours (i.e. when  $\bar{h}_i = 1$ ).

## Study 3(a)

ATUS is run by the BLS and the US Census Bureau. It is a time-use survey, which surveys respondents on the amount of time they spend on various different activities such as working, leisure, personal care, and household activities. Participants are drawn from the CPS, and are interviewed around 2 to 5 months after their final CPS survey. One randomly-selected person

<sup>11</sup>The definition of a sub-country region varies by country, but is typically that main sub-division used by each country’s government (for example, in the USA it is the state).

<sup>12</sup>In this case, we are comparing the impact of stress within countries, comparing the effect size across sub-country regions of that country.

is interviewed from each CPS household. In the years 2010, 2012 and 2013 a well-being module was included in the time-use survey. In addition to how respondents spent their day (which activities, how long and when was each activity, with whom were they during the activity, and so on), the well-being module also asks how they felt during these activities. Three of the activities that the respondent reports about their time yesterday are randomly selected.

At the person-level, we focus for our main outcome measure on life evaluation, which is measured via the Cantril Ladder, as in the Gallup survey (see above). This was not asked in 2010. In addition, we also construct an outcome measure of happiness, which is the mean of 0-6 happiness responses for the 3 selected activities (totaling around 3.5 hours of the individual's day), weighted by their duration (as well as by their activity-level well-being survey weight). We retain for our analyses respondents for whom we have activity-level data for at least 90 minutes of the day. In order to construct a measure of day-level stress, we create an S-Index, which corresponds to the percentage of the day in which the respondent is under stress. Specifically, it is a 0-1 variable that corresponds to the amount of time that the respondent spends doing activities in which stress dominates positive emotions. We retain for our analyses respondents for whom we have activity-level data for at least 90 minutes of the day. Peer Working Hours are calculated as the mean reported usual weekly working hours of peers using the CPS, in the same manner as for the Gallup data.<sup>13</sup> We remove from these calculated means the focal ATUS/CPS respondent. The measure of logged peer working hours is z-scored to have a mean of 0 and standard deviation across all of the state\*year\*gender\*age\*education cells in the USA.

We estimate equations similar to (1), where we predict life evaluation and average happiness using the stress index interacted with average peer hours. Each regression model controls for gender, age and its square, number of children in household, household size, marital status, education level, household income, and fixed effects for occupation and date. As above, the sample is all employed respondents between the ages of 21 and 65. Pre-registration details can be found at [https://osf.io/5guax/?view\\_only=ef90288421b74da8b07e3f528005f670](https://osf.io/5guax/?view_only=ef90288421b74da8b07e3f528005f670).

### **Study 3(b)**

ATUS data is used at the activity-level. For each reported activity, respondents were asked a series of questions about what type of activity it was, whom they were with, how long it

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<sup>13</sup>County IDs are available for only a very small number of counties, making a fine-grained analysis using historical local-level Protestantism as the moderator not possible.



lasted, and so on. We coded two separate activity variables: i) an indicator for working, and ii) an indicator for leisure, which includes recreation, socializing, relaxing. For a further set of analyses, we break down leisure into two categories corresponding to active and passive leisure.<sup>14</sup> In our sample, 18% of the activities are leisure (10% being passive and 8% being active). Respondents report working during 11% of the activities that we study.

For a randomly selected 3 activities reported throughout the day, respondents were asked how they felt during the activity. We focused on stress and happiness, both of which were measured on a 0-6 scale. As above in studies 1 and 2, we used the same measure of peer working hours drawn from the CPS, as a proxy for work values. We estimate equations such that

$$SWB_{it} = \beta_1 L_{it} + \beta_2 \bar{h}_i + \beta_3 (T_{it} * \bar{h}_i) + \delta_i + \epsilon_{it} \quad (2)$$

where  $SWB_{it}$  is either the stress or happiness felt by individual  $i$  during activity  $t$ , and  $L_{it}$  is equal to 1 if the activity  $t$  being done by  $i$  is leisure, and zero otherwise.  $\delta_i$  is an individual fixed effect, and  $\epsilon_{it}$  is an error term adjusted for clustering on individuals. The main effect of peer working hours,  $\bar{h}_i$ , is not estimated in the equation since this is subsumed into the individual fixed effect  $\delta_i$  (it does not vary within-individuals over the 3 episodes of the day). Nevertheless, we are still able to estimate the interaction between peer working hours and the activity being done. The parameter  $\beta_1$  gives the impact of leisure on SWB, holding constant time-invariant characteristics that are controlled for using the individual fixed effect (i.e. comparing different activities within-individual).  $\beta_3$  estimates the extent to which this within-person leisure effect on SWB varies *across* individuals living in areas with differing work values.

#### Study 4

We use the VPF Global Happiness and Political Attitudes Survey, which was collected in early 2019. Around 1,000 respondents per country were asked a range of questions about different facets of their subjective well-being (as well as their political beliefs, attitudes and behaviors). In line with our previous analyses, our main outcomes were life evaluation, positive affect, and job satisfaction. Life evaluation was measured using the Cantril Ladder, as above. Positive affect is the mean of happy, cheerful, joyful, excited, and engaged (all of which are measured on a 0 to 10 scale referring to the experience of them yesterday). General satisfaction with current

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<sup>14</sup>For example, active leisure includes playing sport, attending parties, and so on, whereas passive leisure includes things like watching television, waiting associated with leisure activities, watching sport, and so on.

job was elicited on a 1 to 7 scale, with 1 being “not at all” and 7 being “very.” We z-scored our outcome variables to have a mean of 0 and a standard deviation of 1, in order enable comparison between models.

Our main predictor is the incidence of stress. Here we make use of a question asking how much stress the respondent felt at work within the past week, on a scale of 0 to 10 (where 0 means not at all and 10 means all the time). We are able to go beyond the previous studies by more precisely measuring work values, rather than relying on a *proxy* for peer work hours. In particular, four different work values measures are used, all of which are statements to which the respondent was asked how far they agreed on a scale of 1 to 5. The statements were:

1. *I live in a place where people tend to value work over leisure.*
2. *Work should come first even if it means less spare time.*
3. *Even if I were financially able, I would not stop working.*
4. *It is work that makes life worth living, not leisure.*

We treat the 1-5 agreement scale in a cardinal manner, and z-score each response such that they have a mean of 0 and a standard deviation of 1 across the sample. In addition, we construct a work values index, by taking the first principal component of the four measures (and then z-scoring it). As above, we estimate equations in which stress, interacted with work values, is a predictor of SWB. All models include country fixed effects, as well as a full set of controls for gender, age group dummies, number of children in household, marital status, education level, household income, occupation.

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# Supplementary Material

## Work Values Shape the Relationship Between Stress and (Un)Happiness

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**For Online Publication Only**

## S1 Supplementary Materials for Study 1(a)

### Data Description

**Gallup Daily Poll.** The Gallup Daily poll surveys a large random sample of adults in the USA on a daily basis. Between 2008 and 2012, we observe around 1,000 adults per day. Since 2013, we observe around 500 adults per day. Roughly 60% of interviews are conducted via cellphone, while around 40% are collected via landline. Question wordings of the main variables in our analysis are as follows.

*Stress.* “Did you experience the following feelings during a lot of the day yesterday? How about stress?” (yes/no)

*Time Stress.* “Did you have enough time to get done what you needed to do yesterday?” (yes/no)

*Life Today.* “Please imagine a ladder with steps numbered from zero at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?” (0/10)

*Life in 5 Years.* “Please imagine a ladder with steps numbered from zero at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step do you think you will stand about five years from now?” (0/10)

*Positive Affect.* Mean response to three yes/no (1/0) questions:

- “Did you smile or laugh a lot yesterday?”
- “Did you experience the following feelings during a lot of the day yesterday? How about... Happiness?”
- “...Enjoyment?”

Table S1: Gallup Daily Poll: Summary Statistics

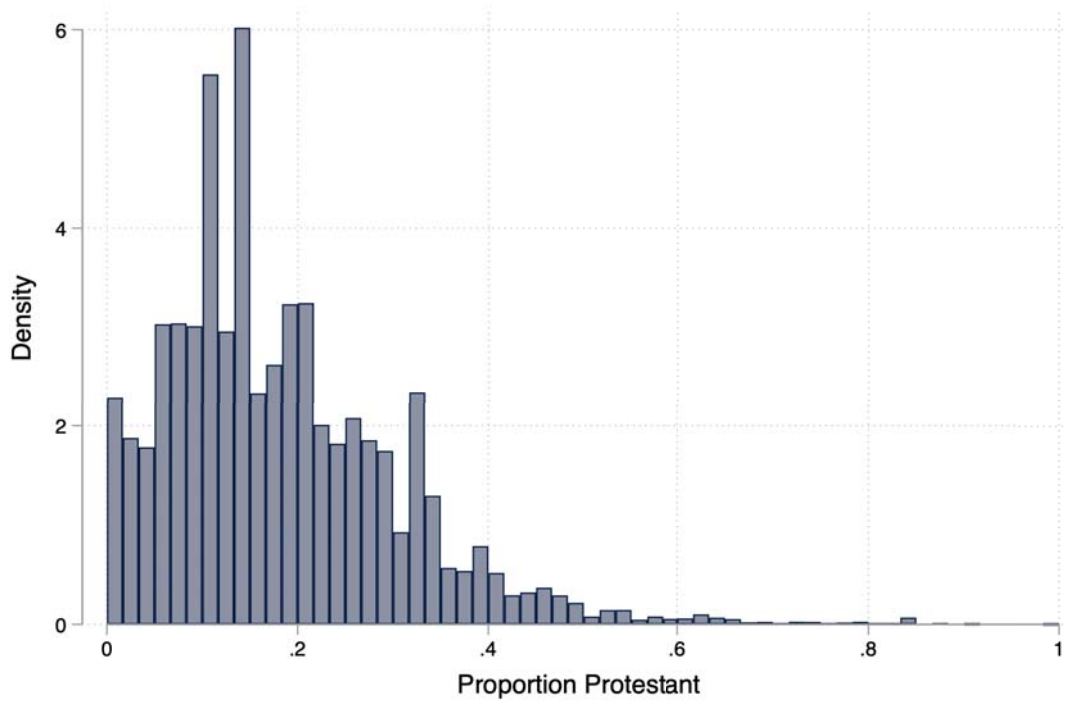
| Variable                                 | Obs     | Mean  | Std. Dev. | Min   | Max   |
|--|---------|-------|-----------|-------|-------|
| Life Evaluation                          | 1040420 | 7.09  | 1.73      | 0     | 10    |
| Positive Affect                          | 1145599 | .87   | .27       | 0     | 1     |
| Satisfied with Job                       | 888653  | .89   | .32       | 0     | 1     |
| Stressed Yesterday                       | 1233196 | .42   | .49       | 0     | 1     |
| Protestant                               | 1153944 | .29   | .45       | 0     | 1     |
| County Protestant Proportion 1936        | 1216270 | .18   | .12       | 0     | 1     |
| Peer Working Hours                       | 1222559 | 40.77 | 3.32      | 14.84 | 59.61 |
| Male                                     | 1234596 | .57   | .5        | 0     | 1     |
| Age                                      | 1234596 | 45.47 | 12.18     | 21    | 65    |
| Number of Children                       | 1232364 | .79   | 1.16      | 0     | 15    |
| Marital: Single                          | 1234596 | .19   | .39       | 0     | 1     |
| Married                                  | 1234596 | .61   | .49       | 0     | 1     |
| Separated                                | 1234596 | .02   | .14       | 0     | 1     |
| Divorced                                 | 1234596 | .1    | .31       | 0     | 1     |
| Widowed                                  | 1234596 | .02   | .14       | 0     | 1     |
| Domestic partner                         | 1234596 | .05   | .21       | 0     | 1     |
| Education: Less than high school diploma | 1224886 | .03   | .18       | 0     | 1     |
| High school degree or diploma            | 1224886 | .16   | .36       | 0     | 1     |
| Technical/Vocational school              | 1224886 | .06   | .24       | 0     | 1     |
| Some college                             | 1224886 | .24   | .42       | 0     | 1     |
| College graduate                         | 1224886 | .28   | .45       | 0     | 1     |
| Post graduate work or degree             | 1224886 | .23   | .42       | 0     | 1     |
| Income: Under \$720                      | 1035366 | 0     | .06       | 0     | 1     |
| \$720 to \$5,999                         | 1035366 | .01   | .08       | 0     | 1     |
| \$6,000 to \$11,999                      | 1035366 | .02   | .14       | 0     | 1     |
| \$12,000 to \$23,999                     | 1035366 | .07   | .26       | 0     | 1     |
| \$24,000 to \$35,999                     | 1035366 | .1    | .3        | 0     | 1     |
| \$36,000 to \$47,999                     | 1035366 | .1    | .3        | 0     | 1     |
| \$48,000 to \$59,999                     | 1035366 | .1    | .3        | 0     | 1     |
| \$60,000 to \$89,999                     | 1035366 | .2    | .4        | 0     | 1     |
| \$90,000 to \$119,999                    | 1035366 | .1    | .3        | 0     | 1     |
| \$120,000 and over                       | 1035366 | .19   | .39       | 0     | 1     |
| Income: DK                               | 1035366 | .02   | .14       | 0     | 1     |
| Income: Refused                          | 1035366 | .09   | .29       | 0     | 1     |
| Job Type: Professional worker            | 1077001 | .31   | .46       | 0     | 1     |
| Manager, Executive or Official           | 1077001 | .1    | .31       | 0     | 1     |
| Business Owner                           | 1077001 | .03   | .18       | 0     | 1     |
| Clerical or Office Worker                | 1077001 | .06   | .24       | 0     | 1     |
| Sales worker                             | 1077001 | .07   | .25       | 0     | 1     |
| Service worker                           | 1077001 | .12   | .32       | 0     | 1     |
| Construction or Mining worker            | 1077001 | .04   | .21       | 0     | 1     |
| Manufacturing or Production              | 1077001 | .04   | .2        | 0     | 1     |
| Transportation worker                    | 1077001 | .03   | .16       | 0     | 1     |
| Installation or Repair worker            | 1077001 | .02   | .15       | 0     | 1     |
| Farming, Fishing or Forestry             | 1077001 | .02   | .13       | 0     | 1     |
| Job Type Other                           | 1077001 | .16   | .37       | 0     | 1     |



