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The Cost of Being Too Patient†

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Theoretical and empirical evidence show that patience, the ability to sacrifice the present for future rewards, helps explain economic decisions such as savings, investment in human capital, and even the wealth of nations (Chen 2013, Falk et al. 2018, Figlio et al. 2019, Galor and Özak 2016).

However, an excessive tendency to delay gratification can have psychological costs, as measured by many indicators of subjective well-being. Recent evidence shows that Asian American students, a group scoring high in the level of patience, suffer psychological and social costs despite their strong academic success. One possible interpretation advanced in the literature is that they may suffer immediate psychological costs as a result of sacrificing the present for the future (Hsin and Xie 2014).

In this paper, we test systematically the potential cost of being too patient by using the Global Preference Survey developed in Falk et al. (2018) within the framework of the 2012 Gallup World Poll data.

We focus on life satisfaction, the variable most commonly used in the existing happiness literature (Di Tella, MacCulloch, and Oswald 2003; Layard 2011; Stevenson and Wolfers 2008) and also use a variety of alternative measures of subjective well-being.

We find that excessive patience is costly for individual well-being. This result is consistent across nine different measures of subjective well-being. Our measure of patience varies from a minimum of −1.31 to a maximum of 2.76 (this measure has a standardized mean of zero and standard deviation of 1). For one of the main well-being indices, the life evaluation index, the level of patience that maximizes happiness is equal to 1.56, a numerical value similar to the one obtained by using other well-being indicators.

The economic magnitude of the cost of being too patient is also significant. Moving from the highest level of life satisfaction (reached at a level of patience equal to 1.56) to the one associated with the ninety-ninth percentile of patience implies a reduction in happiness of 0.025, equivalent to roughly 22 percent of the estimated difference between having completed college (0.200) and having a high school diploma (0.086). When we use the "positive experience index," a summary measure about experienced well-being the day before the interview, the results are of similar magnitude: moving from a level of patience of 1.40, corresponding to the peak in the positive experience index, to the ninety-ninth percentile in patience reduces the positive experience index by 1.07, equivalent to 26 percent of the difference in happiness between those who completed college (7.16) and those with a high school diploma (3.12).

As a robustness check, we present the results after splitting the sample along many observable characteristics. The results confirm that the relationship is hump shaped within each group, suggesting that our main findings are not driven by compositional effects.

Overall, our results suggest that excessively delaying present gratification for future rewards can have substantial well-being effects. A moderate amount of patience appears to be associated with a higher level of life satisfaction and emotional well-being.

I. Data and Variables of Interest

Our analysis uses data from the 2012 Gallup World Poll and the Global Preference Survey.

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The Gallup World Poll includes a wide range of individual-level background variables, such as sociodemographic information (age, gender, and marital status), a large set of economic variables (income, educational attainment, and labor market status), and various measures of well-being.

Falk et al. (2018) develops the Global Preference Survey by adding to the 2012 Gallup questionnaire a set of survey items to measure time preferences, risk preferences, and social preferences (altruism, positive/negative reciprocity, and trust) for representative population samples in 76 countries. Our measure of patience comes from the Global Preference Survey.

A. *Patience*

Falk et al. (2018) constructs the patience measure by using responses to two survey items, one with a quantitative and one with a qualitative format. The quantitative survey item consists of a series of five interdependent hypothetical binary choices between immediate and delayed financial rewards, a format commonly referred to as the "staircase" (or unfolding brackets) procedure. In each of the five questions, participants had to decide between receiving a payment today and receiving a larger payment in 12 months: "Suppose you were given the choice between receiving a payment today or a payment in 12 months. We will now present to you five situations. The payment today is the same in each of these situations. The payment in 12 months is different in every situation. For each of these situations we would like to know which one you would choose. Please assume there is no inflation, i.e., future prices are the same as today's prices. Please consider the following: Would you rather receive amount x today or y in 12 months?"[1]

The qualitative measure of patience is given by the respondents' self-assessment of their willingness to wait on an 11-point Likert scale: "We now ask for your willingness to act in a certain way. Please indicate your answer on a scale from 0 to 10, where 0 means you are 'completely unwilling to do so' and a 10 means you are 'very willing to do so.' How willing are you to give up something that is beneficial for you today in order to benefit more from that in the future?"

The summary measure of patience is a linear combination of the quantitative and qualitative survey items, using the weights obtained from the experimental validation procedure (see Falk et al. (2016) for details).

Figure 1 shows the distribution of patience in our sample (the variable is standardized with mean zero and standard deviation one). Patience is quite heterogeneous across individuals, and most people appear to be impatient (the median is -0.29, and the minimum and maximum are -1.31 and 2.76).

