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The Lasting Legacy of Traumatic Events on Life Satisfaction*

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Abstract

In this paper, we employ large-scale survey data from the four 2006-2012 waves of the US Health and Retirement Study to show that traumatic events experienced throughout the life span leave a legacy on life satisfaction. Having had a life-threatening illness or accident, having a close relative hit by a life-threatening illness or accident and, especially, having been victim of a serious physical attack or assault are life events out of individuals' control that turn out to be negatively associated with both general and domain-specific life satisfaction, even after controlling for personality traits. As to extremely adverse events experienced during childhood or adolescence, life satisfaction is significantly lowered by being physically abused by a parent. Overall, we provide evidence that the effects of some traumas are persistent over time and that men and women do not significantly differ in their reactions to traumas. Surprisingly, the effects of child death on general life satisfaction are negligible also in the short term.

Keywords: General Life Satisfaction; Domain-specific Life Satisfaction; Traumatic Events.
JEL Classification: D60; D91; I31.

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"It has been said, 'Time heals all wounds'. I do not agree.
The wounds remain. In time, the mind, protecting its sanity, covers
them with scar tissue and the pain lessens. But it is never gone"
Rose Fitzgerald Kennedy

1. Introduction

Despite economists' long-lasting reluctance to accept the idea that the central construct of "utility" can be measured empirically (Clark and Oswald, 1994), in the last decades significant progress has been made within the extensive body of research that deems self-reported measures of subjective well-being or life satisfaction[1] as valid and reliable indicators of well-being (Van Praag et al., 2003; Di Tella and MacCulloch, 2006; Metcalfe et al., 2011).

As noted by Blanchflower and Oswald (2004), self-assessed well-being is related to distinct factors such as circumstances, aspirations, comparisons with others, and a person's baseline happiness or dispositional outlook. Last years' empirical research has shown that subjective well-being has genetic roots (Bartels, 2015) and is associated to sociodemographic variables (income, gender, age, education, employment status, race, marital status; see, e.g., Clark and Oswald, 1994; Blanchflower and Oswald, 2004, and Graham and Chattopadhyay, 2013), personality traits (Hentschel et al., 2017), relative earnings (Luttmer, 2005), parenthood (Stanca, 2012), natural disasters (Luechinger and Raschky, 2009) as well as a series of non-pecuniary factors including relational goods (Bruni and Stanca, 2008), freedom of choice (Verme, 2009), tax morale (Lubian and Zarri, 2011) and religiosity (Van Praag et al., 2010).

In this paper, we aim to contribute to this growing stream of literature by addressing the following questions: does an individual's personal life history cast a shadow on her current well-being? Do extremely adverse events experienced throughout the life span impact one's life satisfaction today? If so, do these naturally occurring shocks resemble more a

[1] In this work, we use interchangeably the expressions "subjective well-being", "happiness" and "life satisfaction". As pointed out by Luechinger and Raschky (2009), even though "life satisfaction" and "happiness" may be viewed as constructs capturing slightly different aspects of well-being, there is high correlation between them and the two measures provide similar results (see on this also Di Tella and MacCulloch, 2005).

temporary *wound* that time can heal, as reminded to us by an old proverb, or do they leave instead a long-lasting *scar*, as suggested by Rose Kennedy's opening quote? Do men and women react differently to similar traumas and/or to the timing of their occurrence?

Life satisfaction scores obtained from survey-based measures asking individuals how happy or satisfied they are with their life as a whole these days provide information on how respondents *globally* evaluate their *present* life. Therefore, it is plausible that individuals' current, global self-evaluations of their overall level of well-being, more or less subconsciously, also incorporate the psychological burden of negative life events occurred in the past – including the distant past. Next, we wonder whether traumatic events affect life satisfaction also once we examine distinct areas of life (i.e., domains), rather than their general counterpart.

We depart from previous works connecting traumatic life events with life satisfaction (in particular, Oswald et al., 2015; Misheva, 2016; Moor and De Graaf, 2016; Hentschel et al., 2017) in the following main directions: i) we consider a series of traumatic life events out of individuals' control, occurred either in the recent or in the distant past; ii) we focus on both general and domain-specific life satisfaction; iii) we provide a systematic analysis using multiple waves of survey data on a representative sample of people over 50, controlling for relevant personality characteristics.

Drawing on prior research in medicine, psychology and economics indicating that past exposure to traumatic events can influence one's dispositions and well-being in later life, our central conjecture in this study is that individuals' current levels of life satisfaction are negatively related to extremely adverse events out of their control they passed through in their life, as these events may be serious enough to leave a scar, i.e., a lasting legacy on respondents' "experienced utility" (Kahneman et al., 1997) even if they occurred during their formative years, i.e., some decades before.

For our analysis, we use data from the four 2006-2012 waves of the US Health and Retirement Study (henceforth HRS). This longitudinal survey, collecting information on a large sample representative of the US population aged 50 or more, is an ideal dataset for our research goal as it conveys information on both current levels of subjective well-being and personal traumatic events occurred in the past, including information on timing of the events

as well as on specific traumas occurred more than three decades before during childhood or adolescence, i.e., when the respondent was less than 18 years old.

Our major results can be summarized as follows. We detect a reduction in life satisfaction after the occurrence of a life-threatening illness or accident that hit the respondent, after a life-threatening illness or accident that hit a close relative (partner or child) and, in particular, after a serious physical attack or assault that hit the respondent. Surprisingly, passing through the death of a child is not significantly associated with life satisfaction, not even in the short term. As to extremely adverse events experienced during childhood or adolescence, life satisfaction is significantly lower when the respondent was physically abused by either of his parents. Next, no relevant gender differences arise with regard to the relationship between traumas and life satisfaction. Our assessment of life satisfaction through domain-specific measures (considering satisfaction with home, leisure, family life, city, finances, income and health) indicates that the four traumas that turn out to be more significantly associated with general life satisfaction also matter for several, but not all, domains.

Providing empirical evidence on the connections between lifetime traumas and life satisfaction also allows us to contribute to shed light on the validity of the so called "adaptation hypothesis" (i.e., the idea that, after a shock, subjective well-being more or less quickly reverts to its previous level, so that hedonic adaptation takes place; see on this Frederick and Loewenstein, 1999; Kahneman and Krueger, 2006) in the face of extremely adverse life events. In this regard, we show that the effects of the ones we identify as the two most relevant traumatic events (being victim of physical attack and being physically abused) are also persistent over time, suggesting that individuals' coping strategies are not effective in helping them to recover in their life satisfaction levels.

The remainder of the paper proceeds as follows. Section 2 provides a selective review of the relevant strands of literature, with a special focus on studies exploring the relationship between current subjective well-being and prior adverse life experiences. Section 3 describes our data and methodology. Section 4 contains our key findings and Section 5 concludes. A final appendix lists the raw variables used to identify life satisfaction and traumatic events.

2. Related Literature

This paper lies at the crossroads of two areas of research. One is the fast-growing "economics of happiness" literature and, in particular, the line of inquiry that examines the links between happiness and negative life events. The other is the huge cross-disciplinary research area – that has been developing mainly in psychology, psychiatry and medicine, but more recently also in economics – dealing with the effects of past exposure to trauma on current decision-making and well-being. Our study seeks to contribute to these streams of literature by providing empirical evidence on the relationship between adults' life satisfaction and a series of traumatic life events they experienced over time throughout their personal history.

Over the last decades, studies on the determinants of subjective well-being have become a growingly important and active research area that crosses several scientific disciplines, including economics, psychology and medicine (Bartels, 2015). Prior economics work has shown that negative life events such as unemployment, retirement, divorce, widowhood, disability and natural disasters affect one's current level of well-being.

Using UK data on mental distress, Clark and Oswald (1994) find that the effect of being jobless is significantly and negatively related to well-being (see on this also Blanchflower and Oswald, 2004). The detected effect is quantitatively large and robust across varied specifications. They also offer evidence that individuals who have been unemployed for a long time have lower levels of distress than those who have recently become jobless. By means of comprehensive panel data on Germany, Bonsang and Klein (2012) show that, in line with Clark and Oswald's (1994) established result, involuntary retirement is negatively associated with life satisfaction, whereas voluntary retirement has a small positive effect on life satisfaction. Blanchflower and Oswald (2004) present evidence from the US that marital status is very important for happiness, as both being separated and being widowed are significantly and negatively associated with reported happiness. Oswald and Powdthavee (2008) provide evidence based on British and German micro data that people exhibit partial hedonic adaptation to disability.