Table S2: Correlation Matrix: Gallup Daily Poll

|                          | (1)   | (2)   | (3)   | (4)   | (5)   | (6)  | (7)  | (8)  |
|--------------------------|-------|-------|-------|-------|-------|------|------|------|
| (1) Life Evaluation      | 1.00  |       |       |       |       |      |      |      |
| (2) Job Satisfaction     | 0.24  | 1.00  |       |       |       |      |      |      |
| (3) Positive Affect      | 0.25  | 0.23  | 1.00  |       |       |      |      |      |
| (4) Negative Affect      | -0.27 | -0.20 | -0.30 | 1.00  |       |      |      |      |
| (5) Stressed Yesterday   | -0.20 | -0.16 | -0.23 | 0.48  | 1.00  |      |      |      |
| (6) Protestant           | 0.04  | 0.04  | 0.02  | -0.04 | -0.02 | 1.00 |      |      |
| (7) County Protestantism | 0.00  | 0.01  | 0.00  | -0.02 | 0.00  | 0.05 | 1.00 |      |
| (8) Peer Working Hours   | 0.03  | 0.03  | 0.00  | -0.06 | -0.02 | 0.06 | 0.01 | 1.00 |

Figure S1: Protestantism Across U.S. Counties in 1936



Source: *Censuses of Religious Bodies, 1936.*

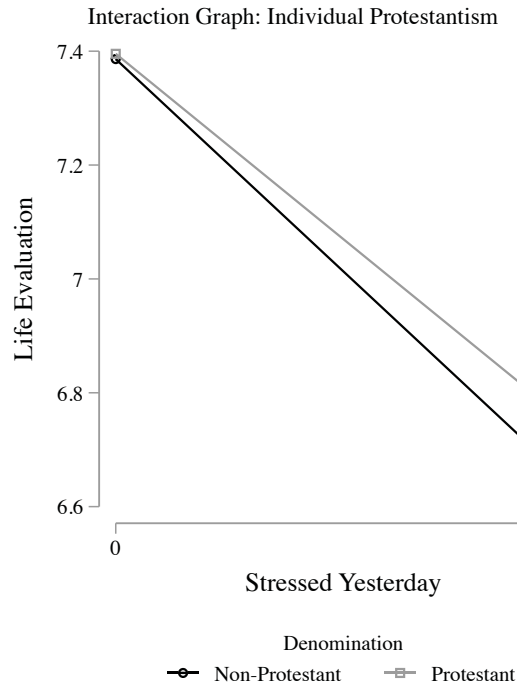
Table S3: Impact of Historical County-Level Historical Protestantism

|                               | Life Evaluation      |                      | Positive Affect      |                      | Job Satisfaction     |                      |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                               | (1)<br>Protestants   | (2)<br>Others        | (3)<br>Protestants   | (4)<br>Others        | (5)<br>Protestants   | (6)<br>Others        |
| <b>Stress</b>                 |                      |                      |                      |                      |                      |                      |
| Stressed Yesterday (=1)       | -0.378***<br>(0.006) | -0.445***<br>(0.004) | -0.445***<br>(0.006) | -0.503***<br>(0.004) | -0.283***<br>(0.007) | -0.352***<br>(0.005) |
| <b>County-Level PWE</b>       |                      |                      |                      |                      |                      |                      |
| Proportion Protestant         | 0.025<br>(0.016)     | -0.091***<br>(0.012) | -0.033***<br>(0.012) | -0.018*<br>(0.009)   | 0.037***<br>(0.013)  | 0.013<br>(0.011)     |
| <b>Interaction</b>            |                      |                      |                      |                      |                      |                      |
| Stress * County Protestantism | 0.024<br>(0.027)     | 0.068***<br>(0.020)  | 0.042<br>(0.028)     | 0.106***<br>(0.020)  | 0.001<br>(0.029)     | 0.074***<br>(0.022)  |
| $R^2$                         | 0.122                | 0.114                | 0.068                | 0.073                | 0.046                | 0.050                |
| Observations                  | 268,829              | 673,635              | 326,528              | 799,073              | 257,185              | 618,311              |

Notes: Standard errors in parentheses, adjusted for clustering on date of survey. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup Daily Poll, 2008-2017.

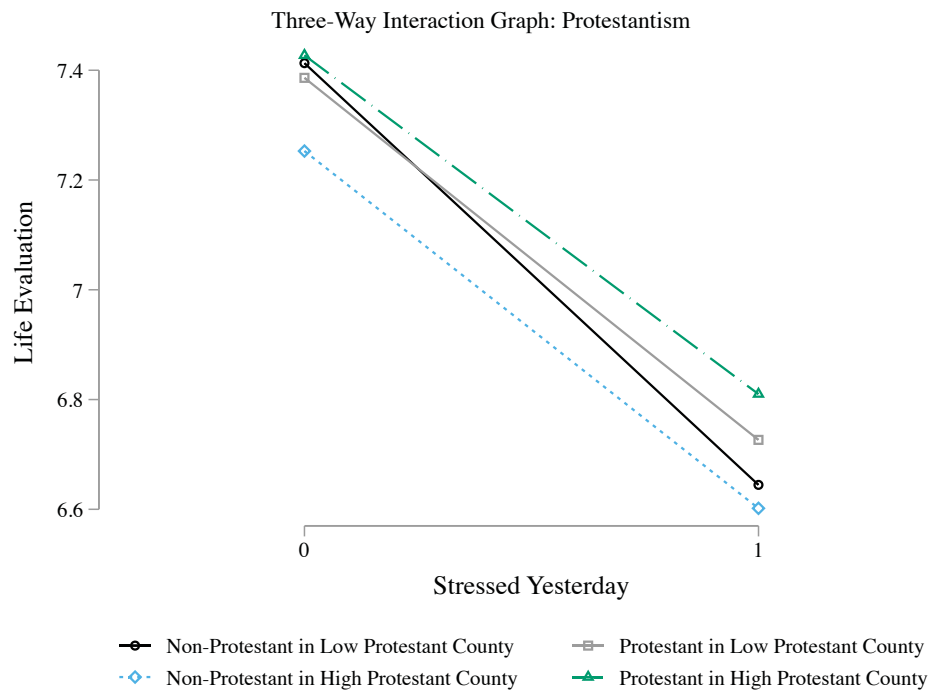
\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Figure S2



Graph shows linear predictions at different margins, based on column (2) of Table 1.

Figure S3



Graph shows linear predictions at different margins, based on column (4) of Table S4.

Table S4: Three-Way Interaction Models: Life Evaluation

|                                       | Life Evaluation      |                      |                      |                      |
|---------------------------------------|----------------------|----------------------|----------------------|----------------------|
|                                       | (1)                  | (2)                  | (3)                  | (4)                  |
| Stressed Yesterday (=1)               | -0.416***<br>(0.002) | -0.432***<br>(0.002) | -0.428***<br>(0.004) | -0.444***<br>(0.004) |
| Is Protestant (=1)                    | 0.029***<br>(0.002)  | 0.006**<br>(0.003)   | 0.029***<br>(0.002)  | -0.015***<br>(0.005) |
| Proportion Protestant                 | -0.032***<br>(0.008) | -0.032***<br>(0.008) | -0.058***<br>(0.010) | -0.093***<br>(0.012) |
| Stress * Is Protestant                |                      | 0.055***<br>(0.004)  |                      | 0.063***<br>(0.008)  |
| Stress * County Protestantism         |                      |                      | 0.061***<br>(0.016)  | 0.068***<br>(0.020)  |
| Protestant * County Protestantism     |                      |                      |                      | 0.116***<br>(0.021)  |
| Stressed * Protestant * Protestantism |                      |                      |                      | -0.043<br>(0.033)    |
| $R^2$                                 | 0.117                | 0.117                | 0.117                | 0.117                |
| Observations                          | 942,464              | 942,464              | 942,464              | 942,464              |

*Notes: Standard errors in parentheses, adjusted for clustering on date of survey. Outcome variable in all models is z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup Daily Poll, 2008-2017.*

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table S5: Three-Way Interaction Models: Job Satisfaction

|                                       | Job Satisfaction     |                      |                      |                      |
|---------------------------------------|----------------------|----------------------|----------------------|----------------------|
|                                       | (1)                  | (2)                  | (3)                  | (4)                  |
| Stressed Yesterday (=1)               | -0.323***<br>(0.002) | -0.339***<br>(0.003) | -0.334***<br>(0.004) | -0.352***<br>(0.005) |
| Is Protestant (=1)                    | 0.035***<br>(0.002)  | 0.012***<br>(0.002)  | 0.035***<br>(0.002)  | 0.008**<br>(0.004)   |
| Proportion Protestant                 | 0.041***<br>(0.008)  | 0.041***<br>(0.008)  | 0.016*<br>(0.009)    | 0.014<br>(0.011)     |
| Stress * Is Protestant                |                      | 0.056***<br>(0.005)  |                      | 0.069***<br>(0.008)  |
| Stress * County Protestantism         |                      |                      | 0.060***<br>(0.018)  | 0.073***<br>(0.022)  |
| Protestant * County Protestantism     |                      |                      |                      | 0.020<br>(0.018)     |
| Stressed * Protestant * Protestantism |                      |                      |                      | -0.072**<br>(0.036)  |
| $R^2$                                 | 0.050                | 0.050                | 0.050                | 0.050                |
| Observations                          | 875,496              | 875,496              | 875,496              | 875,496              |

*Notes: Standard errors in parentheses, adjusted for clustering on date of survey. Outcome variable in all models is z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup Daily Poll, 2008-2017.*