B. *Subjective Well-Being*

The Gallup World Poll includes a measure of subjective well-being in which respondents are shown a picture and told, "Here is a ladder representing the 'ladder of life.' Let's suppose the top of the ladder represents the best possible life for you; and the bottom, the worst possible life for you. On which step [between 0 and 10] of the ladder do you feel you personally stand at the present time?"[2] There are two versions of this question: one for life today and one for life in five years. Gallup also has a Life Evaluation Index, which combines the two questions of well-being about life today and life in the future. This summary index can take values from 1 to 3, where 1 indicates "suffering," 2 indicates "struggling," and 3 indicates "thriving."[3]

Gallup asks a series of more specific questions about the feelings of the person the day before the interview, which aim at capturing various aspects of emotional health and daily experience. We analyze all the questions related to happiness. More specifically, we select answers regarding enjoyment, happiness, worry, and

[1] See Falk et al. (2018) for further details.

[2] This measure of subjective well-being has been shown to be correlated with physical measures of well-being such as overall health, heart rate, sleep quality, sociability, and propensity to laugh and smile (Diener 1984, Kahneman and Krueger 2006). This measure also tends to be relatively stable over time, and it has a high test-retest correlation (Diener and Tov 2007).

[3] The index is calculated by using the following procedure. Individuals who rate their current lives at 7 or higher and their future at 8 or higher are coded as "thriving." Individuals are coded as "suffering" if they report their current and future lives as a 4 or lower. All other individuals are coded as "struggling."

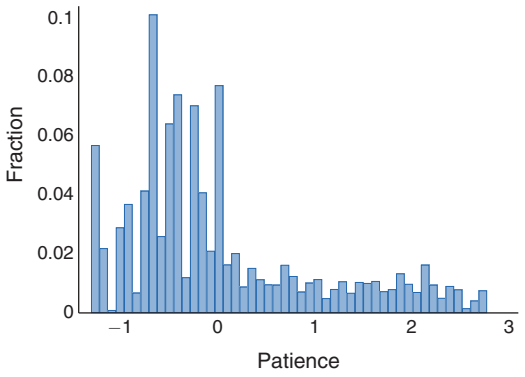

FIGURE 1. PATIENCE, DENSITY FUNCTION

Note: The measure of patience is taken from Falk et al. (2018).

sadness from the following question: "Did you experience the following feelings during a lot of the day yesterday?" (The available answers to this question were simply "yes" and "no.")[4] We also use the following question: "Now, please think about yesterday, from the morning until the end of the day. Think about where you were, what you were doing, who you were with, and how you felt. Did you smile or laugh a lot yesterday?" (The available answers to this question were also yes and no.)

As an additional proxy for happiness, we report results using the positive experience index, a measure of experienced well-being on the day before the survey. The index can take values from 0 to 100.[5]

[4] We coded all of the answers in such a way that "1" corresponds to positive feelings and a "0" corresponds to negative feelings.

[5] Gallup uses the following five questions to calculate the index: (i) "Did you feel well-rested yesterday?" (ii) "Were you treated with respect all day yesterday?" (iii) "Did you smile or laugh a lot yesterday?" (iv) "Did you learn or do something interesting yesterday?" (v) "Did you experience the following feelings during a lot of the day yesterday? What about enjoyment?" To calculate the index, Gallup applies the following procedure. The five items are recoded so that positive answers are scored as a 1 and all other answers (including don't know and refuse) are scored as a 0. If a record has no answer from an item, that item is not eligible for inclusion in the calculations. An individual record has an index calculated if it has at least four out of five valid scores (0 or 1). The record's final score is the mean of valid items multiplied by 100.

II. Estimation Results

We study the relationship between individual well-being and patience by estimating the following model in the pooled sample of countries in the Gallup Poll:

$$(1)\quad Happiness_{ic} = \alpha Patience_{ic} + \beta Patience_{ic}^2 + \gamma X_{ic} + \delta C + \varepsilon_{ic},$$

where $Happiness_{ic}$ is one of the well-being measures described above; X_{ic} is a vector of characteristics that could influence individual well-being (level of education, household income, and labor market and marital status of the person, in addition to a female dummy and a quadratic for age); and C are country fixed effects, to control for systematic differences in the level of average well-being across countries. Standard errors are clustered at the country level.[6]

Columns 1–3 in Table 1 show a quadratic relationship between well-being and patience for all the measures of life satisfaction (life satisfaction today, life satisfaction in five years, or the life evaluation index). When patience is equal to 1.56, the life evaluation index reaches its peak, while for higher levels in patience, the life evaluation index decreases. Similar results are obtained by using measures of life satisfaction today and in five years.