Recent studies have examined the links between natural disasters and subjective well-being. Luechinger and Raschky (2009) investigate the effects on life satisfaction of major floods for 16 European countries in the period from 1973 to 1998 and detect a significant and

robust negative impact of floods on life satisfaction. Calvo et al. (2015) focus on pre- to post-disaster changes in happiness of 491 women affected by Hurricane Katrina, one of the most devastating and deadliest natural disasters in US history. They find that, for most respondents, happiness was lower one year after the event but was not significantly different from pre-disaster four years later.

Next, some work reveals that also negative life events that – unlike the ones considered in the aforementioned studies – were not associated with direct adverse financial or health conditions of the individuals who experienced them affect their subjective well-being. Based on UK panel data, Metcalfe et al. (2011) present quasi-experimental evidence of an international spillover of terrorism, showing that the September 11 attacks lowered levels of subjective well-being – assessed through a measure of mental distress – in a different country. Their findings suggest that major negative life events might produce detrimental effects on individuals' well-being through the psychological channel (i.e., via increased fear and anxiety towards life) and, due to media coverage, today this may well occur also when individuals do not live in the country directly hit by the event. Metcalfe et al. (2011) also document that the negative effects lasted until the end of November in 2001 and then dissipated.

Since in this paper we focus on traumatic life events out of individuals' control that arguably are associated with current life satisfaction through the psychological channel, the work that is closest to ours includes Moor and de Graaf (2016), Oswald et al. (2015), Misheva (2016) and Hentschel et al. (2017). Using cross-sectional European Values Study data, Moor and de Graaf (2016) detect a strong negative effect of bereavement of close relatives (father, mother or child) on happiness. This relationship also exists in the case that the death of a close relative occurred more than 10 years before. Also Oswald et al. (2015), in their experimental study with UK university students on happiness and productivity, examine the link between major real-world shocks and happiness. One of their experiments indicates that students who have recently suffered family tragedies (such as bereavement or life-threatening illness, aggregated by using a single "bad life event" variable) are less happy than those who did not pass through similar happiness-shock experiences in their recent past. This study also offers evidence of slow hedonic adaptation, as the effect of bad life events on well-

being declines through time.[2] Misheva (2016) employs one wave of twin data from Australia and shows that traumatic events such as being assaulted, being raped and being involved in an accident are negatively associated with emotional well-being. She also finds that these effects dissipate over time. Hentschel et al. (2017) analyze the impact of major life events, compared to personality traits, on the stability of affective well-being with Australian data and find that financial worsening and serious personal injury/illness turn out to have the highest effects. Compared to these studies, the key distinguishing features of our work can be summarized as follows: i) we consider a series of traumatic life events out of individuals' control, occurred either in the recent or in the distant past; ii) we focus on both general and domain-specific life satisfaction; iii) we provide a systematic analysis using multiple waves of survey data on a representative sample of people over 50, controlling for relevant personality characteristics.

Our work also speaks to the voluminous interdisciplinary body of research investigating the hedonic and behavioral effects of exposure to trauma over time. In medicine and psychiatry, several studies have shed light on the well-known "post-traumatic stress disorder" (Yehuda, 2002). As pointed out by Bernile et al. (2017), recent medical research indicates that traumatic experiences physiologically alter brain development and function and, in turn, influence subsequent behavior with regard to both economic and non-economic decision-making. Carmil and Breznitz (1991) document that exposure to traumatic life experiences produces enduring effects on political attitudes, religious identity and future orientation. Holman and Silver (1998) find that passing through traumatic experiences is associated with long-term psychological distress (see on this also Bunce et al., 1995, and Bonanno, 2004). Frazier et al. (2001) examine the links between positive and negative life changes and post-traumatic distress on a sample of recent female sexual assault survivors. They show that positive changes were reported soon after the assaults and increased over time, whereas there was a decrease in negative changes. Next, the relations with distress were stronger for negative changes.

[2] However, it is important to note that Oswald et al.'s (2015) questionnaire allowed for recent bad life events only, as respondents had to declare whether they experienced one of the listed family tragedies within a 0-5 years range.

As noted in Bucciol and Zarri (2015), in economics the empirical literature examining the impact of negative past experiences on individuals' preferences, beliefs and other economically relevant variables is relatively new. Some recent studies analyze the influence on individuals' risk-taking behavior of economic crises (Malmendier and Nagel, 2011; for CEOs, see Malmendier et al., 2011), natural disasters (Cameron and Shah, 2015) as well as early-life exposure to war (Kim and Lee, 2014) and traumatic personal events (Bucciol and Zarri, 2015). Malmendier et al. (2011) show that CEOs with military experience (especially those who served in World War II) opt for more aggressive policies in terms of capital structures and higher market leverage ratios. Relatedly, Bernile et al. (2017) find that CEOs who passed through fatal disasters without extremely negative consequences earlier in life lead firms that behave more aggressively, with regard to leverage, cash holdings and acquisition activity. As to consequences for politics, Fontana et al.'s (2017) findings indicate that traumatic historic events such as the Italian civil war and Nazi occupation of Italy during World War II produce long-run effects on voters' decisions that likely pass through political attitudes, with a longer exposure to traumatic events being associated to increased political polarization. Giuliano and Spilimbergo (2014) offer evidence that experiencing a recession during the critical years of early adulthood shapes individual beliefs over the role of luck vs. effort in determining success in life, their preferences for redistribution later in life as well as their voting behavior.

3. Data

We implement our analysis using data from the *Health and Retirement Study* (henceforth HRS), a large-scale longitudinal survey on a representative sample of the US population aged 50 or more. The survey is run every two years, since 1992, by the Institute for Social Research of the University of Michigan.[3] Although primarily interested in studying the health conditions of the elderly population, over time the HRS questionnaire expanded to incorporate further topics. Nowadays the HRS provides detailed information on, e.g.,

[3] The raw data, along with the survey questionnaire and supporting documentation, is freely available at www.umich.edu/~hrswww/.

employment, assets, and housing. A special psycho-social module, introduced in 2004, refers to such issues as the relationship with others, individual personality, and the occurrence of lifetime traumas in the past. This module is the source of our key variables, most of which were available only since year 2006.

Due to these constraints, our analysis is based on four HRS waves, from 2006 to 2012. The final dataset is made of 13,014 observations on 6,507 individuals for which we have full information on all the variables under investigation. For each individual we have precisely two observations, one four years after the other, because the psycho-social module interviews in every wave only a rotating half of the sample. For this reason, in our sample some individuals are observed in 2006 and 2010 and others are observed in 2008 and 2012. Unfortunately, this prevents us from properly exploiting the panel dimension of the dataset. We then develop a cross-sectional analysis, controlling for possible correlation between observations referring to the same individual.

For each individual we have two observations on the variables listed in Table 1, that we can group in four broad categories: a) life satisfaction, b) lifetime traumas, c) personality, d) socio-demographics. The exact wording of the variables belonging to groups a)-c) is available in Appendix A.

Our key variables are those on life satisfaction, that we assess through an aggregate indicator of *general* life satisfaction (in our benchmark analysis) as well as through *domain-specific* measures (on seven different domains such as satisfaction with home, leisure, family life, city, finances, income and health).[4] General life satisfaction is on average worth 0.645 on a scale from 0 to 1, although the distribution of answers covers the whole range of possible values (with higher frequency on those values that indicate higher life satisfaction; see Figure 1). Respondents are also more likely to be satisfied with the place and the city where they live, and with their leisure activities, than with their income or their financial situation. This evidence may partly reflect the fact that our sample period incorporates the recent economic and financial crisis.

[4] Van Praag et al. (2003) point out that "Satisfaction with life as a whole can be seen as an aggregate concept, which can be unfolded into its domain components" (p. 30).