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table S6: Three-Way Interaction Models: Positive Affect

|                                       | Positive Affect      |                      |                      |                      |
|---------------------------------------|----------------------|----------------------|----------------------|----------------------|
|                                       | (1)                  | (2)                  | (3)                  | (4)                  |
| Stressed Yesterday (=1)               | -0.471***<br>(0.002) | -0.484***<br>(0.002) | -0.488***<br>(0.004) | -0.503***<br>(0.004) |
| Is Protestant (=1)                    | 0.040***<br>(0.002)  | 0.021***<br>(0.002)  | 0.040***<br>(0.002)  | 0.024***<br>(0.003)  |
| Proportion Protestant                 | 0.013*<br>(0.007)    | 0.013*<br>(0.007)    | -0.026***<br>(0.007) | -0.018*<br>(0.009)   |
| Stress * Is Protestant                |                      | 0.046***<br>(0.004)  |                      | 0.057***<br>(0.008)  |
| Stress * County Protestantism         |                      |                      | 0.094***<br>(0.016)  | 0.106***<br>(0.020)  |
| Protestant * County Protestantism     |                      |                      |                      | -0.013<br>(0.015)    |
| Stressed * Protestant * Protestantism |                      |                      |                      | -0.065*<br>(0.034)   |
| $R^2$                                 | 0.072                | 0.072                | 0.072                | 0.072                |
| Observations                          | 1,125,601            | 1,125,601            | 1,125,601            | 1,125,601            |

Notes: Standard errors in parentheses, adjusted for clustering on date of survey. Outcome variable in all models is z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup Daily Poll, 2008-2017.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table S7: Evidence using Time Stress

|                                       | Life Evaluation      |                      |                      |                      | Positive Affect      |                      |                      |                      | Job Satisfaction     |                      |                      |                      |
|---------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                       | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  | (7)                  | (8)                  | (9)                  | (10)                 | (11)                 | (12)                 |
| Not Enough Time Yesterday (=1)        | -0.216***<br>(0.003) | -0.230***<br>(0.003) | -0.221***<br>(0.005) | -0.226***<br>(0.006) | -0.290***<br>(0.003) | -0.311***<br>(0.004) | -0.305***<br>(0.005) | -0.328***<br>(0.006) | -0.199***<br>(0.003) | -0.214***<br>(0.004) | -0.207***<br>(0.005) | -0.220***<br>(0.006) |
| Is Protestant (=1)                    | 0.026***<br>(0.003)  | 0.010***<br>(0.003)  |                      | 0.012***<br>(0.003)  | 0.039***<br>(0.003)  | 0.017***<br>(0.003)  |                      | 0.017***<br>(0.003)  | 0.033***<br>(0.003)  | 0.017***<br>(0.003)  |                      | 0.017***<br>(0.003)  |
| Proportion Protestant                 | -0.047***<br>(0.010) |                      | -0.050***<br>(0.012) | -0.052***<br>(0.012) | 0.014<br>(0.010)     |                      | -0.005<br>(0.011)    | -0.008<br>(0.011)    | 0.039***<br>(0.010)  |                      | 0.032***<br>(0.011)  | 0.029***<br>(0.011)  |
| Time Stress * Is Protestant           |                      | 0.046***<br>(0.006)  |                      | 0.023**<br>(0.009)   |                      | 0.070***<br>(0.006)  |                      | 0.082***<br>(0.010)  |                      | 0.053***<br>(0.006)  |                      | 0.051***<br>(0.010)  |
| Time Stress * County Protestantism    |                      |                      | 0.025<br>(0.022)     | -0.024<br>(0.026)    |                      |                      | 0.083***<br>(0.023)  | 0.092***<br>(0.027)  |                      |                      | 0.042*<br>(0.022)    | 0.031<br>(0.027)     |
| Stressed * Protestant * Protestantism |                      |                      |                      | 0.123***<br>(0.037)  |                      |                      |                      | -0.064<br>(0.041)    |                      |                      |                      | 0.004<br>(0.040)     |
| $R^2$                                 | 0.090                | 0.090                | 0.090                | 0.090                | 0.038                | 0.038                | 0.038                | 0.039                | 0.034                | 0.034                | 0.034                | 0.034                |
| Observations                          | 611,155              | 618,631              | 611,155              | 611,155              | 670,996              | 679,287              | 670,996              | 670,996              | 664,252              | 672,479              | 664,252              | 664,252              |

Notes: Standard errors in parentheses, adjusted for clustering on date of survey. Outcome variable in all models is z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup Daily Poll, 2008-2017.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

## S2 Supplementary Materials for Study 1(b)

Table S8: Summary Statistics: Gallup World Poll

| Variable              | Obs    | Mean  | Std. Dev. | Min  | Max   |
|-----------------------|--------|-------|-----------|------|-------|
| Life Evaluation       | 952589 | 5.55  | 2.29      | 0    | 10    |
| Job Satisfaction      | 255495 | .78   | .41       | 0    | 1     |
| Positive Affect       | 965202 | .69   | .35       | 0    | 1     |
| Stressed Yesterday    | 965202 | .33   | .47       | 0    | 1     |
| Protestant            | 863518 | .14   | .34       | 0    | 1     |
| Region Protestantism  | 916428 | .13   | .16       | 0    | 1     |
| Female                | 965202 | .54   | .5        | 0    | 1     |
| Age                   | 965202 | 40.94 | 12.64     | 21   | 65    |
| Household Income (ln) | 944107 | 7.95  | 1.85      | 0    | 19.92 |
| Children in Household | 962351 | .55   | .5        | 0    | 1     |
| GDP per capita (ln)   | 959633 | 9.34  | 1.12      | 6.46 | 11.73 |

Table S9: Correlation Matrix: Gallup World Poll

|                          | (1)   | (2)   | (3)   | (4)   | (5)  | (6)  | (7)  |
|--------------------------|-------|-------|-------|-------|------|------|------|
| (1) Life Evaluation      | 1.00  |       |       |       |      |      |      |
| (2) Job Satisfaction     | 0.27  | 1.00  |       |       |      |      |      |
| (3) Positive Affect      | 0.23  | 0.25  | 1.00  |       |      |      |      |
| (4) Negative Affect      | -0.21 | -0.17 | -0.35 | 1.00  |      |      |      |
| (5) Stressed Yesterday   | -0.09 | -0.10 | -0.25 | 0.40  | 1.00 |      |      |
| (6) Protestant           | 0.03  | -0.01 | 0.04  | 0.00  | 0.01 | 1.00 |      |
| (7) Region Protestantism | 0.05  | 0.00  | 0.05  | -0.01 | 0.01 | 0.47 | 1.00 |

Table S10: Stress, Predestination, and SWB: GWP Individual Protestantism

|                               | Life Evaluation      |                      | Positive Affect      |                      | Job Satisfaction     |                      |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                               | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  |
| <b>Stress</b>                 |                      |                      |                      |                      |                      |                      |
| Stressed Yesterday (=1)       | -0.201***<br>(0.012) | -0.207***<br>(0.012) | -0.534***<br>(0.015) | -0.540***<br>(0.016) | -0.239***<br>(0.013) | -0.247***<br>(0.014) |
| <b>Predestination Beliefs</b> |                      |                      |                      |                      |                      |                      |
| Is Protestant (=1)            | 0.055**<br>(0.023)   | 0.043*<br>(0.025)    | 0.047***<br>(0.015)  | 0.033*<br>(0.019)    | -0.025<br>(0.025)    | -0.041<br>(0.029)    |
| <b>Interaction</b>            |                      |                      |                      |                      |                      |                      |
| Stress * Is Protestant        |                      | 0.035**<br>(0.018)   |                      | 0.039<br>(0.025)     |                      | 0.053**<br>(0.024)   |
| $R^2$                         | 0.238                | 0.238                | 0.104                | 0.104                | 0.083                | 0.083                |
| Observations                  | 628,955              | 628,955              | 636,001              | 636,001              | 250,362              | 250,362              |
| Countries                     | 148                  | 148                  | 148                  | 148                  | 135                  | 135                  |

Notes: Robust standard errors in parentheses, clustered on countries. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include country and wave fixed effects, and controls for gender, age and its square, marital status, education level, household income, and children in the household. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup World Poll.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .



Table S11: Stress, Predestination, and SWB: Gallup World Poll Evidence Including Country Fixed Effects

|                               | Life Evaluation      |                      | Positive Affect      |                      | Job Satisfaction     |                      |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                               | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  |
| <b>Stress</b>                 |                      |                      |                      |                      |                      |                      |
| Stressed Yesterday (=1)       | -0.198***<br>(0.009) | -0.208***<br>(0.011) | -0.555***<br>(0.013) | -0.580***<br>(0.018) | -0.246***<br>(0.012) | -0.267***<br>(0.014) |
| <b>Predestination Beliefs</b> |                      |                      |                      |                      |                      |                      |
| Proportion Protestant         | -0.076<br>(0.059)    | -0.101<br>(0.063)    | -0.004<br>(0.043)    | -0.064<br>(0.050)    | -0.018<br>(0.099)    | -0.065<br>(0.103)    |
| <b>Interaction</b>            |                      |                      |                      |                      |                      |                      |
| Stress * Protestantism        |                      | 0.071<br>(0.048)     |                      | 0.168**<br>(0.078)   |                      | 0.150*<br>(0.076)    |
| $R^2$                         | 0.283                | 0.283                | 0.133                | 0.133                | 0.108                | 0.108                |
| Observations                  | 655,737              | 655,737              | 662,987              | 662,987              | 255,930              | 255,930              |
| Countries                     | 154                  | 154                  | 154                  | 154                  | 140                  | 140                  |

Notes: Robust standard errors in parentheses, clustered on countries. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include country and wave fixed effects, and controls for gender, age and its square, marital status, education level, household income, and children in the household. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup World Poll.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table S12: Stress, Predestination, and SWB: Gallup World Poll Evidence with Three-Way Interactions

|                                       | Life Evaluation      |                      | Positive Affect      |                      | Job Satisfaction     |                      |
|---------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                       | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  |
| Stressed Yesterday (=1)               | -0.205***<br>(0.012) | -0.226***<br>(0.017) | -0.539***<br>(0.016) | -0.564***<br>(0.022) | -0.242***<br>(0.013) | -0.270***<br>(0.019) |
| Is Protestant (=1)                    | 0.034**<br>(0.015)   | 0.073<br>(0.049)     | 0.029**<br>(0.012)   | 0.087***<br>(0.033)  | -0.022<br>(0.017)    | 0.008<br>(0.054)     |
| Proportion Protestant                 | 0.080<br>(0.103)     | 0.066<br>(0.099)     | 0.039<br>(0.086)     | 0.020<br>(0.095)     | -0.089<br>(0.131)    | -0.093<br>(0.101)    |
| Stressed * Protestant * Protestantism | 0.079<br>(0.054)     | -0.020<br>(0.111)    | 0.102<br>(0.074)     | 0.043<br>(0.130)     | 0.080<br>(0.076)     | -0.215<br>(0.170)    |
| Stress * Is Protestant                |                      | 0.010<br>(0.034)     |                      | -0.017<br>(0.039)    |                      | 0.080*<br>(0.045)    |
| Stress * Region Protestantism         |                      | 0.155**<br>(0.068)   |                      | 0.198**<br>(0.091)   |                      | 0.197**<br>(0.088)   |
| Protestant * Region Protestantism     |                      | -0.110<br>(0.166)    |                      | -0.158<br>(0.113)    |                      | -0.110<br>(0.203)    |
| $R^2$                                 | 0.238                | 0.238                | 0.104                | 0.104                | 0.083                | 0.083                |
| Observations                          | 628,955              | 628,955              | 636,001              | 636,001              | 250,362              | 250,362              |
| Countries                             | 148                  | 148                  | 148                  | 148                  | 135                  | 135                  |

Notes: Robust standard errors in parentheses, clustered on countries. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include world region and wave fixed effects, and controls for gender, age and its square, marital status, education level, household income, and children in the household. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup World Poll.