The magnitude of the well-being cost of being too patient is also economically and statistically significant. Moving from a level of patience corresponding to the peak in the life evaluation index to the ninety-ninth percentile in patience reduces the life evaluation index by 0.025, equivalent to 22 percent of the differential effect in happiness of having a college degree (0.200) with respect to a high school diploma (0.086).[7]

[6] Descriptive statistics are reported in Table A1 in the online Appendix.

[7] All of the controls' coefficients have signs and magnitudes consistent with the literature (Di Tella, MacCulloch, and Oswald 2003; Stevenson and Wolfers 2008): income positively correlates with happiness, together with education and employment (see Table A2 in the online Appendix). In the online Appendix (Table A3), we also report a specification that includes just the demographic controls (age and gender), together with country fixed effects, and the results are very similar.

TABLE 1— LIFE SATISFACTION, EXPERIENCED WELL-BEING, AND PATIENCE: INDIVIDUAL-LEVEL OLS ESTIMATES

	Life today (1)	Life in five years (2)	Life evaluation index (3)	Happiness (4)	Smile or laugh (5)	Enjoyment (6)	Worry (7)	Sadness (8)	Positive experience index (9)
Patience	0.251	0.273	0.069	0.018	0.017	0.022	0.011	0.014	1.960
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.005]	[0.000]	[0.000]
Patience squared	−0.085	−0.100	−0.022	−0.006	−0.008	−0.007	−0.002	−0.005	−0.698
	[0.000]	[0.000]	[0.000]	[0.004]	[0.001]	[0.003]	[0.361]	[0.003]	[0.000]
Measures of well-being (mean and SD)	5.625	6.655	1.156	0.712	0.722	0.707	0.630	0.761	68.610
	(2.284)	(2.417)	(0.621)	(0.453)	(0.448)	(0.455)	(0.483)	(0.426)	(28.560)
Patience (mean and SD)	−0.022	−0.001	−0.001	−0.031	−0.033	−0.032	−0.033	−0.033	−0.034
	(0.992)	(0.996)	(0.996)	(0.987)	(0.986)	(0.986)	(0.985)	(0.986)	(0.985)
Optimal amount of patience	1.48	1.36	1.56	1.52	1.04	1.63	2.91	1.37	1.40
Number of countries	71	71	71	70	70	70	70	70	70
Observations	73,164	67,740	67,634	70,996	71,449	71,784	72,300	72,228	72,802
R^2	0.265	0.244	0.23	0.111	0.094	0.087	0.079	0.079	0.135

Notes: The unit of observation is an individual. The different measures of happiness are defined in the text. The measure of patience comes from Falk et al. (2018). All regressions include country fixed effects and the following individual controls: a quadratic in age, gender (a female dummy), education (dummies for having high school and up to some college and college or more—the excluded group is individuals with less than high school), marital status (dummies indicating whether a person is married or in a domestic partnership; separated or divorced; or single—the excluded group is widows), labor market status (dummies for being unemployed or being out of the labor force—the excluded group is employed individuals), and household income (expressed in logs). Coefficients are reported with standard errors clustered at the country level. OLS is ordinary least squares.

Columns 4–9 in Table 1 show the relationship between patience and a variety of alternative measures of self-reported well-being on the day before the interview, capturing various aspects of emotional health and daily experience, as well as the summary measure "positive experience index." With the exception of one variable (whether the person was worried the day before the survey), all of these additional measures confirm our main finding. When we use the positive experience index (column 9), the level of patience maximizing this index is 1.40. The magnitude of the effect is of the same order as in Table 1: moving the level of patience from 1.40 to 2.64 (ninety-ninth percentile) implies a reduction in the positive experience index of 1.07, equivalent to 26 percent of the difference in happiness between having a college degree (7.16) and having a high school diploma or no high school diploma (3.12).

While these results are correlational, since the relationship is hump shaped, we believe it is unlikely that they are driven by standard concerns of omitted variables and reverse causality. The results also hold when we split the sample along all observable characteristics included in the regression or when we split the sample by countries with a level of patience below or above the median, ruling out that our findings are driven by compositional effects.[8]

The relationship between patience and well-being is always hump shaped: there is a moderate amount of patience that maximizes the level of happiness.

III. Conclusions

This paper explores the cost of being too patient. We establish that the relationship between patience and various measures of subjective and experienced well-being is hump shaped: there exists an optimal amount of patience that maximizes happiness. Beyond this optimal level, higher levels of patience have a negative impact on well-being. The data suggest that only very high levels of patience are costly; therefore, the societal benefits of delaying

[8] In the online Appendix (Tables A4 and A5), we report the results of different splits of our sample based on age, gender, education, income, and marital and labor market status, for the life evaluation and positive experience indices. In the same tables, we also report the split by countries below or above (or equal to) the level of patience in the sample.

gratification on average exceed the cost of being too patient. This result helps us reconcile our findings with the literature that emphasizes the economic benefits of patience.

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