FIGURE 1 ABOUT HERE

The lifetime trauma group includes four events that may have occurred at any point in life (the death of a child, a serious physical attack or assault, and a life-threatening illness or accident involving the respondent or her partner/child) and one event that occurred in the distant past, i.e., before age 18 (physical abuse by either parent). In principle, this list of traumas could be expanded and include five more events that HRS collects (natural disasters, fired in a combat, partner/child addicted to drugs or alcohol, years of school repeated, parents addicted to drugs or alcohol). However, even though we consider these events in a robustness check, we decided to exclude them from the main analysis due to endogeneity concerns, as we fear that the occurrence of these traumas might not have been out of our respondents' control.[5] From Table 1 we learn that the events, although infrequent, are not rare: they arise in between 5.9% (for physical attack) and 28.6% (for life-threatening illness) of the sample. These figures are in line with Bucciol and Zarri (2015) who use the same dataset and the same variables to study the correlation between traumas and stock holding. It is worth noting that the frequency of these events is probably higher than in the population, because individuals in our sample are generally older and, therefore, have had more time to experience events. Importantly, for the four traumas that may arise at any point in time, we know the year in which they happened. We will then exploit this information on the timing of traumatic events to judge whether traumas arisen many years before still have an impact on life satisfaction. For this purpose we distinguish between traumas experienced within 10 years, between 11 and 30 years, and over 30 years before to have a roughly balanced distribution of the answers.

The personality group includes a set of nine indexes that can be derived from the HRS questionnaire, and are meant to assess the following aspects of personality: openness to experience, conscientiousness, extraversion, agreeableness, neuroticism (these five items denote the well-known "Big Five" taxonomy of personality; see on this Costa and McCrae,

[5] For instance, an individual could have a lifestyle that, more or less subconsciously, makes it more likely for her to be exposed to a natural disaster, or she could undertake a behavior that induces a partner or child to get addicted. This gives rise to self-selection, that might bias our estimates.

1992), cynical hostility, anxiety, anger-in and anger-out.[6] We decided to control for personality traits as a growing body of research has been showing that subjective well-being is associated with personality characteristics (see, e.g., Hayes and Joseph, 2003; Weiss et al., 2008, and Hentschel et al., 2017).

Finally, the socio-demographic group of variables includes standard information on age, gender, race, nationality, marital status, occupational status, education, and health status of the head, plus income and wealth of the household. Notice that age is limited in the 50-80 range. In fact, as a further restriction we focus on individuals not older than 80. The reason is that the older elderly are over-sampled in HRS. In addition, as Bucciol and Zarri (2015) noted, such individuals may find it difficult to recall past personal events, especially when such events occurred in their early life.

TABLE 1 ABOUT HERE

3.1. Research Questions

With this work we aim to test a set of hypotheses, specifically:

Hyp.1. There is negative correlation between general life satisfaction and the occurrence of a lifetime trauma.

Hyp.2. The correlation falls as the trauma is farther in time (hedonic adaptation).

Hyp.3. There are gender differences, with females being more affected than males by traumatic events involving a close relative (child or partner), rather than themselves, and better able to recover from lifetime traumas.

Hyp.4. The correlation between life satisfaction and lifetime traumas is domain-specific.

We view these as plausible hypotheses based on the major studied recalled in the previous sections. As to gender differences, we expect females to be more affected than males in their life satisfaction when traumatic events regard a close relative (child or partner), rather than themselves, since, as recalled by Eckel and Grossman (1998), prior work in

[6] The difference between anger-in and anger-out is that anger-in refers to the predisposition to express angry feelings towards others, whereas anger-out is based on suppressing those feelings and holding them.

psychology, sociology and political science clearly indicates that in noneconomic settings women are more socially-orientated and less selfish than men. Eckel and Grossman's (1998) study extends this finding to economic settings. Next, women have also been shown to better recover from adverse life experiences. Regarding Hypothesis 1, Table 2 reports a first analysis comparing average life satisfaction conditional on the occurrence of a trauma. A t-test on the comparison of the means always rejects at common significance levels the null hypothesis that the mean is identical in the two groups, suggesting that life satisfaction is lower in the presence of a trauma. This is true especially for two traumas, physical attack and physically abused, where the reduction of life satisfaction is in the order of 0.09-0.1 in the 0-1 scale. The evidence, however, could be driven by the difference in the characteristics of the sample in the two groups. Our analysis in Section 4 aims to dig deeper into this issue and test the other hypotheses, properly controlling for the observable characteristics of the respondent.

TABLE 2 ABOUT HERE

4. Analysis

This section is organized in four sub-sections, where each one tests one of the hypotheses listed in Sub-section 3.1. Sub-section 4.1 discusses the negative correlation between life satisfaction and lifetime traumas (Hypothesis 1); Sub-section 4.2 checks whether the correlation is persistent over time (Hypothesis 2); Sub-section 4.3 tests whether there are gender differences (Hypothesis 3); finally, Sub-section 4.4 studies whether domain-specific life satisfaction is correlated with some lifetime traumas.

The regression output is reported in Tables 3-5. Appendix Table A1 shows a robustness check on Table 3, using an extended set of lifetime traumas, including five more events that may suffer from endogeneity. Our key results are preserved. All the analyses are performed by means of OLS regressions, apart from Table 5 where, since we use dummy dependent variables, we employ probit regressions and report average marginal effects. All models use individual-clustered standard errors to account for potential correlation between

observations on the same individual. In what follows, we generally adopt the convention to comment only on coefficients that are significant at least at the 5% level.

4.1. Life Satisfaction and Lifetime Traumas

Table 3 reports our benchmark estimates, where the dependent variable is the index of general life satisfaction, measured in the 0-1 range. Column (1) runs a first OLS regression over the socio-demographic variables. We see that life satisfaction is higher with the elderly, females, non-whites, immigrates, married individuals, college graduates and individuals in good health, as well as individuals living in richer households. This evidence is in line with previous literature (see, e.g., Clark and Oswald, 1994; Blanchflower and Oswald, 2004, and Graham and Chattopadhyay, 2013). We also notice a gradual reduction over the years of life satisfaction, as suggested by the negative wave dummies (the excluded category refers to year 2006). This result could have to do with the economic and financial crisis, and all its consequences on individuals' self-perceived satisfaction with life.

Column (2) adds to the model the variables on personality. We learn that life satisfaction is higher with conscientiousness and extraversion, and lower with openness to experience, neuroticism, cynical hostility, anxiety and anger (in and out). Our findings are broadly consistent with available empirical evidence on the links between personality traits and subjective well-being (see, e.g., Hayes and Joseph, 2003; Weiss et al., 2008, and Hentschel et al., 2017).

Column (3) adds to the specification the trauma variables. We see that four out of the five traumas exhibit significantly negative correlation with life satisfaction. The four traumas can be combined in two categories: physical assault (attack or abuse when younger than 18), and life-threatening illness (of the respondent or the partner/child). In terms of size, the first category seems much more relevant: in the presence of a physical assault, life satisfaction is about 0.03 points lower in the 0-1 scale, whereas in the presence of illness it is about 0.01 points lower. This evidence provides support to Hypothesis 1.

4.2. Timing of the Traumas

One of the five traumas regards a period of life where the respondent was in her formative years, i.e., before age 18; the remaining four traumas can happen in any moment of life. We exploit this information and, in Column (4) of Table 3, we replace each trauma dummy with a set of three dummy variables, meant to capture the occurrence of the trauma in a given time window: within 10 years, between 11 and 30 years, over 30 years ago. The distinction is made in such a way to have a roughly similar number of events in the three time windows, and could loosely correspond to a distinction between short, medium and long term.

Here we confirm a significant correlation for the same traumas as in Column (3). It is interesting to note that, while for illness the correlation holds only within 10 years, for physical attack it holds for up to 30 years. Looking at the coefficients for this trauma, it seems that the correlation is weaker as time goes by. However, an F-test accepts the null hypothesis of equality of the three coefficients for physical attack (statistic: 2.07; p-value: 0.13). We cannot run the same exercise for the "physically abused" dummy. Nevertheless, since this trauma arose before age 18, we can say that it is also persistent because it is still relevant for the respondent.

Regarding Hypothesis 2, we can then conclude that it is only partly supported by our data: the correlation between life satisfaction and a trauma decays over time for an illness (in line with the adaptation hypothesis), while it remains persistent for a physical attack and for being physically abused (an event that occurred more than three decades before).

TABLE 3 ABOUT HERE

4.3. Gender Effects

In this sub-section we test our hypothesis that females are more affected than males by traumatic events involving a close relative (child or partner), rather than themselves, and better able to recover from lifetime traumas using the output in Table 4, which replicates the regression specification of Columns (3) and (4) in Table 3, separately for males and females.