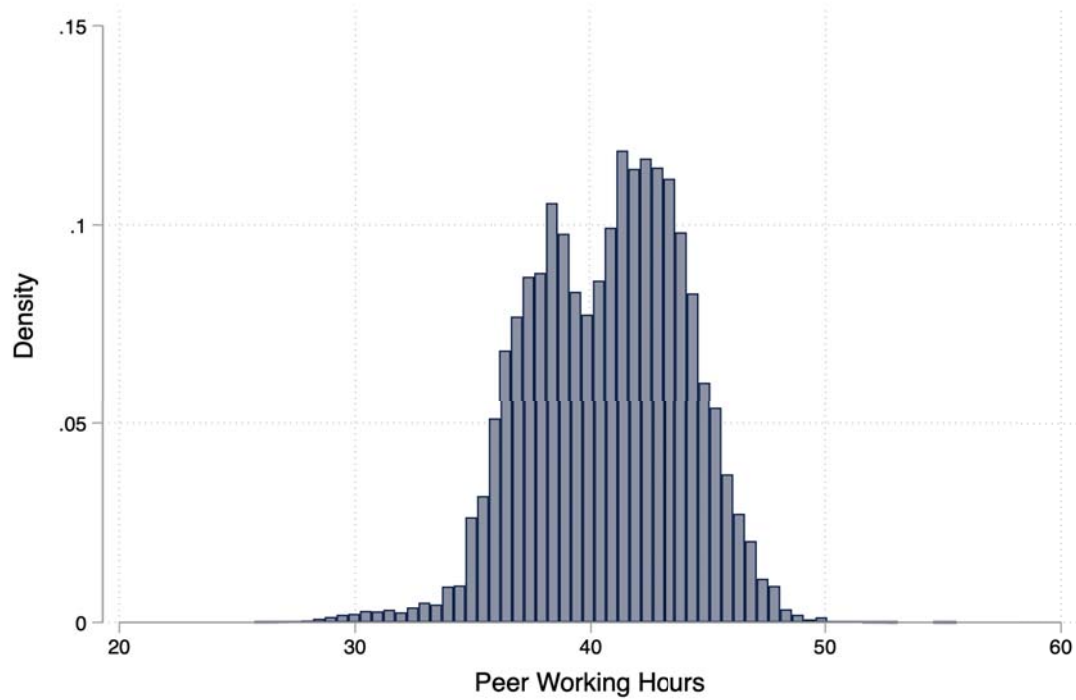
\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

### S3 Supplementary Materials for Study 2

**Current Population Survey.** The CPS is a survey of households conducted by the United States Census Bureau for the Bureau of Labor Statistics (BLS). Around 60,000 people are surveyed each month. We restrict our sample to include employed people.

*Peer Working Hours.* We calculate the mean reported usual weekly working hours of people in the Current Population Survey who are in the same state, year, age group (under 30, 30-39, 40-49, 50+), gender, and level of education (high school or less, some college, college, or masters+). We take the natural logarithm of this mean. This measure of logged working hours is then z-scored to have a mean of 0 and standard deviation across all of these state\*year\*gender\*age\*education cells in the USA.

Figure S4: Average Working Hours of Peers



Source: Current Population Survey.

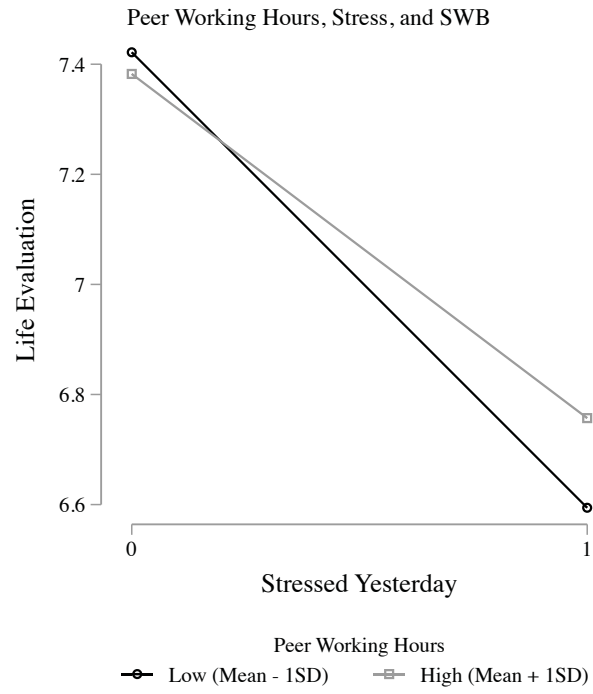
Table S13: Protestantism and Peer Working Hours

|                                      | Peer Working Hours (z-score) |                     |                     |                     |                     |                     |
|--------------------------------------|------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                      | (1)                          | (2)                 | (3)                 | (4)                 | (5)                 | (6)                 |
| Is a Protestant (=1)                 | 0.120***<br>(0.002)          | 0.038***<br>(0.001) |                     |                     | 0.120***<br>(0.002) | 0.038***<br>(0.001) |
| Proportion Protestant in 1930s (0-1) |                              |                     | 0.102***<br>(0.007) | 0.100***<br>(0.004) | 0.082***<br>(0.007) | 0.097***<br>(0.004) |
| Demographic Controls                 | No                           | Yes                 | No                  | Yes                 | No                  | Yes                 |
| $R^2$                                | 0.007                        | 0.722               | 0.003               | 0.722               | 0.007               | 0.725               |
| Observations                         | 1,142,596                    | 1,140,685           | 1,207,195           | 1,205,140           | 1,128,261           | 1,126,381           |

*Notes: Standard errors in parentheses, adjusted for clustering on date of survey. Outcome variables in all models is z-scored to have a center of 0 and an SD of 1. All models include controls for day of the week and month. Where indicated, further controls refer to gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. Sample is all employed respondents between the ages of 21 and 65.*

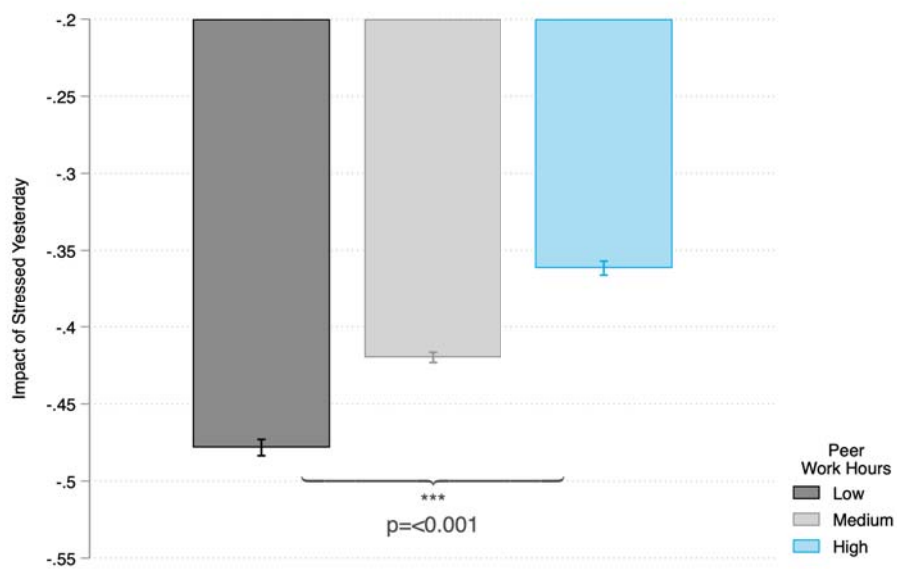
\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Figure S5



Graph shows linear predictions at different margins, based on column (2) of Table 3.

Figure S6: Impact of Stress on Life Evaluation in the Gallup Daily Poll



Notes: Coefficients and 95% confidence intervals are reported from a regression of z-scored life evaluation on the experience of stress yesterday. Stress is interacted with mean work hours of workers with the same state, year, age group, gender, and level of education. Coefficients are reported at the mean of peer work hours, and one SD above and below the mean. The regression controls for gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup Daily Poll, 2008-2017. Peer working hours are drawn from the CPS, and refer to mean hours of workers with the same state, year, age group, gender, and level of education. For full reporting of the model, see column (1) of Table 3. N= 1,026,419. Stars and p-value refers to the interaction term between stress and peer working hours in the equation. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table S14: Time Stress and SWB in the Gallup Daily Poll

|                                    | (1)<br>Life<br>Evaluation | (2)<br>Job<br>Satisfaction | (3)<br>Positive<br>Affect | (4)<br>Negative<br>Affect |
|------------------------------------|---------------------------|----------------------------|---------------------------|---------------------------|
| <b>Stress</b>                      |                           |                            |                           |                           |
| Not Enough Time Yesterday (=1)     | -0.218***<br>(0.003)      | -0.201***<br>(0.003)       | -0.292***<br>(0.003)      | 0.400***<br>(0.003)       |
| <b>Work Ethic Norms</b>            |                           |                            |                           |                           |
| Mean Work Hours of Peers (z-score) | 0.012***<br>(0.003)       | 0.027***<br>(0.003)        | 0.014***<br>(0.003)       | -0.015***<br>(0.003)      |
| <b>Interaction</b>                 |                           |                            |                           |                           |
| Time Stressed * Work Norm          | 0.040***<br>(0.003)       | 0.036***<br>(0.003)        | 0.032***<br>(0.003)       | -0.053***<br>(0.003)      |
| $R^2$                              | 0.091                     | 0.034                      | 0.038                     | 0.062                     |
| Observations                       | 614,046                   | 667,721                    | 674,546                   | 678,062                   |

Notes: Standard errors in parentheses, adjusted for clustering on date of survey. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. Sample is all employed respondents between the ages of 21 and 65.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table S15: Working Hours, Protestantism, and Life Evaluation

|                                    | Whole Sample         |                      |                      |                      | Protestants          | Non-Prot             |
|------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                    | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  |
| <b>Stress</b>                      |                      |                      |                      |                      |                      |                      |
| Stressed Yesterday (=1)            | -0.420***<br>(0.002) | -0.432***<br>(0.002) | -0.430***<br>(0.004) | -0.441***<br>(0.004) | -0.386***<br>(0.006) | -0.444***<br>(0.004) |
| <b>Work Values</b>                 |                      |                      |                      |                      |                      |                      |
| Mean Work Hours of Peers (z-score) | -0.011***<br>(0.002) | -0.010***<br>(0.002) | -0.012***<br>(0.002) | -0.011***<br>(0.002) | 0.000<br>(0.004)     | -0.015***<br>(0.003) |
| Is Protestant (=1)                 |                      | 0.008***<br>(0.003)  |                      | 0.009***<br>(0.003)  |                      |                      |
| Proportion Protestant              |                      |                      | -0.052***<br>(0.010) | -0.052***<br>(0.010) | 0.023<br>(0.016)     | -0.088***<br>(0.012) |
| <b>Interaction</b>                 |                      |                      |                      |                      |                      |                      |
| Stressed * Peer Work Hours         | 0.058***<br>(0.002)  | 0.056***<br>(0.002)  | 0.058***<br>(0.002)  | 0.056***<br>(0.002)  | 0.046***<br>(0.004)  | 0.059***<br>(0.003)  |
| Stress * Is Protestant             |                      | 0.047***<br>(0.004)  |                      | 0.047***<br>(0.004)  |                      |                      |
| Stress * County Protestantism      |                      |                      | 0.055***<br>(0.015)  | 0.046***<br>(0.016)  | 0.029<br>(0.027)     | 0.056***<br>(0.020)  |
| $R^2$                              | 0.119                | 0.118                | 0.119                | 0.118                | 0.122                | 0.115                |
| Observations                       | 1,026,419            | 946,908              | 1,013,489            | 935,001              | 268,292              | 666,709              |

Notes: Standard errors in parentheses, adjusted for clustering on date of survey. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. Sample is all employed respondents between the ages of 21 and 65.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

## S4 Supplementary Materials for Study 3(a)

### Data Description

**The American Time Use Survey.** ATUS is run by the BLS and the US Census Bureau. It is a time-use survey, which surveys respondents on the amount of time they spend on various different activities such as working, leisure, personal care, and household activities. Participants are drawn from the CPS, and are interviewed around 2 to 5 months after their final CPS survey. One randomly-selected person is interviewed from each CPS household.

In the years 2010, 2012 and 2013 a well-being module was included in the time-use survey. In addition to how respondents spent their day (which activities, how long and when was each activity, with whom were they during the activity, and so on), the well-being module also asks how they felt during these activities. Three of the activities that the respondent reports about their time yesterday are randomly selected.

**Activity-Level SWB Measures.** For each of the three randomly selected activities, respondents are asked “*Please use a scale from 0 to 6, where a 0 means you did not experience this feeling at all and a 6 means the feeling was very strong. You may choose any number 0,1,2,3,4,5 or 6 to reflect how strongly you experienced this feeling during this time.*” We focus on the extent to which the respondents felt stress and happy during the different activities.