At first sight, there is not much difference in the output of the regression for the two groups: the significant coefficients and their size are very close for males and females. We

only notice that females seem to pay (slightly) more attention to a life-threatening illness of a partner/child, whereas males pay more attention to an illness hitting them – denoting a more selfish attitude than females.[7]

However, these differences are small and, taken together, a Chow test does not find evidence of structural difference in the two estimates of Columns (1)-(2) (F-test: 1.12; p-value: 0.30) and Columns (3)-(4) (F-test: 0.99; p-value: 0.49). Further, we surprisingly detect no gender differences with regard to a traumatic event such as passing through the death of a child. Therefore, on the whole data go against our Hypothesis 3, as they suggest that there are no relevant gender differences in the connection between life satisfaction and lifetime traumas.

TABLE 4 ABOUT HERE

4.4. Specific Domains of Life Satisfaction

So far we considered only the standard notion of general life satisfaction. However, prior work has shown that more specific measures of life satisfaction, referring to particular aspects of life, also depend on objectively measurable variables and are significantly associated with general life satisfaction (see e.g., Van Praag et al., 2003). Therefore, we sought to see whether, once we take into account specific measures of life satisfaction related to different domains of life, they turn out to exhibit correlation with some traumatic events, or no correlation at all. To this aim, Table 5 replicates the analysis of Column (3) in Table 3 using seven domain-specific measures of life satisfaction. The new measures refer to satisfaction for the house, for leisure activities, for family life, for the city, for the financial situation, for income and for personal health. Only the measure regarding the financial situation is available for the entire sample period; all the other variables were absent in 2006.[8]

[7] This interpretation is in line with the frequency of the lifetime traumas in the two groups. In fact, males report higher frequency on personal illness only (31% against 22% of females), whereas females show significantly higher frequencies in all the other traumas.

[8] The regression output for satisfaction with personal finances is similar if we concentrate on the waves 2008-2012, as for the other dependent variables in Table 5. Results are available upon request.

The dependent variables are all dummies; for this reason we treat probit models and Table 5 reports average marginal effects.

From a broad picture, the traumas displaying correlation with each measure of life satisfaction are physical attack and illness to a partner/child; each of the five traumas, however, has at least two significant correlations. We highlight two results. First, the two measures of life satisfaction involving monetary domains (financial situation and income) and the measure on leisure activities are the only ones to be uncorrelated with traumas arisen before age 18.[9] Second, the death of a child – that, so far, turned out to be surprisingly irrelevant in our analysis, even for females – is negatively correlated with life satisfaction on leisure and positively correlated with life satisfaction on personal finances. The latter is the only evidence in all our analysis of a *positive* correlation between a trauma and life satisfaction. Since the death of a child is a severe psychological shock but reduces current and future family expenses, we view this result as consistent with a previous finding from the happiness literature, i.e., the negative correlation between number of children and specific financial satisfaction as well as with general life satisfaction (see e.g., Van Praag et al., 2003; Stanca, 2012).

We then find support to Hypothesis 4, according to which the correlation between life satisfaction and lifetime traumas changes with the domain considered.

TABLE 5 ABOUT HERE

[9] Further evidence, coming from replicating Column (4) of Table 3 with the seven domain-specific measures of life satisfaction, suggests that being victim of a physical attack or assault is not relevant for one's financial situation if the trauma occurred more than 10 years before. The regression output is available upon request. Therefore, people seem to adapt to even extremely adverse life events insofar as we pay attention to specific domains of life such as the financial one, though this is not the case with regard to satisfaction with one's life as a whole.

5. Conclusions

Our analysis sheds light on the determinants of life satisfaction by examining the relationship between a set of extremely adverse life events out of individuals' control and their current level of subjective well-being. General life satisfaction is lower after the occurrence of four traumatic events such as life-threatening illness or accident that hit the respondent or a close relative (partner or child) and, in particular, after a serious physical attack or assault that hit the respondent and when the respondent was physically abused by either of his parents in his childhood or adolescence.

We also assess life satisfaction through several domain-specific measures and document that the four traumas that turn out to be more strongly associated with general life satisfaction also matter for several aspects of life. The two traumas displaying more correlations with domain-specific life satisfaction are physical attack and illness to a partner/child. We also discover that passing through the death of a child – that we show to be surprisingly irrelevant for general life satisfaction – is negatively correlated with life satisfaction on leisure and positively correlated with life satisfaction on personal finances, in line with a well-known finding from the happiness literature, i.e., the negative correlation between number of children and specific financial satisfaction as well as with general life satisfaction (see e.g., Van Praag et al., 2003; Stanca, 2012).

As far as the timing of the events is concerned, our overall analysis interestingly reveals that two traumatic events such as physical attack and physical abuse before 18 years old persistently contribute to explain general life satisfaction, even after many years. The correlation between life satisfaction and a trauma decays for both illness of the respondent and illness of a close relative. Therefore, on the whole our findings provide only partial support to the hedonic adaptation hypothesis and corroborate the idea that, for some traumas, individuals do not fully recover from adverse events: these events *can leave a scar that time cannot heal* on general life satisfaction.

We claim that our work might be extended in several directions. First, it would be interesting to see whether traumatic events such as the ones that we analyzed in this study also matter for economically relevant variables such as time preferences and social preferences, as it is plausible to conjecture that both one's orientation towards the future and

her social concerns are affected by some traumatic events passed through in her life. Next, future research might seek to understand whether not only very negative personal events but also a set of extremely *positive* experiences (including events occurred in the distant past) do play a role in shaping one's current level of general as well as domain-specific life satisfaction, controlling for personality traits. These extensions of our analysis are left as interesting avenues for empirical research on the determinants of subjective well-being.

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Appendix. Key Variables in HRS

We report below the wording of the HRS questions considered to create our variables. Within squared parentheses we indicate the label of the variable in HRS, wave 2012.

Scores are constructed as in Smith et al. (2013), and then rescaled in the 0-1 range. A score is considered missing when more than half of the items are missing.

A.1. Variables on Life Satisfaction

General life satisfaction[10]

"Please say how much you agree or disagree with the following statements.

[lb003a] In most ways my life is close to ideal.

[lb003b] The conditions of my life are excellent.

[lb003c] I am satisfied with my life.

[lb003d] So far, I have gotten the important things I want in life.

[lb003e] If I could live my life again, I would change almost nothing."

Possible answers are: "Strongly disagree"; "Somewhat disagree"; "Slightly disagree"; "Neither agree nor disagree"; "Slightly agree"; "Somewhat agree"; "Strongly agree". In wave 2006 the option "Neither agree nor disagree" was not available. We assign the value 1 to "Strongly disagree", the value 2 to "Somewhat disagree", the value 3 to "Slightly disagree", "Neither agree nor disagree", and "Slightly agree", the value 4 to "Somewhat agree" and the value 5 to "Strongly agree".

The score is the average of the items.

[10] *Source*: Diener, E., Emmons, R.A., Larsen, R.J., Griffin, S., 1985. The satisfaction with life scale. *Journal of Personality Assessment, 49(1)*, 71-75.

Pavot, W., Diener, E., 1993. Review of the satisfaction with life scale. *Psychological Assessment, 5(2)*, 164-172.

Specific domains of life[11]

"Please think about your life and situation RIGHT NOW.

HOW SATISFIED ARE YOU WITH...

[lb039a] The condition of the place where you live (house or apartment)?

[lb039b] Your daily life and leisure activities?

[lb039c] Your family life?

[lb039d] The city or town you live in?

[lb039e] Your present financial situation?

[lb039f] The total income of your household?

[lb039g] Your health?"

Possible answers are: "Completely satisfied"; "Very satisfied"; "Somewhat satisfied"; "Not very satisfied"; "Not at all satisfied". In wave 2006 only item lb039e was available.

For each item we create a dummy variable equal to 1 if the answer is either "Completely satisfied" or "Very satisfied".

A.2. Variables on Lifetime Traumas[12]

At any point in life

"For each of the following events, please indicate whether the event occurred AT ANY POINT IN YOUR LIFE. If the event did happen, please indicate the year in which it happened MOST RECENTLY.

[lb037a] Has a child of yours ever died?

[lb037b] Have you ever been in a major fire, flood, earthquake, or other natural disaster?

[lb037c] Have you ever fired a weapon in combat or been fired upon in combat?

[lb037d] Has your spouse, partner, or child ever been addicted to drugs or alcohol?

[lb037e] Were you the victim of a serious physical attack or assault?

[lb037f] Did you ever have a life-threatening illness or accident?

11 *Source:* Campbell, A., Converse, P.E., Rodgers, W., 1976. *The quality of American life: Perceptions, evaluations, and satisfactions*. New York: Russell Sage Foundation.

12 *Source*: Krause, N., Shaw, B.A., Cairney, J., 2004. A descriptive epidemiology of lifetime trauma and the physical health status of older adults. *Psychology and Aging, 19(4)*, 637-648.

[lb037g] Did your spouse or a child of yours ever have a life-threatening illness or accident?"

Possible answers are: "Yes"; "No". For each question, if the answer is ''Yes'', one further question asks "If Yes, what year?"

For each item we create a dummy variable equal to 1 if the answer is "Yes".

Before the age of 18

"For this next set of events, please think about your childhood growing up, BEFORE YOU WERE 18 YEARS OLD.

[lb037k] Before you were 18 years old, did you have to do a year of school over again?

[lb037m] Before you were 18 years old, did either of your parents drink or use drugs so often that it caused problems in the family?

[lb037n] Before you were 18 years old, were you ever physically abused by either of your parents?"

Possible answers are: "Yes"; "No".

For each item we create a dummy variable equal to 1 if the answer is "Yes".

A.3. Variables on Personality

"Big Five" personality traits[13]

"Please indicate how well each of the following describes you.

[lb033a] Outgoing

[lb033b] Helpful

[lb033d] Moody

[lb033e] Organized

[lb033f] Friendly

[lb033g] Warm

[13] *Source*: Lachman, M.E., Weaver, S.L., 1997. Midlife Development Inventory (MIDI) personality scales: Scale construction and scoring. Unpublished Technical Report. Brandeis University. (http://www.brandeis.edu/projects/lifespan/scales.html)

[lb033h] Worrying

[lb033i] Responsible

[lb033j] Lively

[lb033k] Caring

[lb033l] Nervous

[lb033m] Creative

[lb033n] Hardworking

[lb033o] Imaginative

[lb033p] Softhearted

[lb033q] Calm

[lb033s] Intelligent

[lb033t] Curious

[lb033u] Active

[lb033v] Careless

[lb033w] Broad-minded

[lb033y] Sympathetic

[lb033z2] Talkative

[lb033z3] Sophisticated

[lb033z4] Adventurous

[lb033z5] Thorough"

Possible answers are: "Not at all", "A little", "Some" and "A lot", to which we assign the value 1, 2, 3 and 4 respectively. We assign the reverse code to items lb033q and lb033v.
Scores are constructed following Smith et al. (2013), as the average of the following items:
Openness to Experience: lb033m, lb033o, lb033s, lb033t, lb033w, lb033z3, lb033z4.
Conscientiousness: lb033e, lb033i, lb033n, lb033v, lb033z5.
Extraversion: lb033a, lb033f, lb033j, lb033u, lb033z3.
Agreeableness: lb033b, lb033g, lb033k, lb033p, lb033y.
Neuroticism: lb033d, lb033h, lb033l, lb033q.
Each score is missing when more than half of the items are missing. For sake of comparability, in the analysis we rescale each score in the 0-1 range.

Cynical Hostility[14]

"Please say how much you agree or disagree with the following statements:

[lb019a] Most people dislike putting themselves out to help other people.

[lb019b] Most people will use somewhat unfair means to gain profit or an advantage rather than lose it.

[lb019c] No one cares much what happens to you.

[lb019d] I think most people would lie in order to get ahead.

[lb019e] I commonly wonder what hidden reasons another person may have for doing something nice for me."

Possible answers are "Strongly disagree", "Somewhat disagree", "Slightly disagree", "Slightly agree", "Somewhat agree" and "Strongly agree", to which we assign the value 1, 2, 3, 4, 5 and 6 respectively.

The score is the average of the items.

Anxiety[15]

"Please read the statements below. How often did you feel that way DURING THE PAST WEEK. The best answer is usually the one that comes to your mind first).

[lb041a] I had fear of the worst happening.

[lb041b] I was nervous.

[lb041c] I felt my hands trembling.

[lb041d] I had a fear of dying.

[lb041e] I felt faint."

[14] *Source*: Cook, W.W., Medley, D.M., 1954. Proposed hostility and pharisaic-virtue scales for the MMPI. *Journal of Applied Psychology, 38*, 414-418.

[15] *Source*: Beck, A.T., Epstein, N., Brown, G., Steer, R.A., 1988. An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology, 56(6)*, 893-897.

Wetherell, J.L., Areán, P.A., 1997. Psychometric evaluation of the Beck anxiety inventory with older medical patients. *Psychological Assessment, 9(2)*, 136-144.

Possible answers are: “Never”, “Hardly ever”, “Some of the time”, and “Most of the time”, to which we assign the values 1, 2, 3 and 4 respectively.
The score is the average of the items.

Anger (Spielberger Anger Expression Scale) [16]

> “Here are some statements that describe how people react or behave when they are feeling angry or mad. Thinking of the times you feel angry, for each statement please indicate how often you react or behave this way. Respond quickly to these without thinking much, as your first impulse is usually the best answer.
> [lb042a] When I am feeling angry or mad, I keep things in.
> [lb042b] When I am feeling angry or mad, I withdraw from people.
> [lb042c] When I am feeling angry or mad, I am irritated more than people are aware.
> [lb042d] When I am feeling angry or mad, I am angrier than I am willing to admit.
> [lb042e] When I am feeling angry or mad, I argue with others.
> [lb042f] When I am feeling angry or mad, I strike out at whatever infuriates me.
> [lb042g] When I am feeling angry or mad, I say nasty things.
> [lb042h] When I am feeling angry or mad, I lose my temper.
> [lb042i] I am quick tempered.
> [lb042j] I have a fiery temper.
> [lb042k] I fly off the handle.”

Possible answers are: “Almost never”, “Sometimes”, “Often”, and “Almost always”, to which we assign the values 1, 2, 3 and 4 respectively.
Scores are the average of the following items:

- Anger-In: lb042a, lb042b, lb042c, lb042d.
- Anger-Out: lb042e, lb042f, lb042g, lb042h, lb042i, lb042j, lb042k.

[16] *Source*: Forgays, D.K., Spielberger, C.D., Ottaway, S.A., Forgays, D.G., 1998. Factor structure of the state-trait anger expression inventory for middle-aged men and women. *Assessment, 5*, 141-155.

Figure 1. Life Satisfaction

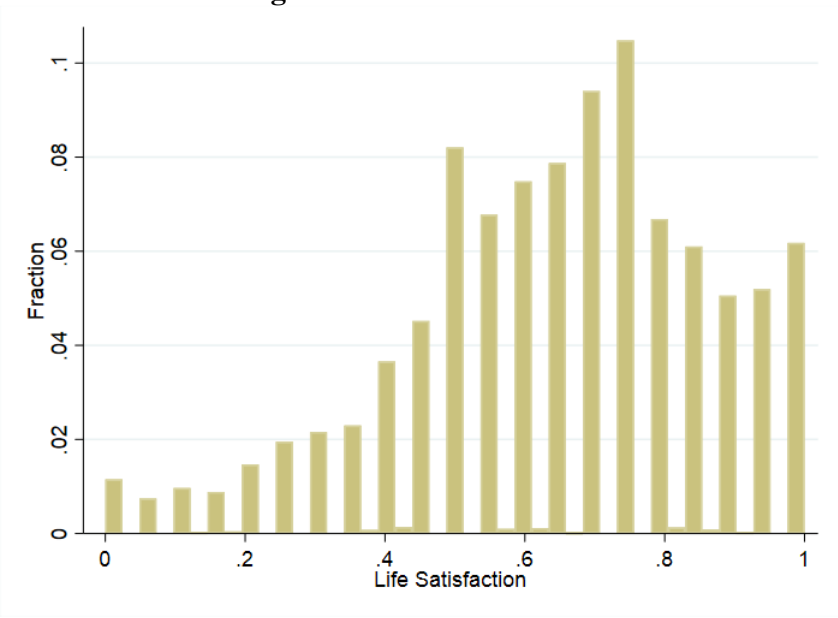

Table 1. Summary Statistics

a) Explanatory variables

Variable	Mean	Std. dev.	Minimum	Maximum
		a) Life Satisfaction		
Life satisfaction (score)	0.645	0.226	0	1
Satisfied with home	*0.808*	*0.394*	*0*	*1*
Satisfied with leisure	*0.797*	*0.402*	*0*	*1*
Satisfied with family life	*0.696*	*0.460*	*0*	*1*
Satisfied with city	*0.761*	*0.427*	*0*	*1*
Satisfied with finances	*0.461*	*0.498*	*0*	*1*
Satisfied with income	*0.475*	*0.499*	*0*	*1*
Satisfied with health	*0.531*	*0.499*	*0*	*1*
		b) Lifetime Traumas		
Child death	*0.145*	*0.353*	*0*	*1*
Within 10 years	*0.049*	*0.217*	*0*	*1*
Within 11-30 years	*0.041*	*0.199*	*0*	*1*
Over 30 years	*0.055*	*0.227*	*0*	*1*
Physical attack	*0.059*	*0.237*	*0*	*1*
Within 10 years	*0.016*	*0.127*	*0*	*1*
Within 11-30 years	*0.015*	*0.123*	*0*	*1*
Over 30 years	*0.028*	*0.164*	*0*	*1*
Illness	*0.257*	*0.437*	*0*	*1*
Within 10 years	*0.132*	*0.338*	*0*	*1*
Within 11-30 years	*0.066*	*0.248*	*0*	*1*
Over 30 years	*0.060*	*0.237*	*0*	*1*
Illness (others)	*0.286*	*0.452*	*0*	*1*
Within 10 years	*0.155*	*0.362*	*0*	*1*
Within 11-30 years	*0.091*	*0.287*	*0*	*1*
Over 30 years	*0.041*	*0.197*	*0*	*1*
Physically abused (<18)	*0.072*	*0.258*	*0*	*1*
		c) Personality		
Openness	0.653	0.182	0	1
Conscientiousness	0.691	0.132	0	1
Extraversion	0.737	0.183	0	1
Agreeableness	0.846	0.156	0	1
Neuroticism	0.439	0.154	0	1
Cynical hostility	0.372	0.218	0	1
Anxiety	0.171	0.183	0	1
Anger-in	0.392	0.226	0	1
Anger-out	0.163	0.164	0	1

(Continues in the next page)

Table 1. (Continued)

Variable	Mean	Std. dev.	Minimum	Maximum
		d) Socio-demographics		
Age	66.435	7.197	50	80
Female	*0.592*	*0.491*	*0*	*1*
Non-white	*0.147*	*0.354*	*0*	*1*
Immigrate	*0.061*	*0.239*	*0*	*1*
Married	*0.693*	*0.461*	*0*	*1*
High school	*0.195*	*0.396*	*0*	*1*
College	*0.112*	*0.315*	*0*	*1*
Employee	*0.306*	*0.461*	*0*	*1*
Self-employed	*0.093*	*0.291*	*0*	*1*
Good health	*0.478*	*0.500*	*0*	*1*
Income (k USD)	72.640	116.873	0	5,611.991
Fin. wealth (k USD)	150.297	544.159	0.001	3.29e4
Real wealth (k USD)	290.946	774.357	0.001	3.25e4
Home	*0.865*	*0.342*	*0*	*1*
Wave 2008	*0.225*	*0.418*	*0*	*1*
Wave 2010	*0.275*	*0.447*	*0*	*1*
Wave 2012	*0.225*	*0.418*	*0*	*1*

Note: 13,014 observations, except for variables "Satisfied with home", "Satisfied with leisure", "Satisfied with family life", "Satisfied with city", "Satisfied with income" and "Satisfied with health" that are based on about 9,000 observations. The variables in italics are dummy.

Table 2. Average Life Satisfaction by Trauma

	Life Satisfaction		Test	
Trauma	With Trauma	Without Trauma	Statistic	P-value
Child death	0.622	0.649	4.881	0.000
Physical attack	0.545	0.652	12.770	0.000
Illness	0.615	0.656	8.928	0.000
Illness (others)	0.631	0.651	4.396	0.000
Physically abused (<18)	0.559	0.652	12.105	0.000

Note: 13,014 observations. The last two columns report the statistic and the p-value of a t-test on the comparison of the mean in the two sub-groups of observations with and without the trauma. The null hypothesis is that the mean is identical; the alternative hypothesis is that it is different.

Table 3. Benchmark Analysis

	(1)	(2)	(3)	(4)
Child death			-0.003	
			(0.006)	
Within 10 years				-0.008
				(0.009)
Within 11-30 years				0.006
				(0.010)
Over 30 years				-0.006
				(0.009)
Physical attack			-0.035***	
			(0.009)	
Within 10 years				-0.056***
				(0.016)
Within 11-30 years				-0.041***
				(0.016)
Over 30 years				-0.018
				(0.012)
Illness			-0.009**	
			(0.004)	
Within 10 years				-0.011**
				(0.006)
Within 11-30 years				-0.005
				(0.008)
Over 30 years				-0.008
				(0.008)
Illness (others)			-0.010**	
			(0.004)	
Within 10 years				-0.011**
				(0.005)
Within 11-30 years				-0.005
				(0.007)
Over 30 years				-0.014
				(0.010)
Physically abused (<18)			-0.035***	-0.035***
			(0.008)	(0.008)
Openness		-0.026*	-0.016	-0.016
		(0.014)	(0.014)	(0.014)
Conscientiousness		0.099***	0.096***	0.096***
		(0.018)	(0.018)	(0.018)
Extraversion		0.183***	0.181***	0.181***
		(0.015)	(0.015)	(0.015)
Agreeableness		0.011	0.013	0.013
		(0.016)	(0.016)	(0.016)
Neuroticism		-0.095***	-0.098***	-0.097***
		(0.014)	(0.014)	(0.014)

(Continues in the next page)

Table 3. (Continued)

	(1)	(2)	(3)	(4)
Cynical hostility		-0.062***	-0.060***	-0.060***
		(0.010)	(0.010)	(0.010)
Anxiety		-0.216***	-0.208***	-0.207***
		(0.013)	(0.013)	(0.013)
Anger-in		-0.069***	-0.064***	-0.064***
		(0.010)	(0.010)	(0.010)
Anger-out		-0.063***	-0.057***	-0.058***
		(0.014)	(0.014)	(0.014)
Age/10	0.036***	0.021***	0.020***	0.020***
	(0.004)	(0.003)	(0.003)	(0.003)
Female	0.018***	0.007	0.008*	0.008*
	(0.005)	(0.004)	(0.004)	(0.004)
Non-white	0.003	-0.008	-0.010	-0.010
	(0.007)	(0.006)	(0.006)	(0.006)
Immigrate	0.016	0.022**	0.021**	0.021**
	(0.010)	(0.010)	(0.010)	(0.010)
Married	0.064***	0.062***	0.060***	0.060***
	(0.005)	(0.005)	(0.005)	(0.005)
High school	0.007	-0.002	-0.001	-0.001
	(0.006)	(0.005)	(0.005)	(0.005)
College	0.032***	0.024***	0.024***	0.025***
	(0.007)	(0.007)	(0.007)	(0.007)
Employee	-0.006	-0.014***	-0.016***	-0.016***
	(0.005)	(0.005)	(0.005)	(0.005)
Self-employed	-0.002	-0.014**	-0.014**	-0.014**
	(0.007)	(0.007)	(0.007)	(0.007)
Good health	0.103***	0.057***	0.055***	0.055***
	(0.004)	(0.004)	(0.004)	(0.004)
Ln(1+income)	0.004*	0.001	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)
Ln(1+fin. wealth)	0.006***	0.005***	0.004***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)
Ln(1+real wealth)	0.003***	0.002**	0.002*	0.002*
	(0.001)	(0.001)	(0.001)	(0.001)
Home	0.021**	0.019**	0.017**	0.017**
	(0.008)	(0.008)	(0.008)	(0.008)
Wave 2008	-0.025***	-0.026***	-0.026***	-0.026***
	(0.005)	(0.005)	(0.005)	(0.005)
Wave 2010	-0.035***	-0.033***	-0.033***	-0.033***
	(0.004)	(0.004)	(0.004)	(0.004)
Wave 2012	-0.044***	-0.043***	-0.043***	-0.043***
	(0.006)	(0.005)	(0.005)	(0.005)
Constant	0.182***	0.315***	0.328***	0.327***
	(0.034)	(0.036)	(0.035)	(0.035)
Observations	13,014	13,014	13,014	13,014
R-squared	0.157	0.272	0.276	0.277

Note: Individual-clustered standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 4. Gender Differences

	(1) Male	(2) Female	(3) Male	(4) Female
Child death	0.000	-0.006		
	(0.009)	(0.007)		
Within 10 years			-0.017	-0.003
			(0.014)	(0.012)
Within 11-30 years			0.009	0.004
			(0.016)	(0.012)
Over 30 years			0.010	-0.015
			(0.014)	(0.011)
Physical attack	-0.026*	-0.041***		
	(0.013)	(0.012)		
Within 10 years			-0.040*	-0.066***
			(0.024)	(0.022)
Within 11-30 years			-0.041*	-0.043**
			(0.023)	(0.020)
Over 30 years			-0.010	-0.023
			(0.019)	(0.015)
Illness	-0.010	-0.009		
	(0.006)	(0.006)		
Within 10 years			-0.015*	-0.009
			(0.008)	(0.008)
Within 11-30 years			0.001	-0.011
			(0.011)	(0.011)
Over 30 years			-0.009	-0.008
			(0.011)	(0.012)
Illness (others)	-0.007	-0.011**		
	(0.007)	(0.006)		
Within 10 years			-0.006	-0.014**
			(0.008)	(0.007)
Within 11-30 years			-0.002	-0.006
			(0.011)	(0.008)
Over 30 years			-0.016	-0.014
			(0.016)	(0.012)
Physically abused (<18)	-0.031**	-0.035***	-0.032**	-0.036***
	(0.013)	(0.010)	(0.013)	(0.010)
Openness	-0.043*	-0.001	-0.044**	-0.001
	(0.022)	(0.018)	(0.022)	(0.018)
Conscientiousness	0.124***	0.078***	0.126***	0.079***
	(0.027)	(0.024)	(0.027)	(0.024)
Extraversion	0.194***	0.171***	0.194***	0.171***
	(0.022)	(0.020)	(0.022)	(0.020)
Agreeableness	0.027	0.001	0.025	0.000
	(0.023)	(0.023)	(0.023)	(0.023)
Neuroticism	-0.100***	-0.096***	-0.098***	-0.096***
	(0.022)	(0.019)	(0.022)	(0.019)

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Table 4. (Continued)

	(1) Male	(2) Female	(3) Male	(4) Female
Cynical hostility	-0.052***	-0.067***	-0.052***	-0.066***
	(0.015)	(0.014)	(0.015)	(0.014)
Anxiety	-0.215***	-0.202***	-0.215***	-0.200***
	(0.021)	(0.017)	(0.021)	(0.017)
Anger-in	-0.042***	-0.079***	-0.042***	-0.079***
	(0.015)	(0.013)	(0.015)	(0.013)
Anger-out	-0.044**	-0.071***	-0.045**	-0.072***
	(0.021)	(0.018)	(0.020)	(0.018)
Age/10	0.026***	0.016***	0.026***	0.016***
	(0.005)	(0.005)	(0.005)	(0.005)
Non-white	-0.025**	-0.001	-0.026**	-0.001
	(0.010)	(0.008)	(0.010)	(0.008)
Immigrate	0.025*	0.019	0.026*	0.019
	(0.015)	(0.013)	(0.015)	(0.013)
Married	0.062***	0.057***	0.062***	0.057***
	(0.008)	(0.006)	(0.008)	(0.006)
High school	-0.002	-0.001	-0.002	-0.001
	(0.008)	(0.007)	(0.008)	(0.007)
College	0.032***	0.016	0.032***	0.016
	(0.010)	(0.010)	(0.010)	(0.010)
Employee	-0.010	-0.021***	-0.010	-0.021***
	(0.007)	(0.006)	(0.007)	(0.006)
Self-employed	-0.011	-0.015	-0.011	-0.015
	(0.009)	(0.010)	(0.009)	(0.010)
Good health	0.058***	0.054***	0.058***	0.054***
	(0.006)	(0.006)	(0.006)	(0.006)
Ln(1+income)	-0.004*	0.005	-0.004*	0.005
	(0.002)	(0.003)	(0.002)	(0.003)
Ln(1+fin. wealth)	0.005***	0.004***	0.005***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)
Ln(1+real wealth)	0.000	0.003**	0.001	0.003**
	(0.001)	(0.001)	(0.001)	(0.001)
Home	0.026**	0.011	0.025**	0.010
	(0.012)	(0.010)	(0.012)	(0.010)
Wave 2008	-0.027***	-0.026***	-0.027***	-0.026***
	(0.007)	(0.006)	(0.007)	(0.006)
Wave 2010	-0.038***	-0.029***	-0.038***	-0.029***
	(0.006)	(0.005)	(0.006)	(0.005)
Wave 2012	-0.044***	-0.042***	-0.043***	-0.043***
	(0.008)	(0.007)	(0.008)	(0.007)
Constant	0.312***	0.354***	0.312***	0.353***
	(0.048)	(0.050)	(0.048)	(0.050)
Observations	5,304	7,710	5,304	7,710
R-squared	0.285	0.274	0.286	0.275

Note: Individual-clustered standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 5. Specific Domains

	(1) Home	(2) Leisure	(3) Family life	(4) City	(5) Finances	(6) Income	(7) Health
Child death	0.000	-0.026**	-0.001	0.004	0.030**	0.018	-0.008
	(0.011)	(0.012)	(0.013)	(0.013)	(0.013)	(0.014)	(0.013)
Physical attack	-0.040**	-0.062***	-0.041**	-0.052***	-0.052***	-0.071***	-0.037**
	(0.016)	(0.017)	(0.019)	(0.017)	(0.020)	(0.021)	(0.019)
Illness	-0.000	0.003	-0.008	0.009	-0.027***	-0.045***	-0.053***
	(0.009)	(0.010)	(0.010)	(0.010)	(0.010)	(0.011)	(0.010)
Illness (others)	-0.032***	-0.019**	-0.033***	-0.038***	-0.041***	-0.028***	-0.022**
	(0.009)	(0.010)	(0.010)	(0.009)	(0.009)	(0.010)	(0.010)
Physically abused (<18)	-0.036**	-0.014	-0.044***	-0.075***	-0.016	-0.035*	-0.057***
	(0.014)	(0.016)	(0.017)	(0.015)	(0.017)	(0.019)	(0.016)
Openness	-0.082***	-0.081***	0.047	-0.057*	-0.001	0.028	0.021
	(0.029)	(0.031)	(0.031)	(0.031)	(0.031)	(0.033)	(0.030)
Conscientiousness	0.143***	0.033	0.102**	0.051	0.113***	0.060	0.120***
	(0.036)	(0.037)	(0.040)	(0.039)	(0.040)	(0.043)	(0.039)
Extraversion	0.151***	0.196***	0.424***	0.198***	0.226***	0.252***	0.311***
	(0.030)	(0.032)	(0.032)	(0.031)	(0.033)	(0.035)	(0.031)
Agreeableness	0.104***	0.153***	0.031	0.185***	0.005	-0.015	0.003
	(0.033)	(0.035)	(0.037)	(0.035)	(0.036)	(0.039)	(0.037)
Neuroticism	-0.076***	-0.043	-0.179***	-0.166***	-0.047	-0.075**	-0.063*
	(0.029)	(0.030)	(0.033)	(0.031)	(0.032)	(0.035)	(0.032)
Cynical hostility	-0.062***	-0.124***	-0.100***	-0.108***	-0.121***	-0.101***	-0.082***
	(0.020)	(0.021)	(0.022)	(0.022)	(0.022)	(0.024)	(0.021)
Anxiety	-0.169***	-0.169***	-0.363***	-0.273***	-0.301***	-0.338***	-0.461***
	(0.024)	(0.025)	(0.027)	(0.025)	(0.029)	(0.031)	(0.028)
Anger-in	-0.030*	0.006	-0.062***	-0.114***	-0.066***	-0.032	-0.036*
	(0.018)	(0.020)	(0.021)	(0.020)	(0.020)	(0.022)	(0.020)
Anger-out	-0.084***	-0.094***	-0.081***	-0.111***	-0.061**	-0.091***	-0.050*
	(0.025)	(0.027)	(0.030)	(0.028)	(0.029)	(0.033)	(0.030)

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Table 5. (Continued)

	(1) Home	(2) Leisure	(3) Family life	(4) City	(5) Finances	(6) Income	(7) Health
Age/10	0.036***	0.045***	0.048***	0.038***	0.054***	0.038***	0.032***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)	(0.007)
Female	-0.031***	-0.003	-0.034***	-0.043***	-0.025**	-0.040***	-0.031***
	(0.009)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Non-white	-0.041***	-0.052***	-0.034**	-0.017	-0.030**	-0.014	-0.011
	(0.012)	(0.013)	(0.013)	(0.013)	(0.014)	(0.015)	(0.013)
Immigrate	0.014	0.026	-0.004	0.008	0.016	0.001	0.030
	(0.018)	(0.019)	(0.020)	(0.020)	(0.020)	(0.021)	(0.019)
Married	0.044***	0.006	0.052***	0.112***	0.045***	0.037***	0.028***
	(0.010)	(0.010)	(0.011)	(0.010)	(0.011)	(0.011)	(0.010)
High school	0.004	0.004	-0.012	-0.046***	-0.011	0.015	0.001
	(0.011)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.011)
College	0.018	0.005	-0.005	-0.050***	0.052***	0.047***	-0.018
	(0.015)	(0.016)	(0.016)	(0.015)	(0.015)	(0.016)	(0.014)
Employee	-0.039***	0.005	-0.038***	-0.012	-0.066***	-0.011	0.028**
	(0.010)	(0.011)	(0.011)	(0.011)	(0.011)	(0.012)	(0.011)
Self-employed	-0.029*	-0.001	-0.041**	-0.016	-0.101***	-0.071***	0.027*
	(0.015)	(0.016)	(0.017)	(0.016)	(0.015)	(0.016)	(0.016)
Good health	0.044***	0.020**	0.100***	0.057***	0.071***	0.174***	0.301***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.007)
Ln(1+income)	0.001	0.002	-0.001	0.003	0.018***	0.014**	-0.003
	(0.003)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)
Ln(1+fin. wealth)	0.006***	0.003***	0.003***	0.000	0.026***	0.017***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ln(1+real wealth)	0.007***	0.008***	0.005***	0.001	0.011***	0.009***	0.003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Home	0.005	-0.023	0.014	0.033**	-0.008	-0.010	0.034**
	(0.014)	(0.015)	(0.016)	(0.015)	(0.016)	(0.018)	(0.016)
Wave 2008					0.089***		
					(0.011)		
Wave 2010	-0.007	0.001	-0.023**	-0.026***	0.074***	-0.063***	-0.203***
	(0.009)	(0.010)	(0.010)	(0.010)	(0.009)	(0.011)	(0.010)
Wave 2012	-0.008	-0.014*	-0.019**	-0.024***	0.092***	-0.034***	-0.203***
	(0.008)	(0.008)	(0.009)	(0.009)	(0.012)	(0.011)	(0.010)
Observations	9,410	9,396	9,395	9,388	12,972	9,389	9,407

Note: Average marginal effects from probit regressions. Individual-clustered standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table A1. All Traumas

	(1)	(2)	(3)	(4)
Child death			-0.001	
			(0.006)	
Within 10 years				-0.002
				(0.009)
Within 11-30 years				0.008
				(0.010)
Over 30 years				-0.007
				(0.009)
Natural disaster			0.000	
			(0.005)	
Within 10 years				-0.007
				(0.009)
Within 11-30 years				-0.000
				(0.008)
Over 30 years				0.008
				(0.008)
Combat			-0.003	
			(0.010)	
Within 10 years				0.031*
				(0.019)
Within 11-30 years				-0.008
				(0.056)
Over 30 years				-0.011
				(0.011)
Addicted (others)			-0.019***	
			(0.005)	
Within 10 years				-0.020***
				(0.006)
Within 11-30 years				-0.014*
				(0.007)
Over 30 years				-0.022*
				(0.012)
Physical attack			-0.032***	
			(0.009)	
Within 10 years				-0.052***
				(0.017)
Within 11-30 years				-0.039**
				(0.016)
Over 30 years				-0.017
				(0.012)
Illness			-0.008*	
			(0.005)	
Within 10 years				-0.010*
				(0.006)
Within 11-30 years				-0.004
				(0.008)
Over 30 years				-0.007
				(0.008)

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Table A1. (Continued)

	(1)	(2)	(3)	(4)
Illness (others)			-0.008*	
			(0.004)	
Within 10 years				-0.010*
				(0.005)
Within 11-30 years				-0.004
				(0.007)
Over 30 years				-0.010
				(0.010)
Repeated school (<18)			-0.004	-0.004
			(0.006)	(0.006)
Parents addicted (<18)			-0.007	-0.007
			(0.006)	(0.006)
Physically abused (<18)			-0.031***	-0.032***
			(0.008)	(0.008)
Openness		-0.026*	-0.015	-0.015
		(0.014)	(0.014)	(0.014)
Conscientiousness		0.099***	0.094***	0.095***
		(0.018)	(0.018)	(0.018)
Extraversion		0.183***	0.179***	0.179***
		(0.015)	(0.015)	(0.015)
Agreeableness		0.011	0.013	0.013
		(0.016)	(0.016)	(0.016)
Neuroticism		-0.095***	-0.098***	-0.098***
		(0.014)	(0.014)	(0.014)
Cynical hostility		-0.062***	-0.060***	-0.060***
		(0.010)	(0.010)	(0.010)
Anxiety		-0.216***	-0.210***	-0.209***
		(0.013)	(0.013)	(0.013)
Anger-in		-0.069***	-0.062***	-0.063***
		(0.010)	(0.010)	(0.010)
Anger-out		-0.063***	-0.057***	-0.057***
		(0.014)	(0.014)	(0.014)
Age/10	0.036***	0.021***	0.020***	0.020***
	(0.004)	(0.003)	(0.003)	(0.003)
Female	0.018***	0.007	0.009**	0.009**
	(0.005)	(0.004)	(0.005)	(0.005)
Non-white	0.003	-0.008	-0.010	-0.009
	(0.007)	(0.006)	(0.007)	(0.007)
Immigrate	0.016	0.022**	0.018*	0.018*
	(0.010)	(0.010)	(0.010)	(0.010)
Married	0.064***	0.062***	0.059***	0.059***
	(0.005)	(0.005)	(0.005)	(0.005)
High school	0.007	-0.002	-0.002	-0.002
	(0.006)	(0.005)	(0.005)	(0.005)
College	0.032***	0.024***	0.024***	0.024***
	(0.007)	(0.007)	(0.007)	(0.007)

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Table A1. (Continued)

	(1)	(2)	(3)	(4)
Employee	-0.006	-0.014***	-0.016***	-0.016***
	(0.005)	(0.005)	(0.005)	(0.005)
Self-employed	-0.002	-0.014**	-0.014**	-0.014**
	(0.007)	(0.007)	(0.007)	(0.007)
Good health	0.103***	0.057***	0.055***	0.055***
	(0.004)	(0.004)	(0.004)	(0.004)
Ln(1+income)	0.004*	0.001	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)
Ln(1+fin. wealth)	0.006***	0.005***	0.004***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)
Ln(1+real wealth)	0.003***	0.002**	0.002**	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Home	0.021**	0.019**	0.017**	0.017**
	(0.008)	(0.008)	(0.008)	(0.008)
Wave 2008	-0.025***	-0.026***	-0.026***	-0.027***
	(0.005)	(0.005)	(0.005)	(0.005)
Wave 2010	-0.035***	-0.033***	-0.033***	-0.033***
	(0.004)	(0.004)	(0.004)	(0.004)
Wave 2012	-0.044***	-0.043***	-0.043***	-0.043***
	(0.006)	(0.005)	(0.005)	(0.005)
Constant	0.182***	0.315***	0.334***	0.334***
	(0.034)	(0.036)	(0.036)	(0.036)
Observations	13,014	13,014	12,852	12,852
R-squared	0.157	0.272	0.277	0.278

Note: Individual-clustered standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1