**Person-Level SWB Measures.** The ATUS data is used at the activity-level in Study 4. In Study 2, we focus on the person-level. In addition to the activity-specific questions, respondents are also asked a more general set of overall questions about their health and well-being. We focus for our main outcome measure on life evaluation, which is measured via the Cantril Ladder, as in the Gallup survey (see above). This was not asked in 2010.

In addition, we also construct an outcome measure of happiness, which is the mean of 0-6 happiness responses for the 3 selected activities (totaling around 3.5 hours of the individual’s day), weighted by their duration (as well as by their activity-level well-being survey weight). We retain for our analyses respondents for whom we have activity-level data for at least 90 minutes of the day.

**Stress.** In order to construct a measure of day-level stress, we create an S-Index. This is akin to the well-known U-Index suggested by (author?) (39, 44) – which is the proportion of the day spent in activities in which the highest rated feeling was negative. Our S-Index corresponds to the percentage of the day in which the respondent is under stress. Specifically, it is a 0-1 variable that corresponds to the amount of time that the respondent spends doing activities in which stress dominates positive emotions. We retain for our analyses respondents for whom we have activity-level data for at least 90 minutes of the day.

**Peer Working Hours.** We calculate the mean reported usual weekly working hours of peers using the CPS, in the same manner as for the Gallup data. We remove from these calculated means the focal ATUS respondent. The measure of logged peer working hours is z-scored to have a mean of 0 and standard deviation across all of the state\*year\*gender\*age\*education cells in the USA.

Table S16: ATUS: Person-Level Summary Statistics

| Variable                   | Obs   | Mean | Std. Dev. | Min  | Max  |
|----------------------------|-------|------|-----------|------|------|
| Life Evaluation            | 11403 | 7.11 | 1.82      | 0    | 10   |
| Mean Happiness Yesterday   | 18182 | 4.35 | 1.35      | 0    | 6    |
| Stress Index (0-1)         | 18182 | .12  | .27       | 0    | 1    |
| Peer Working Hours (ln)    | 19189 | 3.68 | .09       | 3.25 | 3.95 |
| Female                     | 19189 | .5   | .5        | 0    | 1    |
| Age                        | 19189 | 42.8 | 11.27     | 21   | 65   |
| Number of Children         | 19189 | .98  | 1.14      | 0    | 10   |
| Household Size             | 19189 | 2.94 | 1.5       | 1    | 15   |
| High School or Less        | 19189 | .47  | .5        | 0    | 1    |
| Some College               | 19189 | .11  | .32       | 0    | 1    |
| Degree                     | 19189 | .26  | .44       | 0    | 1    |
| Masters or more            | 19189 | .16  | .36       | 0    | 1    |
| Married - spouse present   | 19189 | .55  | .5        | 0    | 1    |
| Married - spouse absent    | 19189 | .02  | .13       | 0    | 1    |
| Widowed                    | 19189 | .02  | .15       | 0    | 1    |
| Divorced                   | 19189 | .15  | .35       | 0    | 1    |
| Separated                  | 19189 | .03  | .17       | 0    | 1    |
| Never married              | 19189 | .24  | .42       | 0    | 1    |
| Income \$less than \$5,000 | 19189 | .01  | .12       | 0    | 1    |
| \$5,000 to \$7,499         | 19189 | .01  | .1        | 0    | 1    |
| \$7,500 to \$9,999         | 19189 | .01  | .1        | 0    | 1    |
| \$10,000 to \$12,499       | 19189 | .02  | .13       | 0    | 1    |
| \$12,500 to \$14,999       | 19189 | .02  | .13       | 0    | 1    |
| \$15,000 to \$19,999       | 19189 | .03  | .18       | 0    | 1    |
| \$20,000 to \$24,999       | 19189 | .04  | .2        | 0    | 1    |
| \$25,000 to \$29,999       | 19189 | .05  | .22       | 0    | 1    |
| \$30,000 to \$34,999       | 19189 | .06  | .23       | 0    | 1    |
| \$35,000 to \$39,999       | 19189 | .05  | .22       | 0    | 1    |
| \$40,000 to \$49,999       | 19189 | .09  | .29       | 0    | 1    |
| \$50,000 to \$59,999       | 19189 | .09  | .29       | 0    | 1    |
| \$60,000 to \$74,999       | 19189 | .12  | .32       | 0    | 1    |
| \$75,000 to \$99,999       | 19189 | .14  | .35       | 0    | 1    |
| \$100,000 to \$149,999     | 19189 | .14  | .35       | 0    | 1    |
| \$150,000 and over         | 19189 | .1   | .3        | 0    | 1    |

Table S17: Correlation Matrix: ATUS

|                        | (1)   | (2)   | (3)   | (4)  | (5) |
|------------------------|-------|-------|-------|------|-----|
| (1) Life Evaluation    | 1     |       |       |      |     |
| (2) Happiness          | 0.33  | 1     |       |      |     |
| (3) Stress Index       | -0.23 | -0.51 | 1     |      |     |
| (4) Peer Working Hours | 0.04  | -0.06 | -0.01 | 1    |     |
| (5) Own Working Hours  | 0.01  | -0.03 | 0.03  | 0.24 | 1   |



Table S18: Stress and SWB in the American Time Use Survey

|                                    | Life Evaluation      |                      | Happiness Yesterday  |                      |
|------------------------------------|----------------------|----------------------|----------------------|----------------------|
|                                    | (1)                  | (2)                  | (3)                  | (4)                  |
| <b>Stress</b>                      |                      |                      |                      |                      |
| Stress Index (0-1)                 | -0.844***<br>(0.039) | -0.831***<br>(0.039) | -1.830***<br>(0.028) | -1.819***<br>(0.028) |
| <b>Work Values</b>                 |                      |                      |                      |                      |
| Mean Work Hours of Peers (z-score) | 0.020<br>(0.022)     | 0.006<br>(0.023)     | 0.011<br>(0.016)     | 0.002<br>(0.016)     |
| <b>Interactions</b>                |                      |                      |                      |                      |
| S-Index * Peer Work Hours          |                      | 0.130***<br>(0.041)  |                      | 0.074***<br>(0.028)  |
| $R^2$                              | 0.245                | 0.246                | 0.402                | 0.402                |
| Observations                       | 8,008                | 8,008                | 12,670               | 12,670               |

Notes: Standard errors in parentheses. Analysis is at the person-day level. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, household size, marital status, education level, household income, and fixed effects for occupation and date. Sample is all employed respondents between the ages of 21 and 65. Source: American Time Use Survey, 2010-2013.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

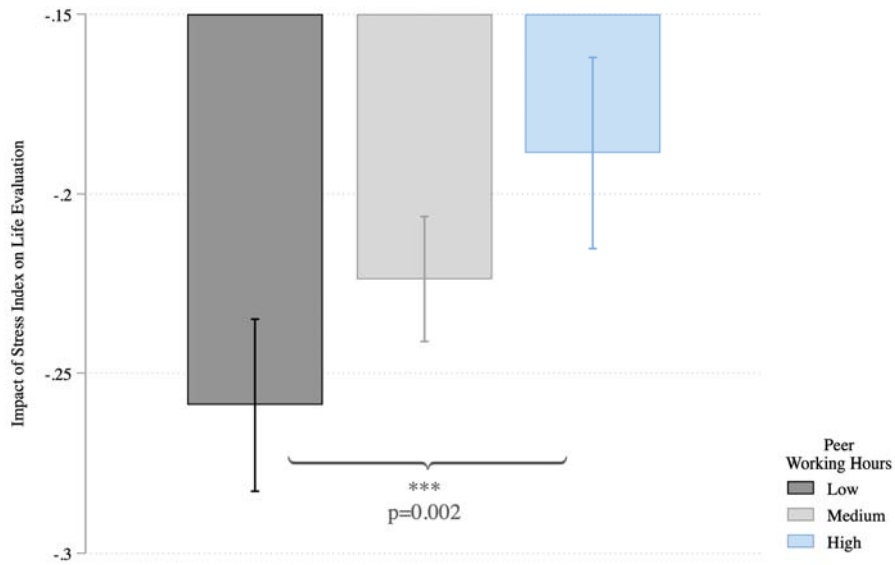
Table S19: Stress and SWB in ATUS: Three-Way Interaction with Own Usual Weekly Work Hours

|                                    | Life Evaluation      |                      | Happiness Yesterday  |                      |
|------------------------------------|----------------------|----------------------|----------------------|----------------------|
|                                    | (1)                  | (2)                  | (3)                  | (4)                  |
| Stress Index (0-1)                 | -0.840***<br>(0.041) | -0.825***<br>(0.043) | -1.826***<br>(0.029) | -1.823***<br>(0.030) |
| Usual Work Hours (z-score)         | 0.013<br>(0.013)     | 0.018<br>(0.014)     | 0.005<br>(0.009)     | -0.002<br>(0.010)    |
| Mean Work Hours of Peers (z-score) | 0.031<br>(0.023)     | 0.019<br>(0.024)     | 0.004<br>(0.016)     | -0.005<br>(0.017)    |
| S-Index * Peer Work Hours          |                      | 0.142***<br>(0.045)  |                      | 0.072**<br>(0.030)   |
| S-Index * Own Hours                |                      | -0.012<br>(0.048)    |                      | 0.047<br>(0.034)     |
| Own * Peer Work Hours              |                      | 0.011<br>(0.012)     |                      | -0.005<br>(0.009)    |
| S-Index * Peer Hours * Own Hours   |                      | -0.005<br>(0.044)    |                      | 0.003<br>(0.031)     |
| $R^2$                              | 0.250                | 0.251                | 0.406                | 0.406                |
| Observations                       | 7,582                | 7,582                | 11,967               | 11,967               |

Notes: Standard errors in parentheses. Analysis is at the person-day level. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, household size, marital status, education level, household income, and fixed effects for occupation and date. Sample is all employed respondents between the ages of 21 and 65. Source: American Time Use Survey, 2010-2013.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Figure S7: The Impact of Stress on Life Evaluation According to Peer Working Hours in ATUS



Notes: Coefficients and 95% confidence intervals are reported from a regression of z-scored life evaluation on an index of the experience of stress yesterday. Stress is interacted with mean work hours of workers with the same state, year, age group, gender, and level of education. Coefficients are reported at the mean of peer work hours, and one SD above and below the mean. The regression controls for gender, age and its square, number of children in household, household size, marital status, education level, household income, and fixed effects for occupation and date. Sample is all employed respondents between the ages of 21 and 65. Source: American Time Use Survey, 2010-2013. Analysis is at the person-day level. For full reporting of the model, see column (1) of Table S18. N= 8,008. Stars and p-value refers to the interaction term between stress and peer working hours in the equation. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

## S5 Supplementary Materials for Study 3(b)

### S5.1 Data Description

We use the ATUS data at the activity-level. See above (Study 2) for more detail on ATUS in general. We focus on the three activities, randomly selected, from yesterday for which well-being questions were asked. The average duration of each activity is just over 1 hour.

**Outcome Measures.** We use two of the measures, outlined above, relating to the extent to which the respondent felt happy and stressed (on a 0-6) scale during each of the three activities.

**Activity Type.** ATUS codes each activity according to a detailed coding lexicon (see <https://www.bls.gov/tus/lexicons.htm>) There are 18 broad categories of activity, as well as more detailed sub-categories. We use the broad categories of “Work and Work-Related Activities”. This is equal to 1 if working, 0 otherwise. We pool “Socializing, Relaxing, and Leisure”, “Sports, Exercise, and Recreation” and “Religious and Spiritual Activities ” as leisure, and code it into a variable equal to 1 if socializing/leisure, 0 otherwise.

Table S20: ATUS: Activity-Level Summary Statistics

| Variable                 | Obs   | Mean | Std. Dev. | Min  | Max  |
|--------------------------|-------|------|-----------|------|------|
| stress                   | 50939 | 1.33 | 1.7       | 0    | 6    |
| happy                    | 50837 | 4.37 | 1.54      | 0    | 6    |
| Working (=1)             | 50939 | .11  | .31       | 0    | 1    |
| Leisure/Socializing (=1) | 50939 | .18  | .39       | 0    | 1    |
| Active Leisure (=1)      | 50939 | .08  | .27       | 0    | 1    |
| Passive Leisure (=1)     | 50939 | .1   | .3        | 0    | 1    |
| Duration of activity     | 50939 | 68.8 | 98.69     | 5    | 1200 |
| log_norm_hrs_usual       | 50939 | 3.68 | .09       | 3.25 | 3.95 |

Table S21: Correlation Matrix: ATUS Activity-Level

|                        | (1)   | (2)   | (3)   | (4)  | (5)  | (6)  | (7) |
|------------------------|-------|-------|-------|------|------|------|-----|
| (1) Happy              | 1     |       |       |      |      |      |     |
| (2) Stress             | -0.32 | 1     |       |      |      |      |     |
| (3) Leisure            | 0.05  | -0.11 | 1     |      |      |      |     |
| (4) Working            | -0.10 | 0.19  | -0.16 | 1    |      |      |     |
| (5) Duration           | -0.03 | 0.10  | 0.16  | 0.52 | 1    |      |     |
| (6) Own Working Hours  | -0.01 | 0.02  | -0.02 | 0.08 | 0.05 | 1    |     |
| (7) Peer Working Hours | -0.03 | -0.03 | 0.01  | 0.03 | 0.03 | 0.23 | 1   |

Table S22: Activity-Level Analysis in ATUS: Pooled Cross-Section

|                                    | Stress               |                      | Happiness            |                      |
|------------------------------------|----------------------|----------------------|----------------------|----------------------|
|                                    | (1)                  | (2)                  | (3)                  | (4)                  |
| <b>Activity Type</b>               |                      |                      |                      |                      |
| Working (=1)                       | 0.480***<br>(0.026)  | 0.481***<br>(0.026)  | -0.263***<br>(0.025) | -0.265***<br>(0.025) |
| Leisure/Socializing (=1)           | -0.266***<br>(0.018) |                      | 0.105***<br>(0.018)  |                      |
| Active Leisure (=1)                |                      | -0.319***<br>(0.022) |                      | 0.313***<br>(0.023)  |
| Passive Leisure (=1)               |                      | -0.234***<br>(0.021) |                      | -0.022<br>(0.023)    |
| <b>Work Norms</b>                  |                      |                      |                      |                      |
| Mean Work Hours of Peers (z-score) | -0.060***<br>(0.019) | -0.060***<br>(0.019) | 0.007<br>(0.018)     | 0.007<br>(0.018)     |
| <b>Interactions</b>                |                      |                      |                      |                      |
| Working * Peer Hours               | 0.016<br>(0.021)     | 0.016<br>(0.021)     | 0.006<br>(0.019)     | 0.007<br>(0.019)     |
| Leisure * Peer Hours               | 0.039**<br>(0.017)   |                      | -0.015<br>(0.017)    |                      |
| Active Leisure * Peer Hours        |                      | 0.016<br>(0.022)     |                      | -0.003<br>(0.022)    |
| Passive Leisure * Peer Hours       |                      | 0.054***<br>(0.020)  |                      | -0.019<br>(0.021)    |
| $R^2$                              | 0.249                | 0.249                | 0.169                | 0.175                |
| Observations                       | 53,988               | 53,988               | 53,895               | 53,895               |
| Individuals                        | 18,334               | 18,334               | 18,320               | 18,320               |

Notes: Robust standard errors in parentheses, clustered on individuals. Analysis is at the person-activity level. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, household size, marital status, education level, household income, occupation, ordering of SWB question, day of the week, and year. Sample is all employed respondents between the ages of 21 and 65. Source: American Time Use Survey, 2010-2013. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table S23: Activity-Level Analysis in ATUS: Three-Way Interaction with Own Usual Weekly Work Hours

|                                  | (1)                 | (2)                  | (3)                  | (4)                 |
|----------------------------------|---------------------|----------------------|----------------------|---------------------|
|                                  | Stress              | Happiness            | Stress               | Happiness           |
| Working (=1)                     | 0.512***<br>(0.028) | -0.329***<br>(0.031) |                      |                     |
| Working * Peer Hours             | -0.023<br>(0.022)   | 0.011<br>(0.023)     |                      |                     |
| Working * Own Work Hours         | 0.122***<br>(0.030) | -0.072**<br>(0.030)  |                      |                     |
| Working * Own Hours * Peer Hours | -0.027<br>(0.019)   | 0.003<br>(0.030)     |                      |                     |
| Leisure/Socializing (=1)         |                     |                      | -0.325***<br>(0.017) | 0.171***<br>(0.019) |
| Leisure * Peer Hours             |                     |                      | 0.036**<br>(0.018)   | -0.042**<br>(0.020) |
| Leisure * Own Work Hours         |                     |                      | -0.014<br>(0.020)    | 0.053**<br>(0.022)  |
| Leisure * Own Hours * Peer Hours |                     |                      | 0.009<br>(0.019)     | 0.000<br>(0.018)    |
| $R^2$                            | 0.823               | 0.794                | 0.820                | 0.792               |
| Observations                     | 50,868              | 50,777               | 50,868               | 50,777              |
| Individuals                      | 17,224              | 17,205               | 17,224               | 17,205              |

Notes: Robust standard errors in parentheses, clustered on individuals. Analysis is at the person-activity level. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. Own and peer hours are the natural logarithm of weekly hours usually worked by the respondent and people of her age, gender, state and education level which we z-score. All models include individual and date fixed effects, as well as ordering of SWB question. Sample is all employed respondents between the ages of 21 and 65. Source: American Time Use Survey, 2010-2013.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

## S6 Supplementary Materials for Study 4

### Data Description

**Global Happiness and Political Attitudes Survey.** The GHPAS surveys a random sample of respondents in 15 countries, across 6 continents. These 15 countries represent around 52% of the world's population. The countries included are: Australia, Brazil, China, Finland, France, Germany, Hungary, India, Italy, Russia, South Africa, Turkey, UK, USA, Ukraine. Surveys were carried out in May & June 2019. The survey was carried out on behalf of the Victor Pinchuk Foundation.

In each country a sample of around 1,000 was collected, with the exception of Australia (500 respondents). Samples are representative of national populations for all countries, except for India and South Africa. For these two countries, the survey is representative of the population with internet access. Interviews in Hungary were a mixture of face-to-face and online. Russia and Ukraine were telephone and online. Remaining countries were online only.

**SWB Measures** are elicited in the following ways:

- Life evaluation is measured using the 0-10 Cantril Ladder, as in the Gallup and ATUS analyses.
- Job satisfaction: *“Generally speaking, how satisfied are you with your current job on a scale from 1 to 7 with 1 being “Not satisfied at all” and 7 being “Very satisfied”?”*
- Affect: *“The following questions ask about how you felt yesterday on a scale from 0 to 10. Zero means you did not experience the feeling “at all” yesterday while 10 means you experienced the feeling “all the time” yesterday. I will now read you a list of ways you might have felt yesterday.”*
- Positive affect is the mean of happy, cheerful, joyful, excited, and engaged.

**Stress.** *“Within the past week, how often have you felt stressed at work? Please answer on a scale of 0 to 10. Zero means you did not experience stress “at all” while 10 means you experienced stress “all the time”.*

**Work Values Measures.** *“Do you agree or disagree with the following statements?”*. Responses are elicited on a 1-5 scale, from strongly disagree to strongly agree. We look at each statement individually, as well as construct a summary index, which is the first principal component of the four variables.

- I live in a place where people tend to value work over leisure
- Work should come first even if it means less spare time
- Even if I were financially able, I would not stop working
- It is work that makes life worth living, not leisure

Table S24: Summary Statistics: Global Happiness and Political Attitudes Survey

| Variable                       | Obs  | Mean | Std. Dev. | Min   | Max |
|--------------------------------|------|------|-----------|-------|-----|
| Life Evaluation                | 7106 | 6.54 | 1.92      | 0     | 10  |
| Job Satisfaction               | 7106 | 4.83 | 1.57      | 1     | 7   |
| Positive Affect                | 7106 | 6.28 | 1.97      | 0     | 10  |
| Work Norms (PCA)               | 7106 | 0    | 1.47      | -3.25 | 3.3 |
| People Value Work              | 7106 | 2.73 | 1.35      | 0     | 5   |
| Work Comes First               | 7106 | 2.12 | 1.53      | 0     | 5   |
| Would Always Work              | 7106 | 2.86 | 1.6       | 0     | 5   |
| Work Makes Life                | 7106 | 2.3  | 1.55      | 0     | 5   |
| Stress at Work                 | 7106 | 5.39 | 2.69      | 0     | 10  |
| Male                           | 7106 | .52  | .5        | 0     | 1   |
| Children in Household          | 7106 | .52  | .5        | 0     | 1   |
| University Educated            | 7106 | .47  | .5        | 0     | 1   |
| Age 21-29                      | 7106 | .21  | .41       | 0     | 1   |
| Age 30-35                      | 7106 | .17  | .38       | 0     | 1   |
| Age 36-44                      | 7106 | .26  | .44       | 0     | 1   |
| Age 45-54                      | 7106 | .23  | .42       | 0     | 1   |
| Age 55-64                      | 7106 | .12  | .33       | 0     | 1   |
| Marital: Single, never married | 7106 | .24  | .43       | 0     | 1   |
| Single and living with someone | 7106 | .09  | .29       | 0     | 1   |
| Married/Domestic partnership   | 7106 | .59  | .49       | 0     | 1   |
| Divorced                       | 7106 | .06  | .23       | 0     | 1   |
| Separated                      | 7106 | .01  | .12       | 0     | 1   |
| Widowed                        | 7106 | .01  | .1        | 0     | 1   |
| Job Type: Professional         | 7106 | .26  | .44       | 0     | 1   |
| Managerial                     | 7106 | .16  | .37       | 0     | 1   |
| Technical                      | 7106 | .12  | .32       | 0     | 1   |
| Trade                          | 7106 | .08  | .26       | 0     | 1   |
| Service                        | 7106 | .13  | .33       | 0     | 1   |
| Admin/clerical                 | 7106 | .15  | .35       | 0     | 1   |
| Other                          | 7106 | .1   | .3        | 0     | 1   |

Table S25: Correlation Matrix: GHPAS

|                       | (1)   | (2)   | (3)   | (4)  | (5)  | (6)  | (7)  | (8)  | (9)  | (10) |
|-----------------------|-------|-------|-------|------|------|------|------|------|------|------|
| (1) Life Evaluation   | 1     |       |       |      |      |      |      |      |      |      |
| (2) Job Satisfaction  | 0.45  | 1     |       |      |      |      |      |      |      |      |
| (3) Positive Affect   | 0.62  | 0.42  | 1     |      |      |      |      |      |      |      |
| (4) Negative Affect   | -0.10 | -0.08 | -0.15 | 1    |      |      |      |      |      |      |
| (5) Work Stress       | -0.02 | -0.13 | -0.02 | 0.37 | 1    |      |      |      |      |      |
| (6) Work Norm (PCA)   | 0.19  | 0.29  | 0.24  | 0.12 | 0.10 | 1    |      |      |      |      |
| (7) People Value Work | 0.17  | 0.17  | 0.18  | 0.05 | 0.10 | 0.58 | 1    |      |      |      |
| (8) Work Comes First  | 0.13  | 0.20  | 0.16  | 0.19 | 0.13 | 0.76 | 0.32 | 1    |      |      |
| (9) Would Always Work | 0.15  | 0.25  | 0.19  | 0.03 | 0.00 | 0.73 | 0.25 | 0.34 | 1    |      |
| (10) Work Makes Life  | 0.12  | 0.23  | 0.17  | 0.09 | 0.07 | 0.84 | 0.29 | 0.53 | 0.53 | 1    |

Table S26: Stress, Work Values, and SWB: International Evidence

|                             | Life Evaluation      |                      | Positive Affect      |                      |
|-----------------------------|----------------------|----------------------|----------------------|----------------------|
|                             | (1)                  | (2)                  | (3)                  | (4)                  |
| <b>Stress</b>               |                      |                      |                      |                      |
| Work Stress (0-10)          | -0.029***<br>(0.009) | -0.028***<br>(0.008) | -0.031***<br>(0.010) | -0.030***<br>(0.009) |
| <b>Work Values</b>          |                      |                      |                      |                      |
| Work Values Index (z-score) | 0.160***<br>(0.024)  | 0.073**<br>(0.030)   | 0.186***<br>(0.026)  | 0.101***<br>(0.028)  |
| <b>Interaction</b>          |                      |                      |                      |                      |
| Stress * Index              |                      | 0.016***<br>(0.005)  |                      | 0.016***<br>(0.005)  |
| $R^2$                       | 0.153                | 0.156                | 0.128                | 0.131                |
| Observations                | 7,991                | 7,991                | 7,991                | 7,991                |

*Notes: Robust standard errors in parentheses, clustered on countries. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include country fixed effects, and controls for gender, age group dummies, number of children in household, marital status, education level, household income, occupation. Sample is all employed respondents between the ages of 21 and 65. Source: Global Happiness and Political Attitudes Survey, 2019. Countries included: Australia, Brazil, China, Finland, France, Germany, Hungary, India, Italy, Russia, South Africa, Turkey, UK, USA, Ukraine.*

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .



Table S27: Work Values and Life Evaluation

|                                   | Life Evaluation      |                      |                      |                     |                     |
|-----------------------------------|----------------------|----------------------|----------------------|---------------------|---------------------|
|                                   | (1)                  | (2)                  | (3)                  | (4)                 | (5)                 |
| <b>Stress</b>                     |                      |                      |                      |                     |                     |
| Work Stress (0-10)                | -0.028***<br>(0.008) | -0.029***<br>(0.009) | -0.028***<br>(0.009) | -0.025**<br>(0.010) | -0.027**<br>(0.009) |
| <b>Work Values</b>                |                      |                      |                      |                     |                     |
| Work Values (Index)               | 0.073**<br>(0.030)   |                      |                      |                     |                     |
| People Around Me Value Work Most  |                      | 0.080***<br>(0.024)  |                      |                     |                     |
| Work Should Come First in Life    |                      |                      | -0.010<br>(0.031)    |                     |                     |
| Would Work Even If Didn't Need To |                      |                      |                      | 0.071**<br>(0.026)  |                     |
| Work Makes Life Worth Living      |                      |                      |                      |                     | 0.043<br>(0.028)    |
| <b>Interactions</b>               |                      |                      |                      |                     |                     |
| Stress * Index                    | 0.016***<br>(0.005)  |                      |                      |                     |                     |
| Stress * People Value Work        |                      | 0.008**<br>(0.003)   |                      |                     |                     |
| Stress * Work Comes First         |                      |                      | 0.018**<br>(0.006)   |                     |                     |
| Stress * Would Always Work        |                      |                      |                      | 0.009**<br>(0.004)  |                     |
| Stress * Work Makes Life          |                      |                      |                      |                     | 0.015***<br>(0.005) |
| $R^2$                             | 0.156                | 0.146                | 0.140                | 0.145               | 0.145               |
| Observations                      | 7,991                | 7,991                | 7,991                | 7,991               | 7,991               |

Notes: Robust standard errors in parentheses, clustered on countries. Outcome variable is the Cantril Ladder, z-scored to have a center of 0 and an SD of 1. All models include country fixed effects, and controls for gender, age group dummies, number of children in household, marital status, education level, household income, occupation. Sample is all employed respondents between the ages of 21 and 65. Source: Global Happiness and Political Attitudes Survey, 2019.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

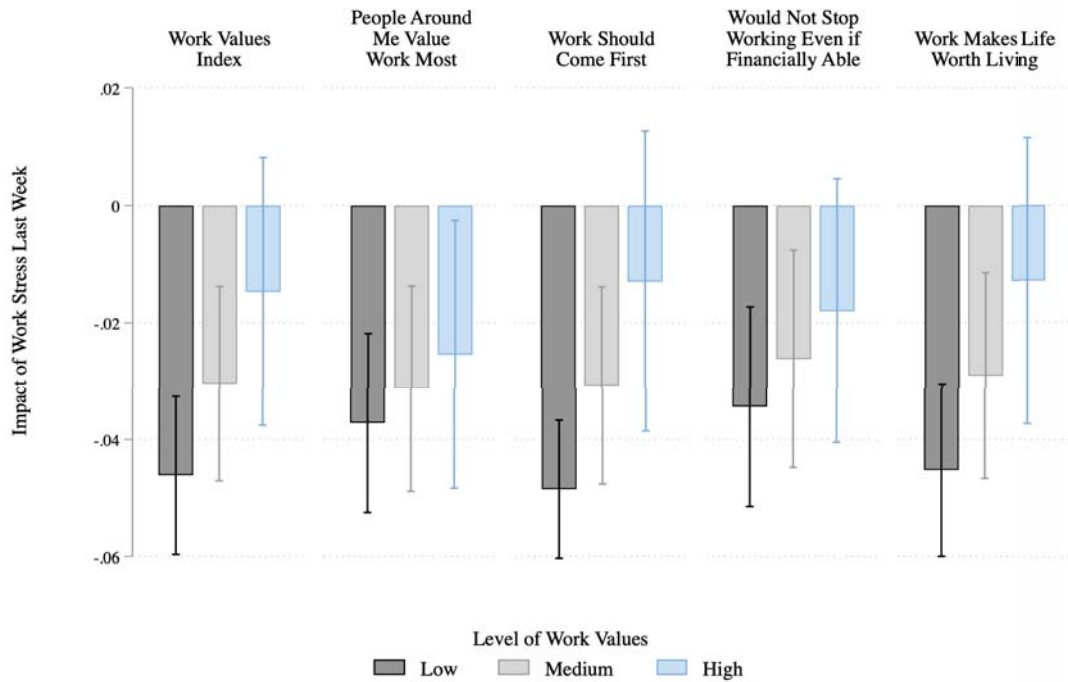
Table S28: Work Values and Positive Affect

|                                   | Positive Affect      |                      |                      |                     |                     |
|-----------------------------------|----------------------|----------------------|----------------------|---------------------|---------------------|
|                                   | (1)                  | (2)                  | (3)                  | (4)                 | (5)                 |
| <b>Stress</b>                     |                      |                      |                      |                     |                     |
| Work Stress (0-10)                | -0.030***<br>(0.009) | -0.031***<br>(0.010) | -0.031***<br>(0.010) | -0.026**<br>(0.011) | -0.029**<br>(0.010) |
| <b>Work Values</b>                |                      |                      |                      |                     |                     |
| Work Values (Index)               | 0.101***<br>(0.028)  |                      |                      |                     |                     |
| People Around Me Value Work Most  |                      | 0.097***<br>(0.022)  |                      |                     |                     |
| Work Should Come First in Life    |                      |                      | 0.002<br>(0.028)     |                     |                     |
| Would Work Even If Didn't Need To |                      |                      |                      | 0.103***<br>(0.028) |                     |
| Work Makes Life Worth Living      |                      |                      |                      |                     | 0.059**<br>(0.027)  |
| <b>Interactions</b>               |                      |                      |                      |                     |                     |
| Stress * Index                    | 0.016***<br>(0.005)  |                      |                      |                     |                     |
| Stress * People Value Work        |                      | 0.006<br>(0.005)     |                      |                     |                     |
| Stress * Work Comes First         |                      |                      | 0.018**<br>(0.006)   |                     |                     |
| Stress * Would Always Work        |                      |                      |                      | 0.008*<br>(0.004)   |                     |
| Stress * Work Makes Life          |                      |                      |                      |                     | 0.016**<br>(0.006)  |
| $R^2$                             | 0.131                | 0.114                | 0.109                | 0.119               | 0.118               |
| Observations                      | 7,991                | 7,991                | 7,991                | 7,991               | 7,991               |

*Notes: Robust standard errors in parentheses, clustered on countries. Outcome variable is the mean of responses to the experience yesterday of sadness, worry, anger and anxiety, which is then z-scored to have a center of 0 and an SD of 1. All models include country fixed effects, and controls for gender, age group dummies, number of children in household, marital status, education level, household income, occupation. Sample is all employed respondents between the ages of 21 and 65. Source: Global Happiness and Political Attitudes Survey, 2019.*

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Figure S8: Impact of Work Stress on Positive Affect



Notes: Coefficients and 95% confidence intervals are reported from a series of regressions of z-scored job positive affect on the experience of stress over the past week (0-10 scale). In each case, stress is interacted with a measure of work values. Coefficients are reported at the mean of each work values variable, and one SD above and below the mean. All models controls for gender, age group dummies, number of children in household, marital status, education level, household income, occupation. Sample is all employed respondents between the ages of 21 and 65. Source: Global Happiness and Political Attitudes Survey, 2019. For full reporting of the models, see of Table S28.

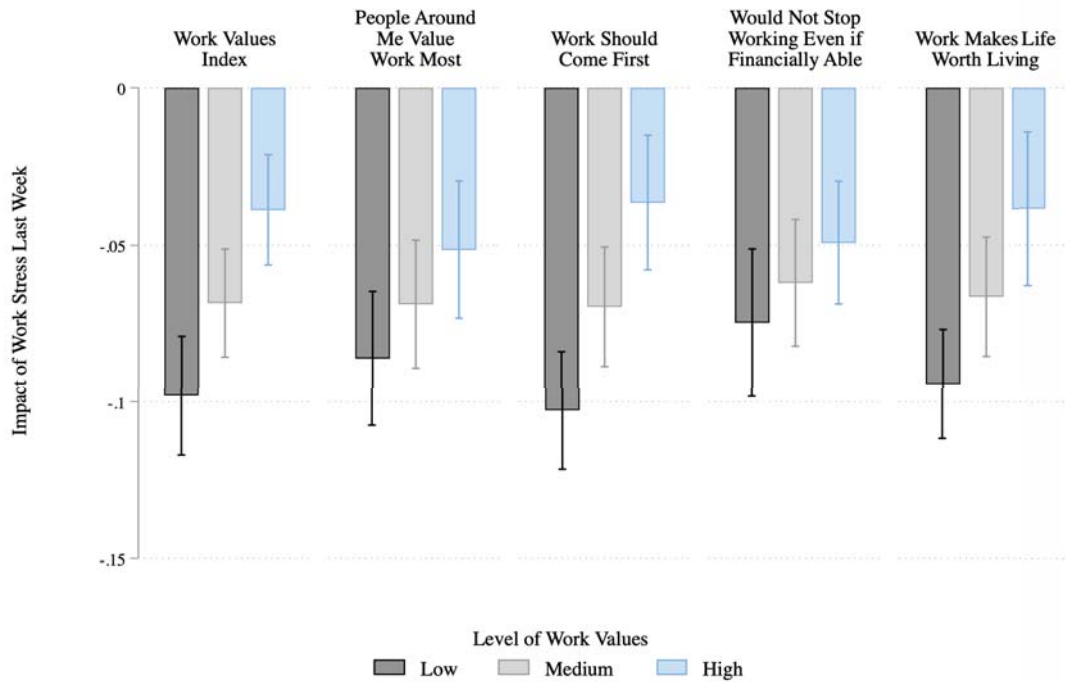
Table S29: Work Values and Job Satisfaction

|                                   | Job Satisfaction     |                      |                      |                      |                      |
|-----------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                   | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  |
| <b>Stress</b>                     |                      |                      |                      |                      |                      |
| Work Stress (0-10)                | -0.068***<br>(0.010) | -0.069***<br>(0.012) | -0.070***<br>(0.011) | -0.062***<br>(0.011) | -0.066***<br>(0.011) |
| <b>Work Values</b>                |                      |                      |                      |                      |                      |
| Work Values (Index)               | 0.129***<br>(0.030)  |                      |                      |                      |                      |
| People Around Me Value Work Most  |                      | 0.052<br>(0.035)     |                      |                      |                      |
| Work Should Come First in Life    |                      |                      | 0.002<br>(0.021)     |                      |                      |
| Would Work Even If Didn't Need To |                      |                      |                      | 0.164***<br>(0.029)  |                      |
| Work Makes Life Worth Living      |                      |                      |                      |                      | 0.087**<br>(0.039)   |
| <b>Interactions</b>               |                      |                      |                      |                      |                      |
| Stress * Index                    | 0.030***<br>(0.003)  |                      |                      |                      |                      |
| Stress * People Value Work        |                      | 0.017***<br>(0.004)  |                      |                      |                      |
| Stress * Work Comes First         |                      |                      | 0.033***<br>(0.004)  |                      |                      |
| Stress * Would Always Work        |                      |                      |                      | 0.013**<br>(0.004)   |                      |
| Stress * Work Makes Life          |                      |                      |                      |                      | 0.028***<br>(0.005)  |
| $R^2$                             | 0.178                | 0.124                | 0.139                | 0.152                | 0.153                |
| Observations                      | 7,991                | 7,991                | 7,991                | 7,991                | 7,991                |

*Notes: Robust standard errors in parentheses, clustered on countries. Outcome variable is job satisfaction measured on a scale of 1 to 7, which is then z-scored to have a center of 0 and an SD of 1. All models include country fixed effects, and controls for gender, age group dummies, number of children in household, marital status, education level, household income, occupation. Sample is all employed respondents between the ages of 21 and 65. Source: Global Happiness and Political Attitudes Survey, 2019.*

*\*p < 0.10, \*\*p < 0.05, \*\*\*p < 0.01.*

Figure S9: Impact of Work Stress on Job Satisfaction According to Levels of Work Values



Notes: Coefficients and 95% confidence intervals are reported from a series of regressions of z-scored job satisfaction on the experience of stress over the past week (0-10 scale). In each case, stress is interacted with a measure of work values. Coefficients are reported at the mean of each work values variable, and one SD above and below the mean. All models controls for gender, age group dummies, number of children in household, marital status, education level, household income, occupation. Sample is all employed respondents between the ages of 21 and 65.  $N = 8,502$ . Source: Global Happiness and Political Attitudes Survey, 2019. For full reporting of the models, see of Table S29.

## S7 Exploratory Analyses on Physical Health

Table S30: Stress, Protestantism, and Health: Gallup Daily Poll

|                               | Days of Bad Health   |                     | Health Prevents Activities |                     | Pain Yesterday       |                      |
|-------------------------------|----------------------|---------------------|----------------------------|---------------------|----------------------|----------------------|
|                               | (1)                  | (2)                 | (3)                        | (4)                 | (5)                  | (6)                  |
| <b>Stress</b>                 |                      |                     |                            |                     |                      |                      |
| Stressed Yesterday (=1)       | 0.209***<br>(0.002)  | 0.204***<br>(0.004) | 0.248***<br>(0.002)        | 0.246***<br>(0.003) | 0.376***<br>(0.002)  | 0.379***<br>(0.003)  |
| <b>PWE</b>                    |                      |                     |                            |                     |                      |                      |
| Is Protestant (=1)            | -0.010***<br>(0.002) |                     | 0.005<br>(0.003)           |                     | 0.004<br>(0.002)     |                      |
| Proportion Protestant         |                      | -0.022*<br>(0.008)  |                            | 0.000<br>(0.009)    |                      | -0.005<br>(0.009)    |
| <b>Interactions</b>           |                      |                     |                            |                     |                      |                      |
| Stress * Is Protestant        | -0.049***<br>(0.004) |                     | -0.034***<br>(0.004)       |                     | -0.055***<br>(0.004) |                      |
| Stress * County Protestantism |                      | -0.037*<br>(0.016)  |                            | -0.029<br>(0.015)   |                      | -0.077***<br>(0.015) |
| $R^2$                         | 0.024                | 0.024               | 0.035                      | 0.036               | 0.054                | 0.055                |
| Observations                  | 1,145,928            | 1,168,302           | 1,149,868                  | 1,212,034           | 1,150,623            | 1,212,775            |

*Notes: Standard errors in parentheses, adjusted for clustering on date of survey. Outcome variable in all models is z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup Daily Poll, 2008-2017.*

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table S31: Stress, Work Hours, and Health: Gallup Daily Poll

|                                    | Days of Bad Health   |                      | Health Prevents Activities |                      | Pain Yesterday       |                      |
|------------------------------------|----------------------|----------------------|----------------------------|----------------------|----------------------|----------------------|
|                                    | (1)                  | (2)                  | (3)                        | (4)                  | (5)                  | (6)                  |
| <b>Stress</b>                      |                      |                      |                            |                      |                      |                      |
| Stressed Yesterday (=1)            | 0.196***<br>(0.002)  | 0.200***<br>(0.002)  | 0.240***<br>(0.002)        | 0.244***<br>(0.002)  | 0.363***<br>(0.002)  | 0.368***<br>(0.002)  |
| <b>Work Values</b>                 |                      |                      |                            |                      |                      |                      |
| Mean Work Hours of Peers (z-score) | -0.009***<br>(0.002) | 0.014***<br>(0.002)  | -0.007***<br>(0.002)       | 0.017***<br>(0.002)  | -0.015***<br>(0.002) | 0.011***<br>(0.002)  |
| <b>Interaction</b>                 |                      |                      |                            |                      |                      |                      |
| Stressed * Peer Work Hours         |                      | -0.053***<br>(0.002) |                            | -0.052***<br>(0.002) |                      | -0.058***<br>(0.002) |
| $R^2$                              | 0.024                | 0.024                | 0.036                      | 0.036                | 0.055                | 0.056                |
| Observations                       | 1,174,676            | 1,174,676            | 1,218,429                  | 1,218,429            | 1,219,179            | 1,219,179            |

*Notes: Standard errors in parentheses, adjusted for clustering on date of survey. Outcome variable in all models is z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, marital status, education level, household income, occupation, day of the week, and month\*year. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup Daily Poll, 2008-2017.*

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table S32: Work Values and Physical Health: GHPAS Evidence

|                                   | Self-Rated Physical Health |                      |                      |                      |                      |
|-----------------------------------|----------------------------|----------------------|----------------------|----------------------|----------------------|
|                                   | (1)                        | (2)                  | (3)                  | (4)                  | (5)                  |
| <b>Stress</b>                     |                            |                      |                      |                      |                      |
| Work Stress (0-10)                | -0.033***<br>(0.008)       | -0.034***<br>(0.009) | -0.034***<br>(0.009) | -0.031***<br>(0.009) | -0.033***<br>(0.009) |
| <b>Work Values</b>                |                            |                      |                      |                      |                      |
| Work Values Index (z-score)       | 0.019<br>(0.046)           |                      |                      |                      |                      |
| People Around Me Value Work Most  |                            | 0.006<br>(0.033)     |                      |                      |                      |
| Work Should Come First in Life    |                            |                      | -0.030<br>(0.040)    |                      |                      |
| Would Work Even If Didn't Need To |                            |                      |                      | 0.041<br>(0.036)     |                      |
| Work Makes Life Worth Living      |                            |                      |                      |                      | 0.008<br>(0.043)     |
| <b>Interactions</b>               |                            |                      |                      |                      |                      |
| Stress * Index                    | 0.020**<br>(0.008)         |                      |                      |                      |                      |
| Stress * People Value Work        |                            | 0.012*<br>(0.007)    |                      |                      |                      |
| Stress * Work Comes First         |                            |                      | 0.021**<br>(0.008)   |                      |                      |
| Stress * Would Always Work        |                            |                      |                      | 0.009<br>(0.006)     |                      |
| Stress * Work Makes Life          |                            |                      |                      |                      | 0.017**<br>(0.008)   |
| $R^2$                             | 0.182                      | 0.171                | 0.174                | 0.173                | 0.176                |
| Observations                      | 7,953                      | 7,953                | 7,953                | 7,953                | 7,953                |

*Notes: Robust standard errors in parentheses, clustered on countries. Outcome variable is 5-point scale self-reported health, z-scored to have a center of 0 and an SD of 1. All models include country fixed effects, and controls for gender, age group dummies, number of children in household, marital status, education level, household income, occupation. Sample is all employed respondents between the ages of 21 and 65. Source: Global Happiness and Political Attitudes Survey, 2019.*

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .



Table S33: Work Values and Physical Health: Gallup World Poll Evidence

|                               | Has Health Problems |                     |                     |                     |
|-------------------------------|---------------------|---------------------|---------------------|---------------------|
|                               | (1)                 | (2)                 | (3)                 | (4)                 |
| <b>Stress</b>                 |                     |                     |                     |                     |
| Stressed Yesterday (=1)       | 0.176***<br>(0.010) | 0.176***<br>(0.011) | 0.175***<br>(0.010) | 0.170***<br>(0.014) |
| <b>Predestination Beliefs</b> |                     |                     |                     |                     |
| Is Protestant (=1)            | 0.026*<br>(0.014)   | 0.026*<br>(0.015)   |                     |                     |
| Proportion Protestant         |                     |                     | 0.089<br>(0.067)    | 0.076<br>(0.066)    |
| <b>Interaction</b>            |                     |                     |                     |                     |
| Stress * Is Protestant        |                     | -0.001<br>(0.014)   |                     |                     |
| Stress * Protestantism        |                     |                     |                     | 0.038<br>(0.055)    |
| $R^2$                         | 0.070               | 0.070               | 0.070               | 0.070               |
| Observations                  | 629,419             | 629,419             | 656,744             | 656,744             |
| Countries                     | 148                 | 148                 | 154                 | 154                 |

Notes: Robust standard errors in parentheses, clustered on countries. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include country and wave fixed effects, and controls for gender, age and its square, marital status, education level, household income, and children in the household. Sample is all employed respondents between the ages of 21 and 65. Source: Gallup World Poll.  
\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table S34: Stress and Health in ATUS: Person-Level Analysis

|                                    | General Health       |                      |                     |                     |
|------------------------------------|----------------------|----------------------|---------------------|---------------------|
|                                    | (1)                  | (2)                  | (3)                 | (4)                 |
| <b>Stress</b>                      |                      |                      |                     |                     |
| Stress Index (0-1)                 | -0.416***<br>(0.031) | -0.415***<br>(0.031) | 0.189***<br>(0.030) | 0.197***<br>(0.030) |
| <b>Work Values</b>                 |                      |                      |                     |                     |
| Mean Work Hours of Peers (z-score) | -0.005<br>(0.018)    | -0.006<br>(0.018)    | 0.017<br>(0.017)    | 0.010<br>(0.018)    |
| <b>Interactions</b>                |                      |                      |                     |                     |
| S-Index * Peer Work Hours          |                      | 0.002<br>(0.031)     |                     | 0.058*<br>(0.030)   |
| $R^2$                              | 0.228                | 0.228                | 0.246               | 0.246               |
| Observations                       | 12,670               | 12,670               | 12,670              | 12,670              |

Notes: Standard errors in parentheses. Analysis is at the person-day level. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, household size, marital status, education level, household income, and fixed effects for occupation and date. Sample is all employed respondents between the ages of 21 and 65. Source: American Time Use Survey, 2010-2013.  
\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table S35: Stress and Health in ATUS: Activity-Level Analysis

|   | Pain               |                    |
|---|--------------------|--------------------|
|   | (1)                | (2)                |
| <b>Activity Type</b>                    |                    |                    |
| Working (=1)                            | 0.057**<br>(0.025) | 0.057**<br>(0.025) |
| Leisure/Socializing (=1)                | -0.008<br>(0.019)  |                    |
| Active Leisure (=1)                     |                    | -0.001<br>(0.026)  |
| Passive Leisure (=1)                    |                    | -0.012<br>(0.022)  |
| <b>Interaction With Peer Work Hours</b> |                    |                    |
| Working * Peer Hours                    | -0.036*<br>(0.019) | -0.036*<br>(0.019) |
| Leisure * Peer Hours                    | -0.013<br>(0.017)  |                    |
| Active Leisure * Peer Hours             |                    | -0.030<br>(0.027)  |
| Passive Leisure * Peer Hours            |                    | -0.001<br>(0.020)  |
| $R^2$                                   | 0.159              | 0.159              |
| Observations                            | 53,997             | 53,997             |
| Individuals                             | 18,333             | 18,333             |

*Notes: Robust standard errors in parentheses, clustered on individuals. Analysis is at the person-activity level. Outcome variables in all models are z-scored to have a center of 0 and an SD of 1. All models include controls for gender, age and its square, number of children in household, household size, marital status, education level, household income, occupation, ordering of SWB question, day of the week, and year. Sample is all employed respondents between the ages of 21 and 65. Source: American Time Use Survey, 2010-2013. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .*