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How Narratives Impact Financial Behavior - Experimental Evidence from the COVID-19 Pandemic^{*}

Sören Harrs,¹ Lara Marie Müller,² Bettina Rockenbach³

Abstract

Narratives are omnipresent in today's communication to complement or even substitute "hard facts". Opinion leaders use narratives to spread their interpretation of reality, as we have witnessed throughout the COVID-19 pandemic. While the use of narratives might help opinion leaders to trigger intended reactions, little is known on potential collateral damages of narratives on economic behavior. In this paper we contribute to closing this gap by providing experimental evidence on how different narratives about the pandemic impact basic determinants of financial behavior. We show that the more pessimistic the narrative portrays the pandemic, the more pessimistic are subjects' expectations about the stock market, and the more risk averse and impatient subjects act in subsequent incentivized financial decisions. This shows that communication through narratives can have severe - potentially unintended - collateral effects on fundamental economic behavior.

Keywords: Narrative Economics, Persuasion, Information Provision

JEL Codes: D83, D91, G41

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“The truth is that the hardest times still lie ahead of us. (...) Soon, each one of us will know someone who has died from COVID-19.”

— Austrian Chancellor Sebastian Kurz, March 30th 2020 ¹

“We’re prepared, and we’re doing a great job with it. And it will go away. Just stay calm. It will go away.”

— US President Donald J. Trump, March 10th 2020 ²

1 Introduction

Narratives are omnipresent in today’s communication to complement or even substitute “hard facts”. Narratives are stories that contain subjective descriptions of reality. They provide the audience with mental models of the world, which explain the present and enable the audience to make predictions about the future (Eliaz and Spiegler, 2020; Schwartzstein and Sunderam, 2021). Politicians use narratives to build support for their policies, to be (re-)elected into office and to persuade citizens to engage in a variety of desired behaviors. The news media and social media spread narratives, as good storytelling grabs the attention of media consumers and is considered a predictor for virality in social networks (Quesenberry and Coolson, 2019; Pulizzi, 2012). As a consequence, a substantial share of the information presented in today’s media is embedded into narratives.

While many papers in economics study how the provision of objective information changes economic behavior, evidence on the economic impacts of narratives is still scarce.^{3,4} Shiller (2017) has most prominently argued that narratives have an important impact on financial

¹See https://www.kleinezeitung.at/politik/innenpolitik/5793215/Bundeskanzler-Sebastian-Kurz_Bald-wird-jeder-von-uns-jemanden (accessed on December 6th, 2020)

²See <https://edition.cnn.com/interactive/2020/10/politics/covid-disappearing-trump-comment-tracker/> (accessed on December 6th, 2020)

³Haaland, Roth, and Wohlfart (forthcoming) provide an excellent review of the literature on information provision experiments and conclude that “experiments systematically studying the role of stories, anecdotal evidence and narratives are still very scarce, and we believe a fruitful area for future research” (p.24). Information provision experiments typically provide subjects at random with statistics about an economic variable (e.g. Armantier et al., 2016; Armona, Fuster, and Zafar, 2019; Coibion, Gorodnichenko, and Ropele, 2019) or with objective information about the stock market (e.g. Laudenbach, Weber, and Wohlfart, 2021; Hanspal, Weber, and Wohlfart, 2020). A number of papers also test how providing information about the COVID-19 pandemic impacts macroeconomic expectations (Binder, 2020) or expectations about the pandemic (Fetzer et al., 2020; Rafkin, Shreekrishna, and Vautrey, 2021).

⁴DellaVigna and La Ferrara (2015) and Tetlock (2015) provide excellent reviews of the literature on how the media in general influence economic and financial behavior.

behavior which might be crucial to improve our understanding of economic ups- and downs. Observational studies on narratives and financial behavior face severe methodological issues with reversed causality (Shiller, 2017), and experimental evidence is, to the best of our knowledge, still missing. This paper contributes to filling this gap by providing experimental evidence on the effects of narratives on financial behavior.

Like other major exogenous shocks, the COVID-19 pandemic has been associated with drastic changes in economies worldwide,⁵ but also with great uncertainty regarding its duration and its likely impacts. Times of strong uncertainty allow for widely diverging interpretations of reality and opposing mental models about the future. The pandemic hence provides an ideal setting to test how narratives impact financial behavior. Since the outbreak of the coronavirus, politicians, scientists and journalists have aired vastly different narratives about the pandemic. Austrian chancellor Sebastian Kurz, for example, used very pessimistic, fear-provoking scenarios with the intention to increase compliance with social distancing measures.⁶ At the same time, other opinion leaders have spread much more optimistic narratives. Most famously, former US president Donald Trump has purposely downplayed the severeness of the pandemic in order to prevent a panic (Woodward, 2020). In this way news in countries around the world have not only informed about the latest statistics about the pandemic, but also provided very different narratives, ranging from rather optimistic to rather pessimistic ones.

In this paper we provide experimental evidence on how narratives about the COVID-19 pandemic impact fundamental determinants of financial behavior. In an online experiment (N=423) subjects read experimentally controlled articles that either provide an optimistic, a pessimistic or a balanced narrative about the COVID-19 pandemic. In a baseline condition subjects read a science-related article that is unrelated to COVID-19. To begin with, our data show that a pessimistic narrative about the pandemic in fact induces more negative forward-looking expectations about figures closely related to the course of the pandemic such as COVID-related deaths or the stock market. But are there - potentially unintended - collateral effects of narratives on financial behavior? And if so through which mechanism?

Our data suggest that narratives about the pandemic can have severe impacts on fundamental determinants of financial behavior. First, more pessimistic narratives about the pandemic cause more pessimistic forward-looking expectations about the stock market, which

⁵A wide range of studies document the vast impacts of the pandemic on financial markets and the aggregate economy (e.g. Chetty et al., 2020; Altig et al., 2020; Zhang, Hu, and Ji, 2020).

⁶According to media reports, see e.g.: <https://www.zeit.de/politik/ausland/2020-04/sebastian-kurz-coronavirus-krisenmanagement-strategie> (accessed on December 6, 2020)

we elicit in an incentivized forecasting task. Second, we find that the more pessimistic the narrative about COVID-19, the more risk-averse and impatient subjects behave in incentivized financial decisions. Given that people have been exposed to narratives about the pandemic at an extremely high frequency via the news and social media, the documented effects of narratives on financial expectations, risk aversion, and patience imply meaningful impacts of narratives on a wide range of financial behaviors.

Further, our paper provides evidence for a mechanism that might explain why narratives can impact even financial behavior that is not directly related to the provided story: they instill a sense of optimism or pessimism in subjects and trigger associated emotional reactions. When exposed to a more pessimistic narrative about the pandemic, subjects in our experiment report a higher level of general pessimism in life and feel much more afraid, upset and nervous. These measures are correlated with the effects on expectations and risk behavior and to a lesser extent with the effects in patience.

Our paper contributes empirical evidence to the emerging literature on narratives in economic research. We provide clear experimental evidence that narratives can impact financial behavior, as argued by Shiller (2017), and that narratives can be an effective tool of persuasive communication.

Based on our results on the behavioral effects of narratives, one could hypothesize that some of the fluctuations in risk aversion and investor sentiment across the business cycle can be explained by optimistic and pessimistic narratives that spread via the news, social media or professional networks.⁷

During the outbreak of the coronavirus, a large number of papers have investigated how public communication and the media impact health-related behaviors (e.g. Akesson et al., 2020; Banerjee et al., 2020; Bursztyrn et al., 2020). Our paper, in contrast, provides experimental evidence that narratives about the pandemic - often spread to influence the health behavior of citizens - have severe collateral effects on financial behavior. As a direct policy implication of our paper, politicians should take these hitherto undocumented economic impacts of narratives into account when choosing their public communication strategies in times of societal crises.

⁷Central models of investor behavior assume that investors act more risk averse in financial downturns than in financial upturns (Campbell and Cochrane, 1999; Barberis, Huang, and Santos, 2001). For empirical evidence on counter-cyclical risk aversion see, for example, Brunnermeier and Nagel (2008), Cohn et al. (2015), Guiso, Sapienza, and Zingales (2018), and C. Huber, J. Huber, and Kirchler (2021). See e.g. Barberis, Shleifer, and Vishny (1998) and Tetlock (2007) for research on investor sentiment.

2 Experimental Design and Data Description

The online experiment was conducted in Germany during the first wave of the COVID-19 pandemic with N=423 subjects, recruited from the subject pool of the Cologne Laboratory for Economic Research (CLER) via ORSEE (Greiner, 2015). The experiment was implemented with the survey software Qualtrics. The median time for completing the experiment was 15 minutes. Subjects were paid dependent on their economic decisions with an average of €6.21. Payments were made via PayPal. The experiment has been pre-registered in the AEA Social Science Registry as AEARCTR-0005795.⁸

2.1 Setting

When we conducted our experiment, on May 4th 2020, Germany had just lived through six weeks of strict political measures to combat the spread of COVID-19. The set of political measures that were in place since March 23rd 2020 contained, among others, the closure of schools, kindergartens and all non-essential businesses, strict rules of social distancing in public spaces and the prohibition of public gatherings of more than two persons living in different households. It was a wide-spread consensus that these measures had caused the reduction in the number of daily new cases in the weeks prior to the experiment (see Appendix Figure A1 for a timeline of the pandemic in Germany). Since mid April, a public discussion about lifting the restrictions and re-opening the economy had started in the media and among scientists and politicians.

2.2 Experimental Procedures - Overview

Figure 1 provides a graphical overview of the experimental procedures.⁹ Numbers in brackets in this section refer to the stages of the experiment depicted in Figure 1. At the beginning of the experiment, subjects were exposed to an article and were incentivized to memorize it as good as possible within two minutes (2).¹⁰ Later in the experiment, subjects faced three questions about the content of the article (6,8,10): for each correct answer subjects were paid €0.50. By incentivizing the careful reading of the article, we made sure that our subjects were sufficiently exposed to our manipulation. Our experimental manipulation

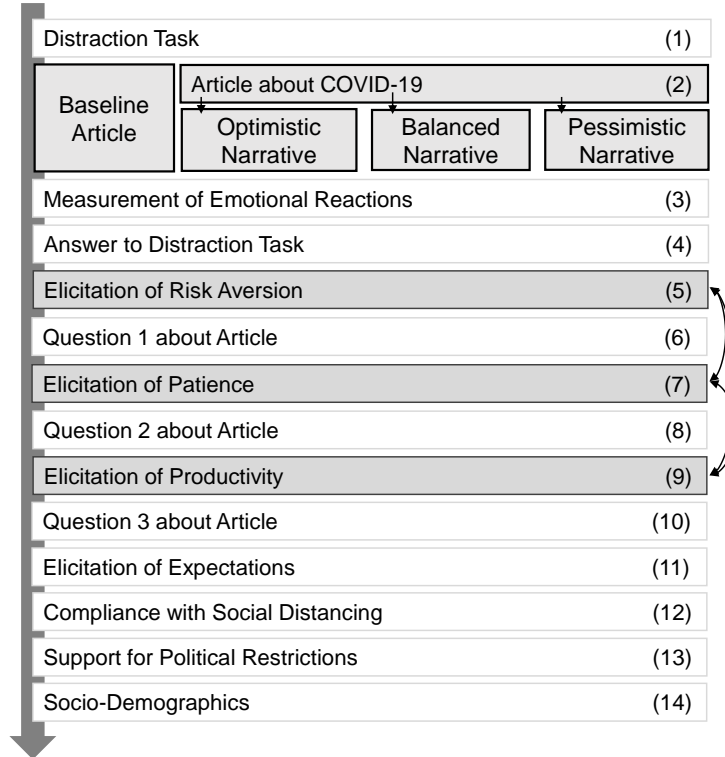
⁸You can find the pre-registration here: <https://doi.org/10.1257/rct.5795-1.0>.

⁹Transcripts of the instructions are provided in Appendix D.

¹⁰After two minutes, subjects were automatically directed to the next page. Subjects could not proceed to the next page independently.

is on the provided article. We study four different articles: containing either an optimistic, a pessimistic or a balanced narrative about the COVID-19 pandemic or a science related baseline article not related to COVID-19. Each subject saw and was aware of only one article. See Section 2.3 for details on the manipulation.

Figure 1: Experimental Procedures - Overview



Notes: Figure 1 gives an overview of the experimental procedures. The numbers on the right side refer to the different stages of the experiment. The manipulation and the main outcomes are shaded in grey. The order of the elicitation of risk aversion, patience and productivity was randomized.

Immediately after the manipulation, we measured the emotional reactions of subjects (3). Next, we elicited our behavioral outcomes risk aversion (5), patience (7) and productivity (9)¹¹ in three decision blocks. At the end of the experiment, one of the three decision blocks was randomly drawn for each subject and became payoff relevant. We randomized the order of the three behavioral outcomes to be able to control for order effects. After the behavioral

¹¹We included productivity as a third behavioral outcome because of anecdotal reports about reduced productivity in the pandemic. Here we wanted to investigate whether pessimistic narratives impact subjects cognitive ability or motivation to focus on a short real effort task.

outcomes, we elicited subjects' forward-looking expectations for the pandemic, their personal circumstances and the stock market (11). The final part of the experiment included questions on compliance with social distancing (12) and on support for political restrictions (13). The experiment concluded with collecting the socio-demographic characteristics of subjects (14).

At the very beginning of the experiment, we implemented a distraction task to preempt concerns about experimenter demand effects. Subjects were asked to memorize two phone numbers (1) which they had to recall (4) before we elicited the main outcomes. In case some subjects did try to anticipate what our study was about, this task (together with the text memory task in our manipulation) should have created the impression that this study was most likely about working memory ability. This design feature was implemented even though experimenter demand effects have been shown to be only a modest concern in a variety of settings (deQuidt, Haushofer, and Roth, 2018).

2.3 Manipulation

Participants were randomly assigned to one of four conditions: subjects in the three treatment conditions read an article that provides an optimistic, a balanced or a pessimistic narrative about the COVID-19 pandemic in Germany; subjects in the baseline condition read a science-related article not related to COVID-19. As far as possible, all articles were designed symmetrically regarding their content, length, structure and grammatical style (see Appendix A.2 for the transcripts).

All narratives about COVID-19 follow a common structure (see Appendix Figure A2 for details). They make predictions about the future course of the pandemic and describe the anticipated impacts of the pandemic on the health care system and the economy. The optimistic narrative emphasises the recent success in containing daily new infections and predicts that this trend is going to continue. It further raises the expectation that the economy will quickly recover after the political restrictions have been relaxed. The pessimistic narrative instead warns about a second wave of infections which will prove much more deadly than the first one. It also raises the concern that a subsequent second lockdown will prove disastrous to the economy. The balanced narrative combines elements of the optimistic and the pessimistic narrative. The baseline article covers a story about outer space, structured in an analogous fashion.

All articles in the three treatment conditions are complemented with a figure that sketches the future development of daily new infections in line with the respective narrative. Such

epidemic curves have been widely used in news reporting in countries around the world to visualize the outbreak of the pandemic. The baseline article uses a similar figure on the attempts to sail in outer space.

2.4 Behavioral Outcomes

Risk aversion is measured by eliciting the certainty equivalent for a lottery that pays €4 with 50% probability and €0 with 50%. The certainty equivalent is elicited using the staircase method for risk preferences introduced by Falk et al. (2018). Subjects face five consecutive choices between a fixed payment and a lottery that pays €4 with 50% probability and €0 with 50% probability. The amount offered as fixed payment changes from decision to decision: if a subject chose the lottery (the safe payment), the safe payment offered in the next round is increased (reduced). The game tree is provided in Appendix Figure A3. One of the five decisions is randomly chosen for payment. The certainty equivalent can take 32 values ranging from €0.10 to €3.20.

Patience is measured with the equivalent staircase method for time preferences (Falk et al., 2018). The outcome variable for patience is the future value. The future value indicates the point at which subjects are indifferent between receiving €2 today and receiving a payment of the future value in 60 days. This time subjects take five consecutive decisions between a payment of €2 today and a payment in 60 days. The payment in 60 days changes from decision to decision: if a subject chose the payment today (in 60 days), the payment in 60 days offered in the next decision round is increased (reduced). The game tree is provided in Appendix Figure A4. Again, one of the five decisions is randomly chosen for payment. The future value elicited in this game can take 32 values ranging from €2.08 to €4.56.

We measured risk aversion and patience with the staircase method because it allows to elicit fine-grained certainty equivalents and future values in a much more time efficient way compared to classical Multiple Price Lists. Further, it prevents inconsistent choices (multiple switching points) by design and it does not require extensive instructions.¹²

Productivity is measured in a real-effort task: subjects have to count the digit “1” in lines

¹²In contrast to the Dual Multiple Price Lists of Andersen et al. (2008) and the Convex Time Budget method of Andreoni and Sprenger (2012) the staircase method does not allow for the straight-forward estimation of parameters in the utility function, which is however not necessary to answer the research question at hand.

of twelve to fourteen symbols. Subjects have two minutes time to complete as many lines as possible (up to 37). For each correct line subjects are paid €0.10. The design of the task is inspired by a concentration test.

2.5 Expectations and Emotions

Expectations After the elicitation of the behavioral outcomes, we elicit incentivized 2-month forward-looking expectations on the German stock market index DAX, the total number of COVID-19 cases and the total number of deaths related to COVID-19. To anchor our subjects’ estimates, we provide official data for each of these variables from the previous day. We incentivize the expectations in the following way: for each variable three subjects are randomly selected and are paid depending on the accuracy of their expectations (with up to €20).¹³ Each subject receives at most a payoff for one of the expectations. This incentive scheme has two noteworthy properties: (i) subjects cannot hedge risk between expectations and (ii) the game is non-strategic (the expected payoff is independent from the expectations of the other subjects). As a complementary qualitative measure of an individual’s general sense of optimism we ask subjects to indicate how they expect their personal circumstances to develop over the next weeks on an 11-point Likert scale from (-5 “very negative” to +5 “very positive”).

Emotions Immediately after our manipulation, subjects report their current emotional state. We measure affect with 6-items of the i-PANAS-sf scale (Thompson, 2007), which is widely used in psychological research. We elicit three items for positive affect (attentive, determined, inspired) and three items for negative affect (upset, afraid, nervous). Subjects are asked to state the intensity with which they currently experience the respective emotion on a 5-point Likert scale (1 “not at all” to 5 “very much”) for each of the six items. Affect is then constructed as the sum of the positive items minus the negative items.

2.6 Sample Description and Randomization Check

Of the 425 participants that started the experiment only two did not complete it. Hence, there was no considerable attrition. A table of sample characteristics by treatment condition is provided in Appendix Table B1. We present tests for the pairwise balance of covariates between any two treatment conditions in Appendix Table B2. For each covariate we conduct

¹³We did not disclose the exact payment formula in more detail to subjects.

either t-tests or Chi² tests. Among the 21 tests conducted between the optimistic, pessimistic and balanced treatment, just one test is significant at the 5% level, as should be expected by chance. The imbalance stems from a slightly higher share of non-students in the optimistic treatment (11.4%) compared to the pessimistic treatment (3.8%). Note that this slight imbalance can only be due to chance as we randomized by computer and there was close to no attrition. We address this imbalance as follows: in the main part of this paper, we present results for the full sample while controlling for our set of covariates including student status. As a robustness check, we show in Appendix C that all results reproduce in a restricted sample of N=396 subjects that excludes all non-students.

2.7 Empirical Strategy

We test for treatment effects by comparing outcomes in the optimistic and the pessimistic treatment as the treatment effects are expected to be largest between these two conditions. The balanced treatment provides a critical consistency check for the hypothesis that the degree of optimism of the narratives drives the treatment effects. If the treatment effects are driven by the degree of optimism of the narratives, then we should observe that the means of the outcomes in the balanced treatment lie between the means in the optimistic and the pessimistic treatments. The baseline condition is included in the design to provide an article that is unrelated to COVID-19 as another benchmark.

3 Results

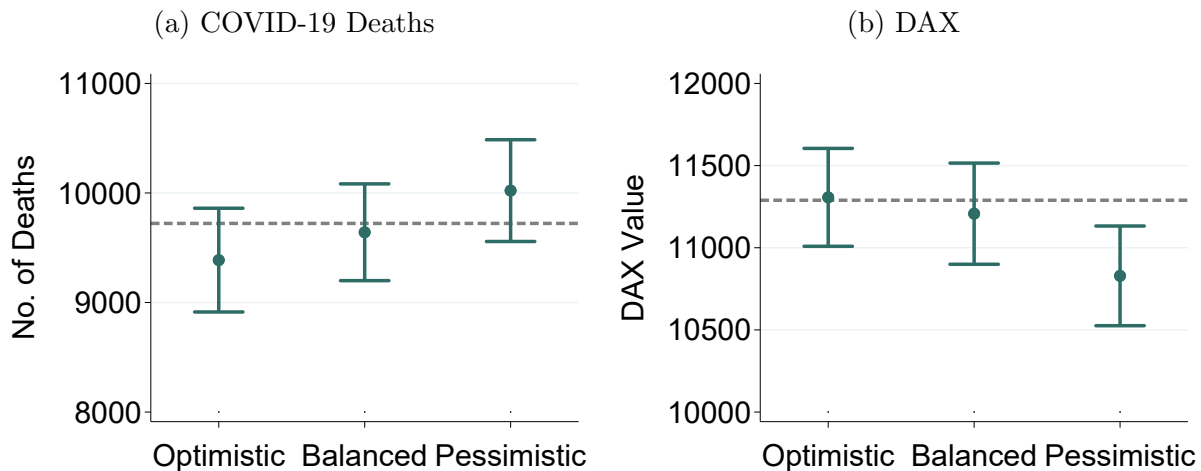
We present our results in the following order: first, we present the effects of narratives on expectations, a central outcome of interest in the literature on information provision (see Haaland, Roth, and Wohlfart, forthcoming) that is (in terms of content) closely related to the provided narratives. We then extend the analysis to our behavioral outcomes which are not directly related to the narratives' content.

3.1 Narratives Impact Expectations

Expectations Figure 2 depicts the mean forward-looking expectations of subjects for (a) the total number of deaths related to COVID-19 in Germany and (b) the German stock market index DAX and by treatment condition. The dashed line in Figure 2 indicates the mean in the baseline condition. Across both measures, subjects in the pessimistic treatment

are more pessimistic compared to the optimistic treatment. Subjects in the pessimistic treatment expect 634 more people to have died related to COVID-19 within the next two months (+6.8%). They also expect the DAX to close on average 478 points lower in two months than subjects in the optimistic treatment (-4.2%).

Figure 2: Treatment Effects of Narratives on Expectations



Notes: Figure 2 shows means and corresponding 95% confidence intervals for (a) COVID-19 related deaths and (b) expectations about the stock market index DAX in the three treatment conditions. The dashed line indicates the mean in the baseline condition. Based on OLS estimates reported in Appendix Table B8.

Mann-Whitney U tests confirm that the differences in means between the optimistic and pessimistic treatment are significantly different from zero for deaths related to COVID-19 ($p=0.024$) and DAX expectations ($p=0.025$).¹⁴ Corresponding OLS estimates are presented in Appendix Table B8.

Result 1: When confronted with a more pessimistic narrative about the COVID-19 pandemic, subjects hold more pessimistic expectations about the pandemic and the stock market.

¹⁴Mann-Whitney U tests are our preferred test for treatment effects on expectations as they are robust to outliers. The data on expectations for COVID-19 cases turn out to be more noisy than the other measures as they contain a number of implausible answers (see Appendix B.6 for details). For this measure there is no significant difference between the optimistic and pessimistic treatment (Mann-Whitney U test: $p=0.170$).

3.2 Narratives Impact Behavioral Outcomes

Risk Aversion Figure 3a shows the average certainty equivalent elicited for the lottery (50% €0, 50% €4) by treatment condition. The average certainty equivalent in the pessimistic treatment is substantially lower than in the optimistic treatment (€1.71 in pessimistic versus €2.00 in optimistic). On average, subjects in the optimistic treatment act risk neutral, so that they maximize expected earnings, while subjects in the pessimistic treatment show a considerable level of risk aversion. Figure 3b depicts histograms of the certainty equivalent in the optimistic treatment relative to the pessimistic treatment.

In Table 1 we provide our main regression analyses. In column (1) we report the result of an OLS regression that regresses the certainty equivalent on the treatment dummies with the optimistic treatment serving as the reference group. In column (2) we additionally control for our set of covariates. Column (1) shows that the treatment effect on risk aversion (0.41 standard deviations) is highly significant ($p = 0.002$). The coefficient of the pessimistic treatment dummy barely changes and remains highly significant when adding controls in column (2) ($p = 0.004$).

Patience Figure 3c depicts the mean future value of a €2 payment today by treatment condition. A higher future value implies a higher individual discount rate and hence less patient behavior (compare Andreoni and Sprenger, 2015, footnote 4). Subjects in the pessimistic treatment act much less patient than in the optimistic treatment (future value of €3.14 versus €2.85). Across treatment conditions, subjects show sizeable individual discount rates over a rather short time period of two months. Such high individual discount rates are however common in the literature using similar elicitation procedures (Frederick, Loewenstein, and O'Donoghue, 2002; Ericson and Laibson, 2019). Figure 3d depicts histograms of the future value in the optimistic treatment relative to the pessimistic treatment.

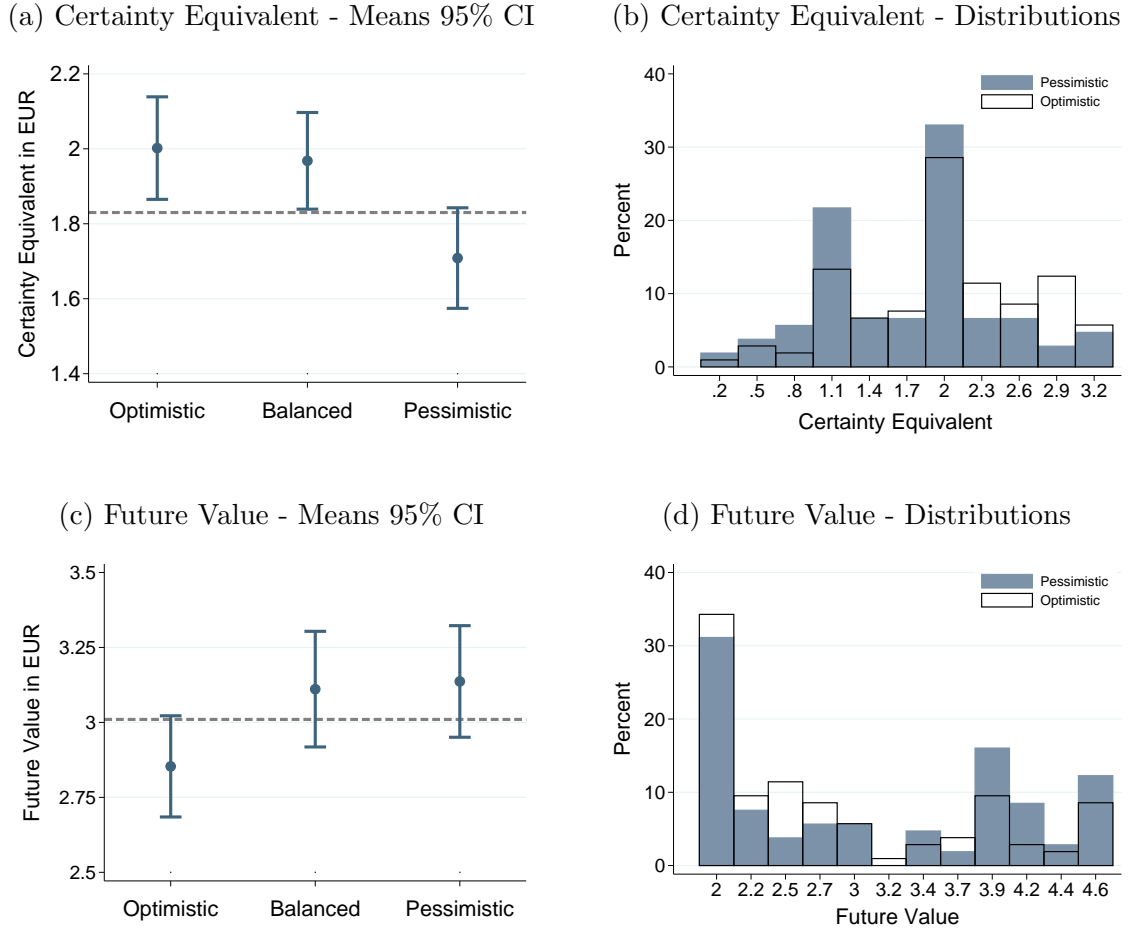
In columns (3) and (4) in Table 1 we present equivalent regressions to columns (1) and (2) with the future value as the dependent variable. In column (3) the treatment effect on patience (0.31 standard deviations) is significant at the 5 percent level ($p = 0.030$). It remains significant when adding controls in column (4) ($p = 0.026$). Consistent with the hypothesis that the degree of optimism of the narratives causes the treatment effects, the means in the balanced and baseline treatment lie in between the optimistic and the pessimistic treatment.

Result 2: When confronted with a more pessimistic narrative about the COVID-19 pandemic, subjects behave more risk averse and less patient.

Productivity Regarding the productivity in our real-effort task we find that the mean of correctly solved tasks does not differ between the optimistic treatment and the pessimistic treatment (optimistic: 16.2 versus pessimistic 16.3; t-test, $p=0.896$). Moreover, coefficients and standard errors of the treatment indicators presented in columns (5) and (6) in Table 1 indicate that there are no significant differences between any two treatment conditions.

Result 3: Exposure to narratives about the COVID-19 pandemic does not affect productivity in a short real-effort task.

Figure 3: Treatment Effects on Risk Aversion and Patience



Notes: Figure (a) and (c) display the means and 95% confidence intervals by treatment condition. The dashed line in Figure (a) and (c) indicate the mean in the baseline condition. Figure (b) display histograms of the certainty equivalent and Figure (d) of the future value in the optimistic and pessimistic treatment.

Table 1: OLS Estimates - Average Treatment Effects on Behavioral Outcomes

	Certainty Equivalent		Future Value		Productivity	
	(1)	(2)	(3)	(4)	(5)	(6)
Pessimistic	-0.29*** (0.10)	-0.29*** (0.10)	0.28** (0.13)	0.30** (0.13)	-0.07 (0.53)	0.23 (0.52)
Balanced	-0.03 (0.10)	-0.03 (0.10)	0.26** (0.13)	0.26** (0.13)	0.52 (0.53)	0.57 (0.52)
Baseline	-0.18* (0.10)	-0.17* (0.10)	0.16 (0.13)	0.21 (0.13)	-0.03 (0.53)	0.10 (0.52)
Age		0.00 (0.01)		0.00 (0.01)		-0.14*** (0.04)
Female		-0.06 (0.07)		-0.02 (0.10)		-0.40 (0.39)
Income		0.00 (0.00)		-0.00* (0.00)		0.00 (0.00)
Education		-0.07 (0.05)		0.09 (0.07)		-0.07 (0.27)
Econ Student		-0.07 (0.08)		-0.21** (0.10)		0.17 (0.40)
No Student		-0.06 (0.16)		-0.00 (0.21)		1.88** (0.84)
Political Orientation		-0.00 (0.02)		0.02 (0.03)		-0.09 (0.12)
Risk Group COVID-19		-0.02 (0.12)		0.06 (0.16)		-1.89*** (0.63)
Constant	2.00*** (0.07)	2.05*** (0.19)	2.85*** (0.09)	3.02*** (0.25)	16.30*** (0.37)	19.40*** (0.99)
Observations	423	423	423	423	423	423
R-squared	0.03	0.04	0.01	0.04	0.00	0.08
Initial p-values:						
Pessimistic	$p = 0.002$	$p = 0.004$	$p = 0.030$	$p = 0.026$	$p = 0.896$	$p = 0.664$
Adjusted p-values (Romano-Wolf):						
Pessimistic	$p = 0.009$	$p = 0.013$	$p = 0.054$	$p = 0.045$	$p = 0.891$	$p = 0.662$

Notes: Table reports OLS estimates with standard errors in parentheses. The optimistic treatment is the reference group. Adjusted p-values for multiple hypothesis testing are calculated using the Romano-Wolf step-down procedure as described in Clarke, Romano, and Wolf (2019). We control for the fact that we test the same treatment on three behavioral outcomes. The adjusted p-values are separately derived for the specification without covariates (columns (1), (3) and (5)) and for the specification with covariates (columns (2), (4) and (6)) using 5000 bootstrap replications. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Robustness In Table 1 we provide p-values adjusted for multiple hypothesis testing as we test the same treatment on three behavioral outcomes. In Appendix Table B3 we further show with logit models that the treatment effects on risk aversion and patience can already be detected when focusing the analysis on the first of the five decisions in the staircase method. As a further robustness check, we present tobit models that account for censoring of the outcome variables in Appendix Table B3. To complete our robustness analysis, we show in Appendix Table B4 that there are no significant order effects and that there is no significant heterogeneity in treatment effects depending on the order of elicitation.

3.3 Additional Analyses

Behavioral Channel Another noteworthy reaction to narratives about the COVID-19 pandemic is that subjects in the pessimistic treatment show lower optimism about life (t-test, $p = 0.007$) and lower affect than subjects in the optimistic treatment (t-test, $p=0.004$). The change in affect is driven by subjects feeling much more afraid (t-test, $p<0.001$), upset (t-test, $p<0.001$) and nervous (t-test, $p=0.004$) after exposure to the pessimistic narrative. See Appendix B.7 for figures and OLS estimates. We regard these reactions in optimistic/pessimistic mindsets and emotions as plausible channels underlying our treatment effects, especially for the outcomes that are not directly related to the content of the narratives. We look at correlations in our data set to discuss this claim.

First, an individuals' general sense of optimism is significantly correlated with expectations and emotions. Further, many of our expectation measures are strongly correlated with emotions (see Appendix Table B11).

To provide an empirical analysis of the channel on risk aversion and patience, we present regressions in Appendix Table B12 and Table B13. We regress the behavioral outcomes separately on each potential mediator while controlling for our set of socio-demographic variables. We find that subjects who feel more upset and afraid tend to act significantly more impatient (see column (2) and (3) in Table B12). The direction of the association between feeling afraid and risk aversion, while not significant ($p=0.133$), is in line with Cohn et al. (2015), that is, more afraid subjects tend to show a higher level of risk aversion. Hence, our data can be seen as in line with the literature showing that emotional reactions can induce changes in risk aversion and patience (Cohn et al., 2015; Guiso, Sapienza, and Zingales, 2018; Ifcher and Zarghamee, 2011). An individual's general sense of optimism is also negatively correlated with risk aversion, suggesting that optimistic and pessimistic

mindsets could also underlie the observed treatment effects.¹⁵

Subgroup Analysis Overall we find little evidence that the treatment effects of our manipulation differ systematically across socio-demographic subgroups by gender, age, education or income (see Appendix Table B5 and Table B6). One informative observation that supports the external validity of our findings is that the behavioral effects of optimistic and pessimistic narratives on financial decision making persist for economics students (38.3% of the sample), a subgroup with very high financial education. Contrary to what one might expect, the behavioral effects of narratives are, if anything, more pronounced among economics students (see Appendix Table B6).

We further observe that subjects with a high level of news consumption prior to the experiment update their expectations about the DAX to a smaller degree than subjects with a low level of news consumption (see Appendix Table B9). We do however not find such a pattern for the behavioral outcomes (see Appendix Table B6). Hence the behavioral effects of narratives on risk aversion and patience do not seem to decrease in the level of previous news exposure.

4 Discussion

4.1 Relevance and External Validity

We should certainly discuss how relevant the effects of narratives on financial behavior are outside of our controlled experimental context. We believe that numerous arguments support the view that the impacts of narratives documented in this paper are economically relevant.

First, our results show that narratives impact fundamental determinants of financial behavior. Forward-looking expectations are key variables in central models of investor behavior (Lucas and Sargent, 1981; Sims, 2003) and recent information provision experiments have confirmed their causal impact on financial behavior (Bailey et al., 2019; Roth and Wohlfart, 2020; Laudenbach, Weber, and Wohlfart, 2021; Breunig et al., 2021). As almost all financial decisions involve risk and intertemporal trade-offs, changes in risk aversion and pa-

¹⁵Expectations are not correlated with risk aversion. Expectations about the DAX and about COVID-19 deaths are weakly correlated with patience (see column (6) and (7) in Table B12). If these correlations with patience were however causal relationships, then the treatment effects on expectations would actually bias against the treatment effect on patience. Hence, the treatment effects on risk aversion and patience cannot be well explained by a change in these forward-looking expectations.

tience should impact a wide variety of financial behaviors from portfolio choices, to savings decisions and insurance choices.

Second, the behavioral effects of narratives are at least persistent in the short-term, as we do not find that performing a mentally challenging two-minute real-effort task (our productivity measure) prior to the elicitation of risk aversion and patience reduces treatment effects (see Appendix Table B4). Given that people today are exposed to narratives at high frequency via the internet and social media, even short-term effects on risk aversion and patience would imply meaningful impacts on a wide range of financial behaviors.

Third, the effects identified in this paper likely interact and could amplify each other as more pessimistic expectations, more risk aversion and less patience could all, for instance, reduce investments in the stock market.

Last, our experiment did take place in the very same setting in which people today frequently consume the news and take a large share of their financial decisions: at home in front of their computers. We hence believe that the effects observed in our experiment translate comparatively well into behavior outside of our experimental context and are economically relevant.

4.2 Should Politicians Provide Narratives?

A pressing question to ask, based on our results, is whether politicians should provide narratives about the COVID-19 pandemic given their impacts on financial behavior. We would like to stress that our results do not allow to draw simple conclusions about this normative question. Most importantly, one should not infer from our results that optimistic narratives about COVID-19 are generally “good” for the economy and financial markets, while pessimistic narratives are “bad”. Such an assessment would in the first place require the definition of an optimal level of risk aversion, patience and optimism in society, which seems hard to justify based on existing economic research.

A fundamental argument against the use of narratives as an instrument of persuasive communication is their potential to distort household decision making with the consequence that households take sub-optimal investment, savings and consumption decisions.

What one can further infer from our empirical results is that pessimistic narratives about COVID-19 cause negative emotional reactions in subjects which can be seen as being directly utility relevant. These psychological costs of pessimistic narratives imposed on citizens would have to be offset by an increase in socially desirable behavior to justify their use based on

utilitarian welfare arguments. Arguably, increasing compliance with social distancing and increasing support for restrictive policies have been two of the main motivations for politicians to spread pessimistic narratives about COVID-19. While not the focus of this paper, we also elicit these two outcomes with survey questions.¹⁶ Subjects who are exposed to the pessimistic narrative as compared to the optimistic narrative report on average slightly higher support for restrictive policies, but lower levels of compliance. Both differences in means between the optimistic and pessimistic treatment are however not statistically significant (policy support: t-test, $p = 0.493$; compliance: t-test, $p = 0.155$, see also Appendix B.8). While pessimistic narratives might increase support for restrictive policies to some politically meaningful degree, our findings at least suggest that pessimistic narratives are not necessarily successful in increasing compliance with social distancing.

5 Conclusion

In this paper we provide experimental evidence that optimistic and pessimistic narratives about the COVID-19 pandemic have severe - potentially unintended - impacts on fundamental determinants of financial behavior. We show that narratives can impact financial behavior through first, changes in forward-looking expectations that are related to the narratives' content, but second also through behavioral effects on risk taking and intertemporal decision making that are not directly related. Identifying these mechanisms improves our understanding of how politicians and the media can influence economic behavior.

In this pandemic narratives have been widely used by politicians as a tool of persuasive communication. One direct policy implication of our study is that politicians who use narratives to steer the health behavior of citizens should be aware of their collateral effects on financial behavior. Many optimistic and pessimistic narratives about COVID-19 have also been shared by other opinion leaders, like scientists and journalists, and have spread through social networks. Based on our results, these narratives seem to have influenced the financial behavior of millions of households. Observing how narratives spread in networks and how they influence behavior outside experimental contexts seem important next steps for future research.

Another important area for future research is to investigate the limits and preconditions

¹⁶Specifically, we asked for intentions to comply with five social distancing measures in the days after the experiment. Also, we asked subjects whether the political restrictions to contain the spread of COVID-19 should rather be loosened or tightened.

for the persuasiveness of narratives. For example, are narratives persuasive even if they are not justified based on the underlying fundamentals? What role does the relationship between the sender of narratives and their audience play? Are narratives about cryptocurrencies, inflation or the housing market as impactful as narratives about the COVID-19 pandemic? These seem to be just some of many important questions for future research to gain a comprehensive understanding of how narratives impact economic behavior.

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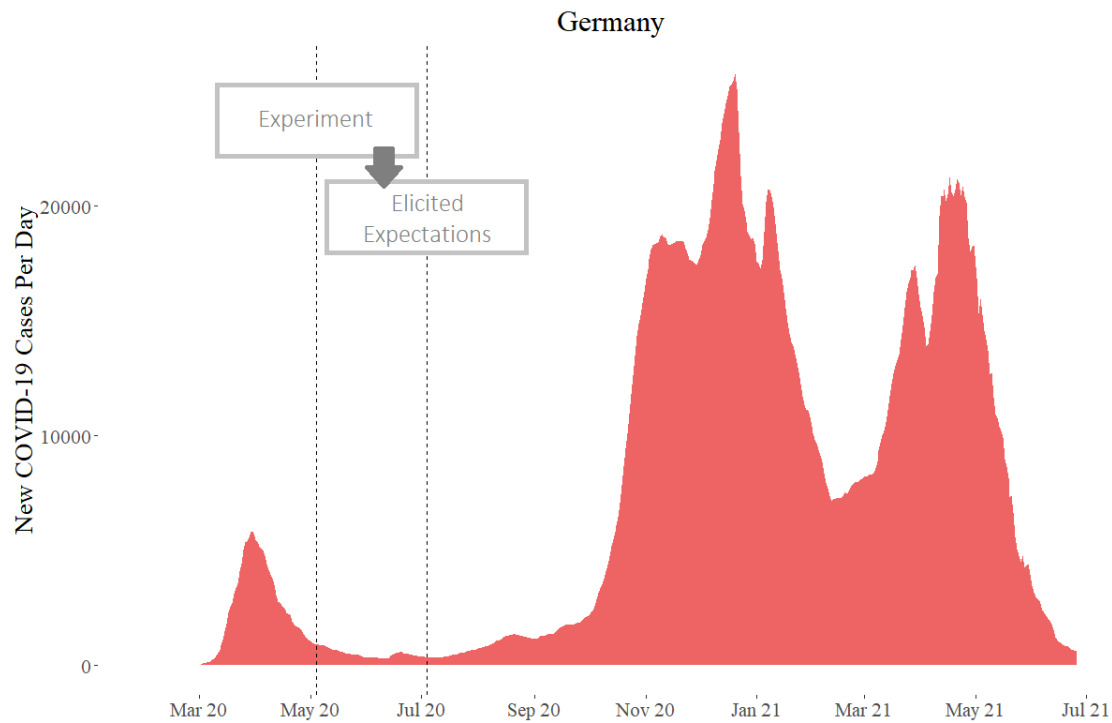
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Online Appendix

A Supplementary Materials

A.1 Timeline of the COVID-19 Pandemic in Germany

Figure A1: Daily New Infections in Germany



Notes: The graph illustrates the numbers of daily new infections in Germany reported to the Robert Koch Institute from March 2020 to July 2021. Our experiment was conducted on May 4th 2020. Participants had to state their expectations about the course of the pandemic until July 3rd 2020.

A.2 Manipulation

A.2.1 Structure of Narratives

Figure A2 illustrates the common structure of all narratives about COVID-19 provided as our manipulation. All narratives consist of five paragraphs covering the same aspects of the COVID-19 pandemic as shown in Figure A2. The numbers on the right side of Figure A2 refer to the sentences within the respective paragraph. The corresponding sentences can be found in the transcripts of the narratives provided in sections A.2.2 to A.2.4.

Figure A2: Structure of Narratives

Paragraph 1	Implications of “Opening Up”	(1.1 - 1.2)
	Statement of Chancellor Merkel	(1.3)
Paragraph 2	Assessment of the Pandemic	(2.1 - 2.2)
Paragraph 3	Impacts on the Health Care System	(3.1 - 3.3)
Paragraph 4	Impacts on the Economy	(4.1 - 4.3)
Paragraph 5	Current State of Research	(5.1)
	Expectation about Vaccine	(5.2)

Notes: This figure depicts the common structure of all narratives about COVID-19 used as our experimental manipulation. The numbers on the right side refer to the sentences within the respective paragraph.

The information provided in the narratives was spread in this or in a very similar way in news articles and in public communication in the weeks prior to our experiment. The statements of chancellor Angela Merkel were made during a press conference on 20th April 2020.¹⁷

The baseline text followed a similar structure. In the baseline text, a quote of Galileo Galilei was used instead of a statement of Angela Merkel and a story about outer space was provided instead of a narrative about the COVID-19 pandemic. The transcript of the baseline text is available in section A.2.5.

¹⁷The transcript of the press conference is available under <https://www.bundestkanzlerin.de/bkin-de/aktuelles/pressekonferenz-von-bundestkanzlerin-merkel-1745362> (accessed on April 27th, 2021)

A.2.2 Transcript Optimistic Narrative

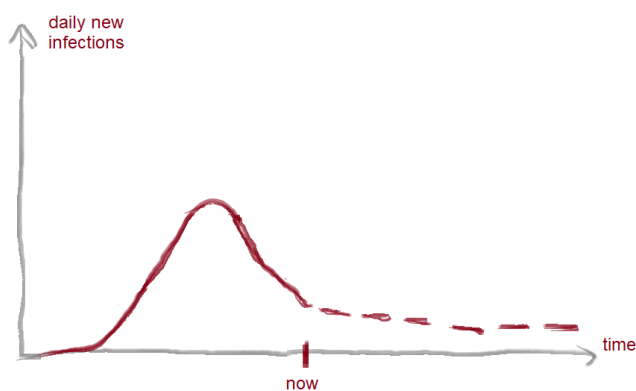
In Germany the measures to contain the spread of the coronavirus are currently being relaxed. (1.1) Now more and more people move around in public and many shops are reopening. (1.2) Due to its discipline, the population has made great achievements in the last weeks, chancellor Angela Merkel praised in a speech. (1.3)

Many of those currently infected with the coronavirus are expected to recover within the next days. By now, many have already recovered. (2.1) Day by day, the number of new infections decreases compared to previous weeks. This trend is expected to continue. (2.2)

So far the German health care system has not come close to reaching its capacity limit. (3.1) In comparison to Italy or Spain, the situation in Germany has almost always been under control. (3.2) Many physicians in Germany were even less occupied than usual as a lot of non-urgent interventions have been postponed. (3.3)

Due to the relaxation of restrictions, the economy picks up again. (4.1) Customers go shopping more frequently, which stimulates sales for many business. Some people are even starting to make plans for summer holidays. (4.2) It seems that all the effort of the last weeks eventually pays off. (4.3)

Meanwhile scientists around the world are constantly working on better understanding the novel coronavirus. (5.1) A vaccine might soon be found. (5.2)



Note: Narratives were provided in German and did not contain the numbers in gray which are included as a reference to the common structure of all narratives (see Figure A2).

A.2.3 Transcript Pessimistic Narrative

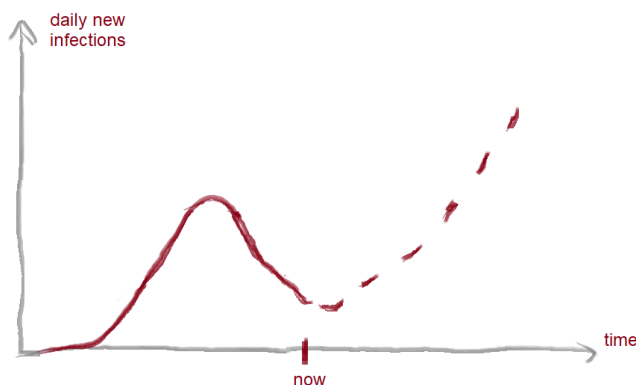
In Germany the measures to contain the spread of the coronavirus might be relaxed too soon. (1.1) If more and more people move around in public, a second wave of infections becomes likely. (1.2) The population should not for a second lull itself into a false sense of security, chancellor Angela Merkel warned in a speech. (1.3)

It is expected that in a second wave of infections significantly more elderly will be infected with the coronavirus. (1.2) A second wave would thus turn out to be a lot deadlier. (2.2)

In a second wave the German health care system might collapse. (3.1) Germany could then face conditions like in Italy or Spain, where the situation spiraled out of control. (3.2) Physicians had to decide which patients to treat and whom to let die – the so-called triage. (3.3)

If the virus starts to spread faster and faster again, the economy faces the threat of a second, likely more severe, shutdown. (4.1) A second shutdown would mean final bankruptcy for a lot of businesses. (4.2) In that case all the effort of the last weeks would be lost. (4.3)

Meanwhile, many fundamental questions about the novel coronavirus remain unanswered. So far the infection rate and the most common transmission paths have not been identified. (5.1) Most likely it will take until next year until a vaccine is available. (5.2)



Note: Narratives were provided in German and did not contain the numbers in gray which are included as a reference to the common structure of all narratives (see Figure A2).

A.2.4 Transcript Balanced Narrative

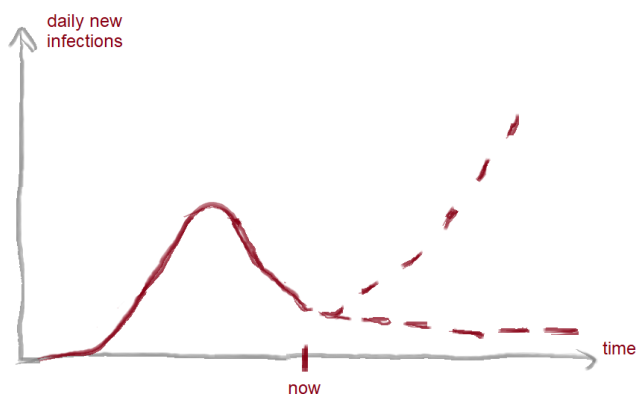
In Germany the restrictive policies to contain the spread of the coronavirus are slowly being relaxed. (1.1) That is good news for people and the economy, but increases the risk of a second wave of infections. (1.2) The population has made great achievements, but should not lull itself into a false sense of security, chancellor Angela Merkel said in a speech. (1.3)

Currently, daily new infections are decreasing. In some regions and age groups there have yet been almost no deaths. (2.1) A second wave of infections could, however, turn out to be a lot deadlier. (2.2)

So far the German health care system has not reached its capacity limit. (3.1) In comparison to Italy and Spain, the situation in Germany has been relatively well under control. (3.2) In some cases physicians in Italy and Spain had to decide whom to treat and whom to let die. (3.3)

Due to the relaxation of restrictions, customers go shopping more frequently. This is good for many businesses. (4.1) A second shutdown could, however, be more severe than the first one. A second shutdown could mean final bankruptcy for a number of businesses. (4.2) Therefore, it remains to be seen if the efforts of the last weeks will eventually pay off. (4.3)

Meanwhile scientists are constantly working on open questions regarding the novel coronavirus. (5.1) It is however hard to predict when a vaccine will be available. (5.2)



Note: Narratives were provided in German and did not contain the numbers in gray which are included as a reference to the common structure of all narratives (see Figure A2).

A.2.5 Transcript Baseline Text

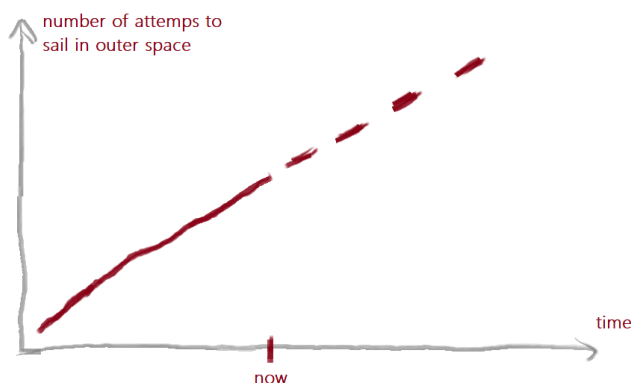
As early as in the 18th century German scientists dreamt of sailing in outer space. Already the astronomer Johannes Kepler wrote in a letter to Galileo Galilei: “Provide ships or sails that are suitable for the breeze of heaven”. This dream came true last year. A mission showed that objects in outer space can be moved only by the force of a sail.

To a layperson, such a project may seem absurd. There is no air in outer space and hence no wind to blow into an ordinary sail. But apparently it is possible to sail with solar radiation. This is made possible as there is extremely little frictional resistance in outer space.

Previously, many similar cosmic sailing projects have failed. On a recent mission, however, it worked – with the use of a very light space probe and a comparatively large sail.

This was the second time it could be shown that such a mechanical propulsion can work. If the mission continues without any problems, the efforts of the ancient thinkers might finally pay off.

Meanwhile a lot of questions about outer space remain unanswered. A mechanical propulsion that is independent of rocket engines could help lead scientists to many new insights. However, no one can predict if and when this will be the case.



Note: The text was provided in German.

A.3 Elicitation of Behavioral Outcomes

A.3.1 Risk Aversion

Risk aversion is elicited with the staircase method for risk preferences from Falk et al. (2018) with adjusted payoffs. Subjects take five consecutive decisions, each time facing the following question:

“Do you want to receive a safe payment of $\text{€}X$ or play a lottery with 50 percent chance for $\text{€}4$ and 50 percent chance for $\text{€}0$?”

- *$\text{€}X$ as safe payment.*
- *A lottery with 50% chance for $\text{€}4$ and 50% chance for $\text{€}0$.*

X is replaced with the corresponding value at each decision node in the game tree (see Figure A3). The starting value for X is 1.65. In the game tree shown in Figure A3 the action A refers to choosing the lottery, while the action B refers to choosing the safe payment of X . The value at the next decision node is then inserted as X in the subsequent question. The outcome of the game is the certainty equivalent (CE) used for analysis which can take 32 values ranging from $\text{€}0.10$ to $\text{€}3.20$.

A.3.2 Patience

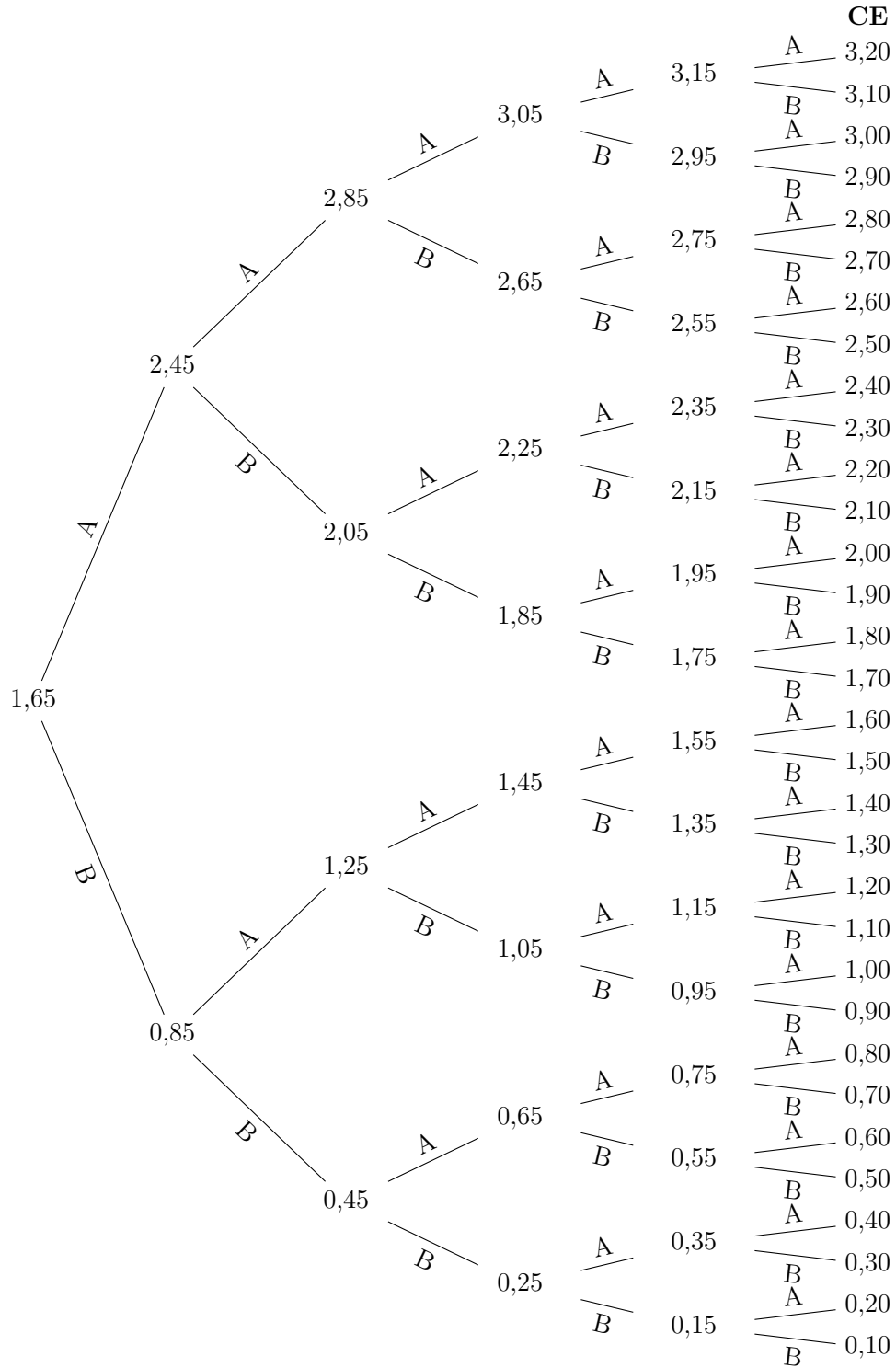
Patience is elicited with the staircase method for time preferences from Falk et al. (2018) with adjusted payoffs. Subjects take five consecutive decisions, each time facing the following question:

“Do you want to receive $\text{€}2$ euros today or $\text{€}X$ in two months?”

- *$\text{€}2$ today.*
- *$\text{€}X$ in two months.*

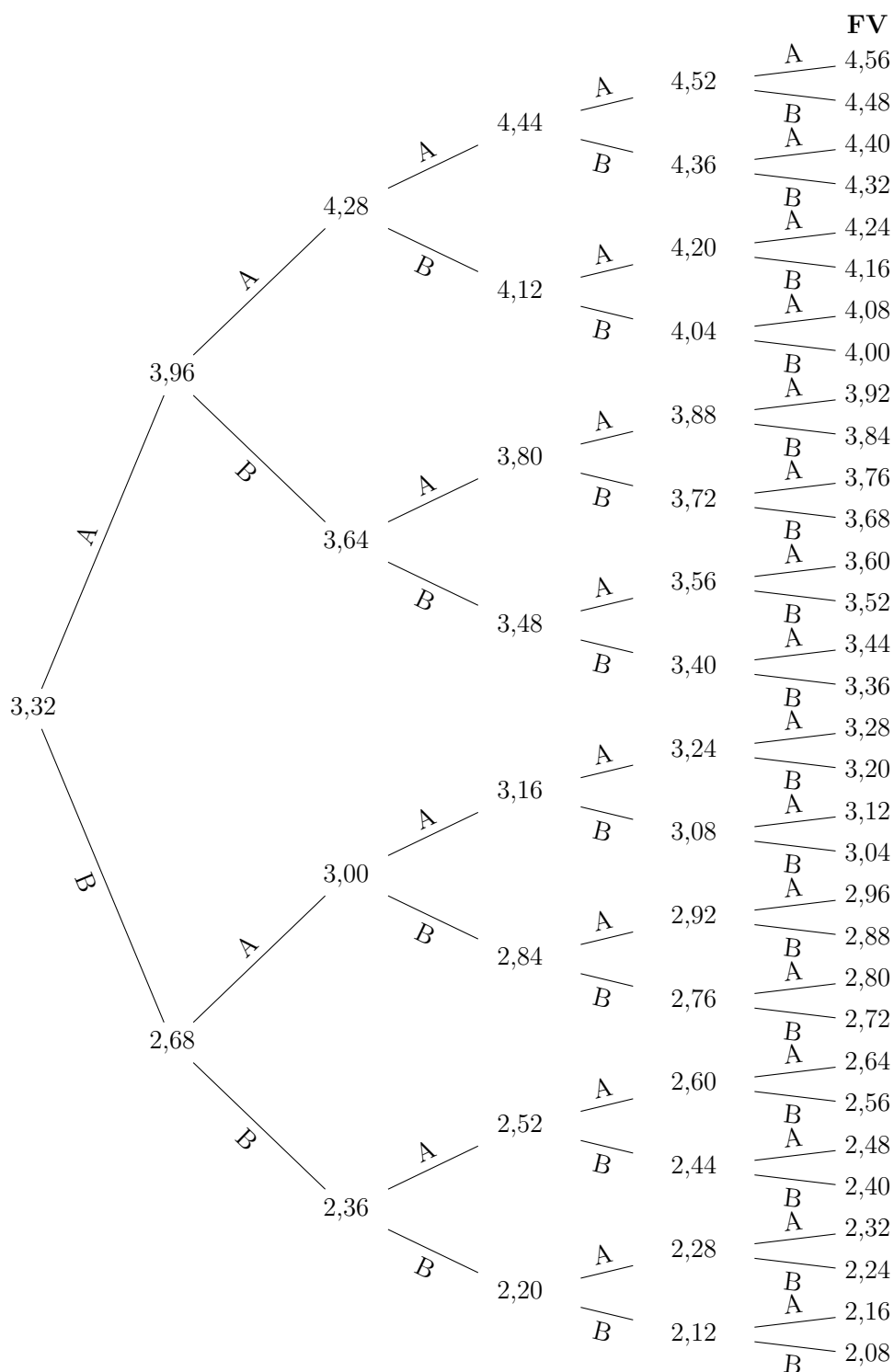
X is replaced with the corresponding value at each decision node in the game tree (see Figure A4). The starting value for X is 3.32. In the game tree shown in Figure A4 the action A refers to choosing $\text{€}2$ today while the action B refers to choosing the payment of X in two months. The value at the next decision node is then inserted as X in the subsequent question. The outcome of the game is the future value (FV) used for analysis which can take 32 values ranging from $\text{€}2.08$ to $\text{€}4.56$.

Figure A3: Game Tree of the Staircase Method For Risk Aversion



Notes: Participants take five decisions between a lottery with 50% chance for €4 and 50% chance for €0 (A) or €X euros as a safe payment (B). X is replaced with the value at each decision node with 1.65 as the initial value. The CE indicates the outcome of the game, that is the certainty equivalent used for analysis.

Figure A4: Game Tree of the Staircase Method for Patience



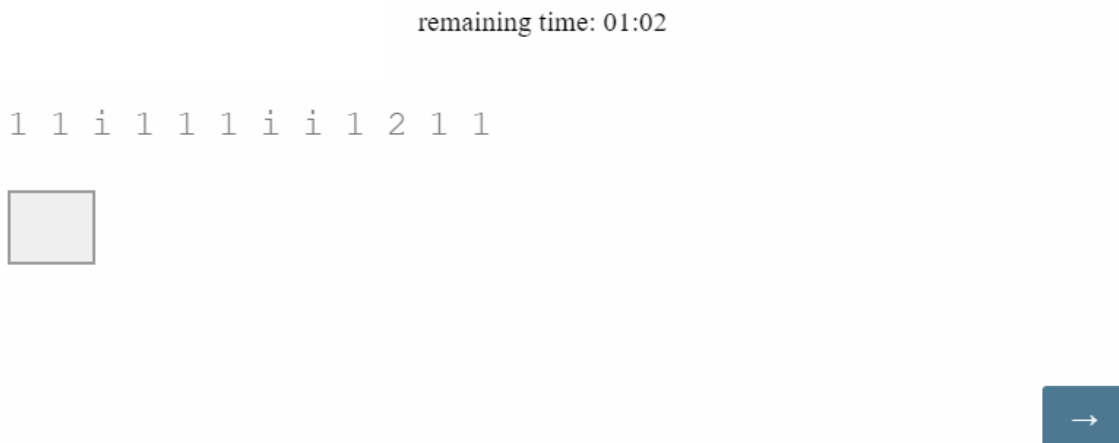
Notes: Participants take five decisions between a payment of €2 today (A) or €X in two months (B). X is replaced with the value at each decision node with 3.32 as the initial value. The FV indicates the outcome of the game, that is the future value used for analysis.

A.3.3 Productivity

Productivity is measured in a real-effort task: subjects have to count the digit “1” in lines of twelve to fourteen symbols. Subjects have two minutes time to complete as many lines as possible (up to 37). For each correct line subjects are paid €0.10. The lines were presented to participants in sequential order. Subjects could not go back to the previous line to revise their answers. After two minutes, all participants were forwarded and had to stop solving the task. The remaining time was displayed throughout the real effort task (see Figure A5).

The design of the task is inspired by a concentration test.¹⁸ We calibrated the task so that entering random numbers is not a profitable strategy. Entering random numbers would lead to just 3-4 correct answers in expectation - much less than the productivity of all subjects in a pilot study.

Figure A5: Screenshot of the Productivity Task



¹⁸See the KONT-P concentration test, <https://www.psychomeda.de/online-tests/konzentrationstest.html>

B Supplementary Tables and Figures

B.1 Sample Characteristics and Randomization Check

Table B1: Balance Table

	Optimistic (1)	Pessimistic (2)	Balanced (3)	Baseline (4)	Full Sample (5)
Age	25.81 (4.69)	26.98 (7.69)	25.93 (5.46)	26.92 (7.51)	26.41 (6.47)
Female	65.7%	62.3%	62.3%	61.3%	62.9%
Income	901.19 (448.92)	893.87 (423.21)	930.42 (483.69)	985.85 (484.68)	927.90 (460.66)
<i>Education</i>					
High School	47.6%	41.5%	41.5%	47.2%	44.4%
Bachelor	41.9%	43.4%	38.7%	34.0%	39.5%
Master	10.5%	15.1%	19.8%	18.9%	16.1%
<i>Student Status</i>					
Non Econ	57.1%	52.8%	61.3%	50%	55.3%
Econ	31.4%	43.4%	33.0%	45.3%	38.3%
No Student	11.4%	3.8%	5.7%	4.7%	6.4%
Political Orientation	0.78 (1.43)	0.74 (1.45)	0.52 (1.65)	0.33 (1.39)	0.59 (1.49)
Risk Group COVID-19	9.5%	10.4%	8.5%	9.4%	9.4%
Observations	105	106	106	106	423

Notes: Income: disposable income per month in Euros; Political Orientation: scale from right (-3) to left (3) with the German parties assigned to values as follows. AFD: -3, FDP: -2, CDU/CSU: -1, SPD: 1, Bündnis90/Grüne: 2, Die Linke: 3; unaffiliated participants were assigned the value 0; Risk Group COVID-19: belonging to a group at high risk for a severe case of COVID-19.

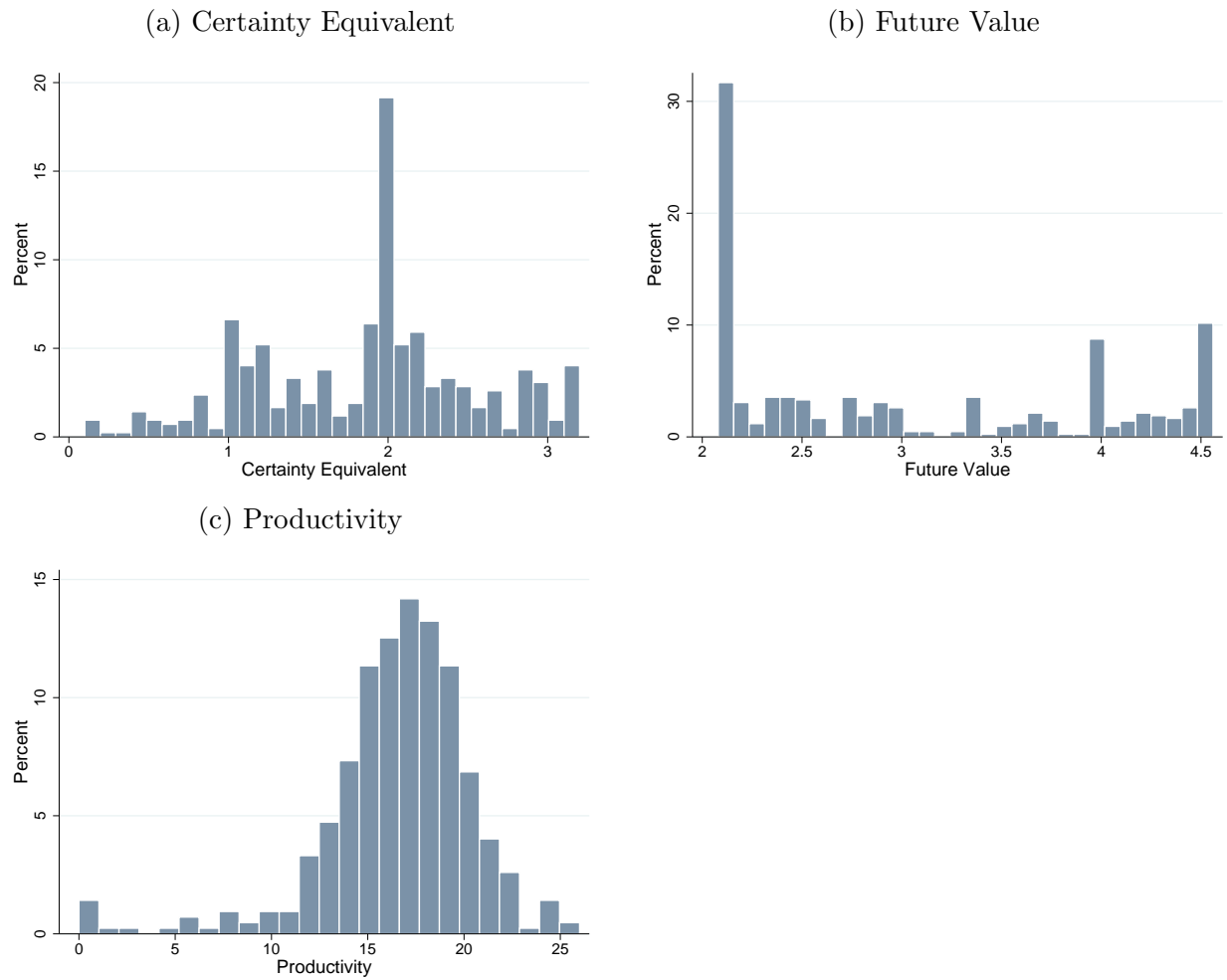
Table B2: Tests for the balance of covariates (p-values)

	Opt=Pess (1)	Opt=Bal (2)	Pess=Bal (3)	Pess=Base (4)	Opt=Base (5)	Bal=Base (6)
Age	0.183	0.859	0.254	0.957	0.198	0.273
Female	0.602	0.602	1.00	0.888	0.507	0.888
Income	0.903	0.650	0.559	0.143	0.190	0.406
Education	0.510	0.165	0.618	0.359	0.182	0.693
Student Status	0.043**	0.324	0.278	0.889	0.048**	0.188
Political Orientation	0.820	0.219	0.311	0.038**	0.021**	0.369
Risk Group COVID-19	0.836	0.793	0.638	0.818	0.982	0.810
Observations	211	211	212	211	212	212

Notes: The table reports p-values for the following tests: for age, income, and political orientation the p-values of a t-test; for female, education, student status and risk group the p-values of a Chi2-test.
*** p<0.01, ** p<0.05, * p<0.1

B.2 Distribution of Behavioral Outcomes

Figure B1: Distribution of Behavioral Outcomes



Notes: Histograms for (a) the certainty equivalent, (b) the future value and (c) productivity.

B.3 Robustness Checks - Treatment Effects on Behavioral Outcomes

Table B3: Robustness Checks - Logit and Tobit Models

	Risk Aversion				Patience			
	Chose Lottery		Certainty Equivalent		Chose €2 Today		Future Value	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pessimistic	-0.12* (0.06)	-0.13** (0.06)	-0.30*** (0.10)	-0.29*** (0.10)	0.17** (0.07)	0.19*** (0.07)	0.30** (0.14)	0.32** (0.14)
Balanced	0.01 (0.07)	0.01 (0.07)	-0.04 (0.10)	-0.03 (0.10)	0.13** (0.07)	0.14** (0.07)	0.28* (0.14)	0.28* (0.14)
Baseline	-0.06 (0.07)	-0.08 (0.07)	-0.18* (0.10)	-0.17* (0.10)	0.11 (0.07)	0.14** (0.07)	0.16 (0.14)	0.20 (0.14)
Age		0.00 (0.00)		0.00 (0.01)		-0.00 (0.00)		0.00 (0.01)
Female		-0.05 (0.05)		-0.05 (0.08)		0.00 (0.05)		-0.06 (0.11)
Income		0.00 (0.00)		0.00 (0.00)		-0.00 (0.00)		-0.00* (0.00)
Education		-0.04 (0.03)		-0.07 (0.05)		0.04 (0.04)		0.10 (0.08)
Econ Student		0.05 (0.05)		-0.09 (0.08)		-0.15*** (0.05)		-0.24** (0.11)
No Student		-0.09 (0.10)		-0.08 (0.16)		0.01 (0.11)		-0.03 (0.23)
Political Orientation		0.00 (0.02)		-0.00 (0.02)		0.01 (0.02)		0.03 (0.03)
Risk Group COVID-19		-0.10 (0.08)		-0.02 (0.12)		-0.03 (0.08)		0.07 (0.17)
Observations	423	423	423	423	423	423	423	423

Notes: Columns (1), (2), (5) and (6) report average marginal effects from logit models on the first decision in the respective elicitation procedure (see Appendix A.3). Columns (3), (4), (7) and (8) report coefficients from tobit models that account for censoring from above of the outcome variables. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

B.4 Order Effects

Table B4: Order Effects

	Certainty Equivalent		Future Value		Productivity	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Order Effects						
Order = 2	-0.01 (0.08)	-0.02 (0.08)	0.07 (0.11)	0.06 (0.11)	-0.13 (0.46)	-0.15 (0.46)
Order = 3	-0.12 (0.08)	-0.13 (0.08)	0.15 (0.11)	0.13 (0.11)	0.13 (0.45)	0.17 (0.46)
Controls	No	Yes	No	Yes	No	Yes
Observations	423	423	423	423	423	423
Panel B: Heterogeneous Treatment Effects by Order						
Pessimistic	-0.33** (0.17)	-0.28* (0.15)	0.07 (0.22)	0.22 (0.20)	-0.38 (0.95)	0.23 (0.81)
Order = 2	0.04 (0.17)	-0.02 (0.10)	-0.09 (0.22)	0.06 (0.13)	-0.19 (0.96)	-0.09 (0.52)
Order = 3	-0.31* (0.17)	-0.14 (0.10)	-0.14 (0.23)	0.13 (0.13)	-0.46 (0.90)	-0.18 (0.52)
Pessimistic X Order = 2	-0.06 (0.23)	-0.00 (0.19)	0.27 (0.31)	0.09 (0.26)	-0.36 (1.35)	-0.74 (1.06)
Pessimistic X Order = 3	0.19 (0.24)	-0.01 (0.20)	0.39 (0.32)	0.14 (0.27)	1.11 (1.28)	0.59 (1.02)
Controls	No	Yes	No	Yes	No	Yes
Observations	423	423	423	423	423	423
Panel C: Heterogeneous Treatment Effects by Order (After Productivity)						
Pessimistic	-0.35*** (0.13)	-0.34** (0.14)	0.20 (0.18)	0.29* (0.16)		
Order After RET	-0.19 (0.14)	-0.18 (0.14)	-0.06 (0.19)	0.14 (0.11)		
Pessimistic X Order After RET	0.12 (0.19)	0.10 (0.20)	0.18 (0.26)	0.01 (0.21)		
Controls	No	Yes	No	Yes		
Observations	423	423	423	423		

Notes: Table reports OLS estimates with standard errors in parentheses. In Panel B and C regressions include dummies for the balanced and baseline treatment and their interactions with the order dummies. In all panels controls include our standard set of covariates (age, female, income, education, econ student, no student, political orientation, risk group). Constants not reported. *** p<0.01, ** p<0.05, * p<0.1

B.5 Subgroup Analysis

Table B5: Heterogeneous Treatment Effects by Gender, Age and Education

	Certainty Equivalent		Future Value	
	(1)	(2)	(3)	(4)
Panel A: Gender				
Pessimistic	-0.16 (0.16)	-0.15 (0.16)	0.51** (0.22)	0.55** (0.22)
Female	0.05 (0.14)	0.03 (0.15)	0.21 (0.19)	0.16 (0.20)
Pessimistic X Female	-0.20 (0.20)	-0.21 (0.20)	-0.36 (0.27)	-0.40 (0.27)
Controls	No	Yes	No	Yes
Observations	423	423	423	423
Panel B: Age				
Pessimistic	-0.29** (0.13)	-0.29** (0.13)	0.23 (0.17)	0.26 (0.17)
Age(>25)	0.03 (0.14)	0.06 (0.14)	-0.11 (0.19)	-0.10 (0.20)
Pessimistic X Age(>25)	0.00 (0.20)	0.00 (0.20)	0.14 (0.27)	0.10 (0.27)
Controls	No	Yes	No	Yes
Observations	423	423	423	423
Panel C: Education				
Pessimistic	-0.36** (0.14)	-0.36** (0.15)	0.33* (0.20)	0.36* (0.20)
Education (\geq Bachelor)	0.02 (0.14)	0.02 (0.14)	0.13 (0.19)	0.17 (0.19)
Pessimistic X Education (\geq Bachelor)	0.11 (0.19)	0.12 (0.20)	-0.09 (0.26)	-0.12 (0.27)
Controls	No	Yes	No	Yes
Observations	423	423	423	423

Notes: Table reports OLS estimates with standard errors in parentheses. All regressions also include dummies for the balanced and baseline treatment and their interactions with the respective covariate. Controls include our standard set of covariates (age, female, income, education, econ student, no student, political orientation, risk group) excluding the covariate that is interacted with the treatment dummies in the respective regression. Constants not reported. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B6: Heterogeneous Treatment Effects by Income, Econ Students and News Consumption

	Certainty Equivalent		Future Value	
	(1)	(2)	(3)	(4)
Panel A: Income				
Pessimistic	-0.30** (0.14)	-0.29** (0.14)	0.05 (0.19)	0.07 (0.19)
Income(≥ 875)	-0.06 (0.14)	-0.03 (0.14)	-0.28 (0.18)	-0.25 (0.19)
Pessimistic X Income(≥ 875)	0.02 (0.19)	0.00 (0.20)	0.45* (0.26)	0.46* (0.26)
Controls	No	Yes	No	Yes
Observations	423	423	423	423
Panel B: Econ Students				
Pessimistic	-0.18 (0.12)	-0.17 (0.12)	0.13 (0.16)	0.11 (0.17)
Econ Student	0.21 (0.15)	0.20 (0.15)	-0.29 (0.20)	-0.29 (0.20)
Pessimistic X Econ Student	-0.32 (0.20)	-0.34* (0.20)	0.42 (0.27)	0.44 (0.27)
Controls	No	Yes	No	Yes
Observations	423	423	423	423
Panel C: News Consumption				
Pessimistic	-0.25 (0.15)	-0.23 (0.15)	0.26 (0.20)	0.25 (0.20)
News Consumption (\geq Often)	0.00 (0.14)	0.01 (0.14)	0.19 (0.19)	0.20 (0.19)
Pessimistic X News Consumption (\geq Often)	-0.08 (0.20)	-0.10 (0.20)	0.04 (0.26)	0.08 (0.27)
Controls	No	Yes	No	Yes
Observations	423	423	423	423

Notes: Table reports OLS estimates with standard errors in parentheses. All regressions also include dummies for the balanced and baseline treatment and their interactions with the respective covariate. Controls include our standard set of covariates (age, female, income, education, econ student, no student, political orientation, risk group) excluding the covariate that is interacted with the treatment dummies in the respective regression. Constants not reported. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

B.6 Expectations

Note on data cleaning Expectations about the DAX, COVID-19 related deaths and COVID-19 cases were elicited with an open text box, so that subjects could enter any value. Therefore, the data set contains a number of implausible values and outliers. One noteworthy data cleaning step was performed on these three measures: we recoded values that were unreasonably low and were most likely meant to be in thousands. For example, an entry of 12.5 for the DAX Value was recoded as 12500 and an entry of 10.2 for COVID-19 deaths was recoded as 10200.

In Table B7 we show with Mann-Whitney U tests that treatment effects on expectations are significant irrespective of performing this data cleaning step. Mann-Whitney U tests are our preferred test for treatment effects on expectations as they are robust to outliers.

Table B7: Treatment Effects on Expectations - Robustness to Data Cleaning

	DAX	COVID-19 Deaths	COVID-19 Cases
	(1)	(2)	(3)
<i>P-values from Mann-Whitney U tests</i> <i>(Optimistic = Pessimistic)</i>			
Prior to Cleaning	0.025	0.021	0.209
After Cleaning	0.025	0.024	0.170
N Implausible Prior to Cleaning	10	23	51
N Cleaned	10	11	22
N Implausible After Cleaning	0	12	29
N total	423	423	422 ^a

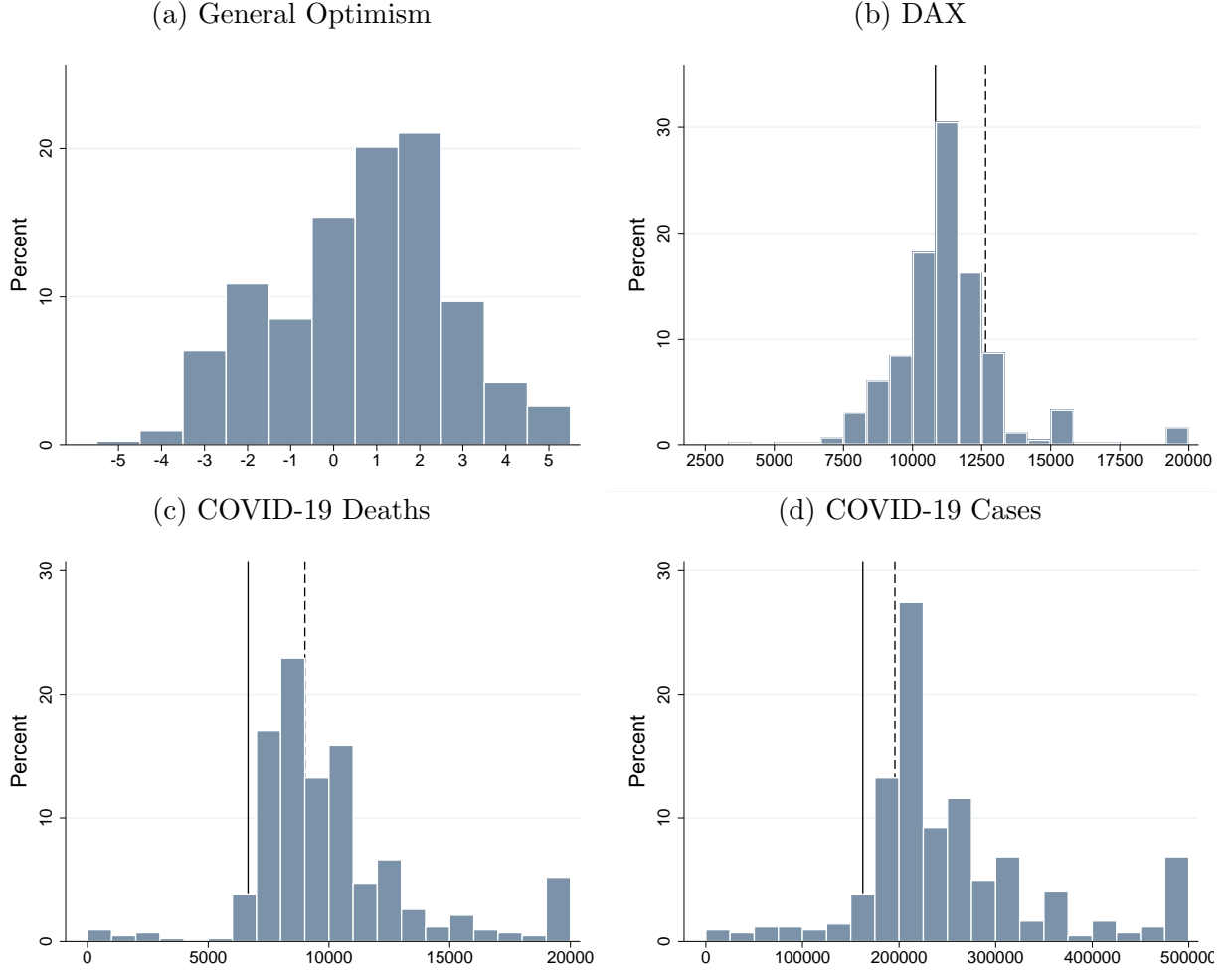
Notes: Table reports p-values from Mann-Whitney U tests, the number of observations recoded as part of the data cleaning and the number of observations that are still implausible after data cleaning. ^aOne observation for COVID-19 cases is dropped as the subject entered “improved” instead of a number.

After data cleaning, the expectations about COVID-19 deaths and cases still contain a number of implausibly low values (lower than the initial value of COVID-19 deaths/ cases in Germany on May 3rd). This issue is most severe for COVID-19 cases, which is therefore our most noisy measure among the four forward-looking expectations. Figure B2 depicts the distribution of expectations after data cleaning. We account for outliers in our regression analysis by winsorizing the expectations about the DAX, COVID-19 related deaths and COVID-19 cases. In that way we do not drop any observation from our analysis.

It was not necessary to perform any data cleaning on the qualitative measure of general

optimism (personal circumstances) which showed significant treatment effects of our manipulation using both Mann-Whitney U tests ($p = 0.007$) and OLS regressions ($p < 0.005$) (see Table B8).

Figure B2: Distribution of Expectations



Notes: Histograms for (a) general optimism (personal circumstances), (b) expectations about the DAX Value, (c) expectations about COVID-19 deaths and (d) expectations about COVID-19 cases. The solid line indicates the initial value on May 3rd. The dashed line indicates the realized value on July 3rd. Note that all values below the initial value in (c) and (d) are implausible values as the total number of COVID-19 deaths or cases cannot decrease. The histogram for the Dax Value has been winsorized at 20,000 points. The histogram for COVID-19 deaths has been winsorized at 20,000 deaths and the histogram for COVID-19 cases at 500,000 cases.

Table B8: OLS Estimates - Treatment Effects on Expectations

	General Optimism		DAX		COVID-19 Deaths		COVID-19 Cases	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pessimistic	-0.83*** (0.28)	-0.78*** (0.28)	-477.81** (216.74)	-491.41** (221.37)	634.29* (329.10)	597.41* (331.55)	10,977.00 (12,359.53)	9,652.76 (12,587.66)
Baseline	-0.26 (0.28)	-0.31 (0.28)	-17.15 (216.74)	-50.51 (222.01)	335.85 (329.10)	371.31 (332.51)	-169.79 (12,388.78)	1,633.87 (12,645.92)
Balanced	-0.34 (0.28)	-0.37 (0.28)	-99.40 (216.74)	-115.46 (219.42)	254.12 (329.10)	215.36 (328.63)	-1,603.95 (12,359.53)	-1,410.75 (12,476.20)
Age		-0.02 (0.02)		21.06 (15.29)		-33.15 (22.90)		72.29 (869.81)
Female		-0.21 (0.21)		64.85 (167.52)		-718.50*** (250.90)		-14,649.34 (9,535.19)
Income		0.12** (0.06)		-13.20 (46.00)		-30.83 (68.89)		-4,120.83 (2,615.57)
Education		0.12 (0.15)		10.53 (116.99)		189.45 (175.22)		2,213.86 (6,672.18)
Econ Student		0.04 (0.21)		-82.41 (169.59)		-64.81 (254.00)		1,495.20 (9,666.30)
No Student		0.66 (0.45)		30.92 (356.81)		-558.89 (534.41)		-6,782.42 (20,288.33)
Political Orientation		-0.10 (0.07)		-66.70 (52.99)		141.54* (79.37)		4,175.02 (3,014.05)
Risk Group COVID-19		-0.65* (0.34)		-87.56 (268.10)		229.24 (401.54)		-1,675.60 (15,244.12)
Constant	1.03*** (0.20)	1.39*** (0.53)	11,306.66*** (153.62)	10,836.55*** (420.98)	9,387.10*** (233.26)	10,641.01*** (630.51)	253,448.94*** (8,760.19)	269,502.98*** (23,973.90)
Observations	423	423	423	423	423	423	422	422
R-squared	0.02	0.07	0.02	0.03	0.01	0.05	0.00	0.02

Notes: Table reports OLS estimates with standard errors in parentheses. In columns (3) to (8) we control for outliers by winsorizing the outcome variables. In columns (3) and (4) the DAX values have been winsorized at 7,500 and 15,000 points. In columns (5) and (6) the COVID-19 related deaths have been winsorized at the initial value on May 3rd (6,649) and at 15,000 deaths. In columns (7) and (8) COVID-19 cases have been winsorized at the initial value on May 3rd (162,496) and at 500,000 cases. *** p<0.01, ** p<0.05, * p<0.1

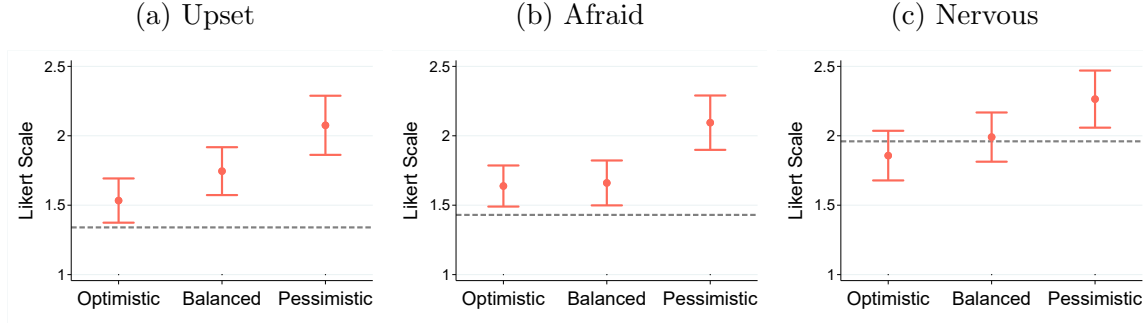
Table B9: OLS Estimates - Heterogeneous Treatment Effects on Expectations by News Consumption

	General Optimism		DAX		COVID-19 Deaths		COVID-19 Cases	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pessimistic	-1.20*** (0.43)	-1.21*** (0.42)	-950.4*** (335.2)	-982.5*** (337.9)	848.4* (509.0)	891.5* (506.9)	7,080 (19,339)	8,415 (19,447)
News Consumption (\geq Often)	0.21 (0.40)	0.00 (0.40)	-172.7 (311.0)	-189.2 (315.3)	578.3 (472.3)	590.06 (473.1)	1,773 (17,941)	4,312 (18,149)
Pessimistic X News Consumption (\geq Often)	0.64 (0.56)	0.75 (0.56)	809.2* (439.1)	858.8* (445.9)	-369.9 (666.7)	-514.9 (669.0)	6,650 (25,329)	1,443 (25,667)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Constant	0.91*** (0.30)	1.44** (0.59)	11,406.9*** (237.0)	11,016.9*** (469.9)	9,051.1*** (359.9)	10,204.7*** (705.0)	252,418*** (13,674)	261,912*** (27,046)
Observations	423	423	423	423	423	423	423	423
R-squared	0.03	0.08	0.03	0.04	0.02	0.06	0.01	0.02

Notes: Table reports OLS estimates with standard errors in parentheses. Subjects with high news consumption (\geq Often) make up 59.6% of our sample. All regressions also include dummies for the balanced and baseline treatment and their interactions with the high news consumption dummy. Controls include our standard set of covariates (age, female, income, education, econ student, no student, political orientation, risk group). In columns (3) to (8) we control for outliers by winsorizing the outcome variables. In columns (3) and (4) the DAX values have been winsorized at 7,500 and 15,000 points. In columns (5) and (6) the COVID-19 related deaths have been winsorized at the initial value on May 3rd (6,649) and at 15,000 deaths. In columns (7) and (8) COVID-19 cases have been winsorized at the initial value on May 3rd (162,496) and at 500,000 cases. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

B.7 Emotions

Figure B3: Treatment Effects of Narratives on Emotions



Notes: Figure B3 shows means and corresponding 95% confidence intervals for the emotional state of subjects across treatment conditions: for feeling (a) upset, (b) afraid and (c) nervous. The dashed line indicates the mean in the baseline condition. Emotions are measured on a 5-point Likert scale (1 “not at all” to 5 “very much”).

Table B10: Treatment Effects on Affect and Emotions

	Affect	Upset	Afraid	Nervous	Attentive	Determined	Inspired
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Pessimistic	-1.23*** (0.41)	0.54*** (0.12)	0.46*** (0.12)	0.41*** (0.14)	0.00 (0.11)	0.02 (0.14)	0.16 (0.14)
Balanced	-0.08 (0.41)	0.21* (0.12)	0.02 (0.12)	0.13 (0.14)	0.13 (0.11)	0.09 (0.14)	0.07 (0.14)
Baseline	0.83** (0.41)	-0.18 (0.12)	-0.20* (0.12)	0.11 (0.14)	0.03 (0.11)	0.21 (0.14)	0.31** (0.14)
Constant	4.30*** (0.29)	1.53*** (0.09)	1.64*** (0.09)	1.86*** (0.10)	3.72*** (0.08)	3.10*** (0.10)	2.50*** (0.10)
Observations	423	423	423	423	423	423	423
R-squared	0.06	0.08	0.07	0.02	0.00	0.01	0.01

Notes: Table reports OLS estimates with standard errors in parentheses. Affect is constructed as the sum of the positive items (attentive, determined, inspired) minus the negative items (upset, afraid, nervous) *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B11: Pairwise Correlation Coefficients between Expectations and Emotions

	General Optimism	DAX	COVID-19 Deaths	COVID-19 Cases	Affect	Upset	Afraid	Nervous
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
General Optimism	1.000							
DAX	0.236***	1.000						
COVID-19 Deaths	-0.164***	-0.152***	1.000					
COVID-19 Cases	-0.104**	-0.079	0.594***	1.000				
Affect	0.283***	0.126***	-0.012	0.016	1.000			
Upset	-0.236***	-0.107**	0.043	0.037	-0.585***	1.000		
Afraid	-0.166***	-0.071	-0.002	0.012	-0.622***	0.391***	1.000	
Nervous	-0.201***	-0.051	-0.013	-0.038	-0.599***	0.385***	0.599***	1.000

Notes: Table reports pairwise Pearson correlation coefficients. DAX values have been winsorized at 7,500 and 15,000 points, COVID-19 related deaths at the initial value on May 3rd (6,649) and at 15,000 deaths, COVID-19 cases at the initial value on May 3rd (162,496) and at 500,000 cases. *** p<0.01, ** p<0.05, * p<0.1

Table B12: Causal Channel on Patience

	Future Value							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Affect	-0.021 (0.015)							
Upset		0.094* (0.050)						
Afraid			0.108** (0.052)					
Nervous				0.059 (0.046)				
General Optimism					-0.007 (0.023)			
DAX						0.048* (0.028)		
COVID-19 Deaths							-0.036* (0.020)	
COVID-19 Cases								-0.045 (0.051)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	3.242*** (0.251)	2.980*** (0.261)	2.991*** (0.256)	3.056*** (0.257)	3.166*** (0.245)	2.642*** (0.389)	3.547*** (0.322)	3.281*** (0.281)
Observations	423	423	423	423	423	423	423	423
R-squared	0.029	0.033	0.035	0.028	0.025	0.031	0.032	0.026

Notes: Table reports OLS estimates with standard errors in parentheses. Expectations about the DAX are winsorized at 7,500 and 15,000 points and transformed in thousands. COVID-19 related deaths are winsorized at the initial value (6,649) and at 15,000 deaths and transformed in thousands. COVID-19 deaths are winsorized at the initial value (162,496) and at 500,000 cases and are transformed in hundred thousands. Controls include our standard set of covariates (age, female, income, education, econ student, no student, political orientation, risk group). *** p<0.01, ** p<0.05, * p<0.1

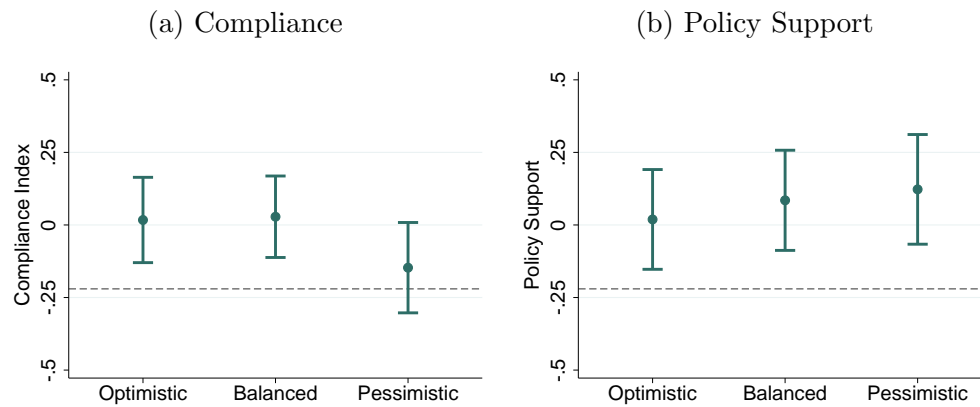
Table B13: Causal Channel on Risk Aversion

	Certainty Equivalent							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Affect	0.015 (0.011)							
Upset		0.004 (0.037)						
Afraid			-0.058 (0.039)					
Nervous				0.011 (0.035)				
General Optimism					0.033* (0.017)			
DAX						0.028 (0.021)		
COVID-19 Deaths							-0.023 (0.015)	
COVID-19 Cases								-0.045 (0.039)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	1.949*** (0.188)	2.000*** (0.196)	2.098*** (0.192)	1.988*** (0.193)	1.973*** (0.183)	1.704*** (0.292)	2.258*** (0.242)	2.129*** (0.210)
Observations	423	423	423	423	423	423	423	423
R-squared	0.014	0.010	0.015	0.010	0.018	0.014	0.016	0.013

Notes: Table reports OLS estimates with standard errors in parentheses. Expectations about the DAX are winsorized at 7,500 and 15,000 points and transformed in thousands. COVID-19 related deaths are winsorized at the initial value (6,649) and at 15,000 deaths and transformed in thousands. COVID-19 deaths are winsorized at the initial value (162,496) and at 500,000 cases and are transformed in hundred thousands. Controls include our standard set of covariates (age, female, income, education, econ student, no student, political orientation, risk group). *** p<0.01, ** p<0.05, * p<0.1

B.8 Compliance and Policy Support

Figure B4: Treatment Effects on Compliance and Policy Support



Notes: Means and corresponding 95% confidence intervals for (a) compliance with social distancing measures and (b) policy support in the three treatment conditions. The dashed line indicates the mean in the baseline condition. Compliance is an index constructed from answers to five questions asking for compliance with social distancing measures in the days after the experiment on a 5-point Likert scale (1 “very unlikely” to 5 “very likely”). A higher number corresponds to a stronger compliance with social distancing measures. For policy support we asked whether political restrictions to contain the spread of COVID-19 should rather be loosened or tightened on a 5-point Likert scale (-2 “significantly loosened” to +2 “significantly tightened”).

Table B14: Treatment Effects on Compliance and Policy Support

	Compliance		Policy Support	
	(1)	(2)	(3)	(4)
Pessimistic	-0.16 (0.11)	-0.11 (0.11)	0.10 (0.13)	0.12 (0.13)
Balanced	0.01 (0.11)	0.06 (0.11)	0.07 (0.13)	0.12 (0.12)
Baseline	-0.24** (0.11)	-0.21* (0.11)	-0.24* (0.13)	-0.17 (0.13)
Age		-0.01 (0.01)		-0.00 (0.01)
Female		0.41*** (0.08)		0.29*** (0.09)
Income		0.00 (0.00)		-0.00 (0.00)
Education		-0.15** (0.06)		-0.15** (0.07)
Econ Student		0.11 (0.08)		0.02 (0.10)
No Student		0.26 (0.17)		-0.09 (0.20)
Political Orientation		-0.00 (0.03)		0.09*** (0.03)
Risk Group COVID-19		0.05 (0.13)		0.21 (0.15)
Constant	0.02 (0.08)	-0.09 (0.21)	0.02 (0.09)	-0.06 (0.24)
Observations	423	423	423	423
R-squared	0.02	0.10	0.02	0.10

Notes: Table reports OLS estimates with standard errors in parentheses. Compliance is an index constructed from answers to five questions asking for compliance with social distancing measures in the days after the experiment on a 5-point Likert scale (1 “very unlikely” to 5 “very likely”). A higher number corresponds to a stronger compliance with social distancing measures. For policy support we asked whether political restrictions to contain the spread of COVID-19 should rather be loosened or tightened on a 5-point Likert scale (-2 “significantly loosened” to +2 “significantly tightened”). *** p<0.01, ** p<0.05, * p<0.1

C Robustness - Results for Restricted Sample (N=396)

Table C1: OLS Estimates - Average Treatment Effects, Restricted Sample (N=396)

	Certainty Equivalent		Future Value		DAX Expectations	
	(1)	(2)	(3)	(4)	(5)	(6)
Pessimistic	-0.33*** (0.10)	-0.31*** (0.10)	0.30** (0.14)	0.31** (0.14)	-519.65** (225.63)	-545.61** (228.23)
Balanced	-0.10 (0.10)	-0.09 (0.10)	0.26* (0.14)	0.26* (0.14)	-175.77 (226.71)	-213.85 (229.26)
Baseline	-0.21** (0.10)	-0.20* (0.10)	0.14 (0.14)	0.19 (0.14)	-82.96 (226.16)	-129.23 (230.34)
Age		-0.00 (0.01)		0.00 (0.01)		24.59 (18.37)
Female		-0.07 (0.08)		-0.02 (0.10)		113.10 (173.52)
Income		0.01 (0.02)		-0.05* (0.03)		-2.82 (48.34)
Education		-0.08 (0.06)		0.07 (0.08)		36.82 (125.93)
Econ Student		-0.08 (0.08)		-0.20** (0.10)		-65.98 (170.80)
Political Orientation		-0.00 (0.02)		0.02 (0.03)		-56.21 (54.95)
Risk Group COVID-19		-0.07 (0.13)		0.08 (0.17)		-96.50 (283.15)
Constant	2.04*** (0.07)	2.16*** (0.22)	2.85*** (0.10)	2.92*** (0.29)	11,336.62*** (163.19)	10,712.31*** (486.52)
Observations	396	396	396	396	396	396
R-squared	0.03	0.04	0.01	0.04	0.02	0.03
p-values: (Pessimistic)	0.001	0.002	0.029	0.023	0.022	0.017

Notes: Table reports OLS estimates with standard errors in parentheses. All non-student subjects (N=27) are excluded from the sample. The optimistic treatment is the reference group. Expectations about the DAX are winsorized at 7,500 and 15,000 points. *** p<0.01, ** p<0.05, * p<0.1

D Experimental Instructions (English translation)

Participants received experimental instructions in German (see Appendix E). Below we provide an English transcript. A dashed line indicates the next page of the survey. Explanatory comments (which were not displayed to participants) are indicated by blue, italic text.

Welcome to this online experiment! You will receive €2.50 as a show-up fee. Depending on the decisions you take during this study, you can earn an additional payment. As described in the invitation, your payment will be transferred to your PayPal account. Therefore, you will be asked to provide the email address of your PayPal account at the end of this survey. Please make sure you know the email address of your PayPal account before you begin. Your participation will take approximately 15 minutes.

O I consent to the above conditions.

Participants could only continue when they gave their consent.

As start of this study two telephone numbers will be displayed. Please try to memorise the numbers. You will have 20 seconds to do so.

You will be asked to recognise the two numbers at a later point in time.

05454/444-54

08421/792-65

Participants were automatically forwarded after 20 seconds. A timer indicated the remaining time participants had on this page.

On the next page a topical text will be displayed. Please try to memorise as much of the content as possible. You will have two minutes to do so.

At a later point in time you will be asked to answer three questions about the content of the text. You will earn €0.50 per correct answer.

One of the four treatment manipulations was randomly selected and displayed. Participants could not leave this page independently (skip the text). Subjects were automatically forwarded after two minutes. A timer indicated the remaining time they had left to read the test. The treatment texts are available in full length in Appendix A2.

We would like to know how you feel right now.

The following words describe different feelings and sensations. Read every word, then indicate the intensity with which you experience the respective emotion at the moment. You can choose between five gradations.

	not at all	a little	somewhat	much	very much
upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
attentive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
afraid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
determined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

At the beginning of the study you were shown two telephone numbers. Which of the following numbers were they?

☐ 02235/679-89

☐ 0721/972-56

☐ 08421/792-65

☐ 05454/444-54

Now you will make decisions in three blocks. At the end of the study, one of the three blocks will be randomly selected. Only the decisions made in the selected block will be relevant for the variable part of your payment.

This means that every decision that you will make can potentially influence the payment you receive. You should therefore take all decisions as if they would be implemented.

In-between the decision blocks we will ask questions about the text that you have read in the beginning.

Decision block 1 starts now.

The order of the elicitation of risk taking, patience and productivity was randomized. Thus, block 1 could contain any of the three behavioral outcomes. As an example, we are presenting the elicitation of risk aversion here.

In this block you will take five decisions. You will always have the choice between a guaranteed payment and a lottery which pays €4 with 50 percent chance and €0 with 50 percent chance.

In this block one of your five decisions is randomly selected to be considered for payment.

Do you want to receive a guaranteed payment of € X or play a lottery with 50 percent chance for €4 and 50 percent chance for €0?

☐ € X as guaranteed payment ☐ lottery with 50% chance for €4 and 50% chance for €0

This question was displayed five times with different values for X . The first value for X was €1.65 and subsequent values depended on the previous decisions. Figure A3 in Appendix A3 shows the game tree.

Next is a question on the text that you read in the beginning.

The following statement was made or was contained in the text in this or in a similar fashion:

– sentence –

O True

O False

Instead of – sentence – a sentence from the treatment text was displayed to participants. This sentence was the same independently of which outcome was elicited in block 1. The correct answer for all statements is “True”. The sentences displayed were:

Pessimistic: The population should not for a second lull itself into a false sense of security, chancellor Angela Merkel warned in a speech.

Balanced: The population has made great achievements, but should not lull itself into a false sense of security, chancellor Angela Merkel said in a speech.

Optimistic: Due to its discipline the population has made great achievements in the last weeks, chancellor Angela Merkel praised in a speech.

Baseline: Already the astronomer Johannes Kepler wrote in a letter to Galileo Galilei: Provide ships or sails that are suitable for the breeze of heaven.

Decision block 2 starts now.

Here one of the two remaining behavioral outcomes was randomly elicited. As an example we are presenting the elicitation of patience here.

In this block you will take five decisions. You always have the choice between a payment you receive directly after your participation in this study and a payment you receive in 2 months (in exactly 60 days). In both cases the money will be transferred to your PayPal account.

One of your five decisions is randomly selected to be considered for payment.

Do you want to receive €2 today or € X in two months?

☐ €2 today

☐ € X in two months

This question was displayed five times with different values for X . The first value for X was €3.32 and subsequent values depended on the previous decisions. Figure A4 in Appendix A3 shows the game tree.

Next is a question on the text that you read in the beginning.

The following statement was made or was contained in the text in this or in a similar fashion:

– sentence –

☐ True

☐ False

Instead of – sentence – a sentence from the treatment text was displayed to participants. This sentence was the same independently of which outcome was elicited in block 2. The correct answer for all statements is “True”. The sentences displayed were:

Pessimistic: In a second wave of infections, Germany could face conditions like in Italy or Spain.

Balanced: In Germany, the situation has not yet developed like in Italy or Spain. In the worst case, this might change with a second wave of infections.

Optimistic: If the numbers continue to develop in such a positive way, the situation in Germany will not unfold like in Italy or Spain.

Baseline: If a current sailing mission in outer space continues to be successful, the efforts of the ancient thinkers might pay off.

Decision block 3 starts now.

Here, the remaining behavioral outcome was elicited. As an example, we are presenting the productivity task here.

In this block your task is to count how often the digit ‘1’ appears in a line of symbols. For each correct answer you receive €0.10. You have two minutes to solve as many lines as possible.

remaining time: 01:02

1 1 i 1 1 1 i i 1 2 1 1



What do you think:

- How many lines did you complete? [*open text box*]
 - How many lines did you answer correctly? [*open text box*]
-

Next is a question on the text that you read in the beginning.

The following statement was made or was contained in the text in this or in a similar fashion:

– sentence –

O True

O False

Instead of – sentence – a sentence from the treatment text was displayed to participants. This sentence was the same independently of which outcome was elicited in block 3. The correct answer for all statements is “True”. The sentences displayed were:

Pessimistic: Most likely it will take until next year until a vaccine is available.

Balanced: It is hard to predict when a vaccine will be available.

Optimistic: A vaccine might soon be found.

Baseline: A mechanical propulsion that is independent of rocket engines could help lead scientists to many new insights. It is however hard to predict, if and when this will be the case.

The three decision blocks are completed. You now have an opportunity to earn an additional variable payment by making a number of predictions.

You are now asked to make three predictions about the development of key figures regarding the current pandemic until the 3rd of July 2020 (this is in exactly 60 days). Three participants will be selected randomly for each question and will be paid depending on the accuracy of their predictions. The closer the prediction is to the realized value, the higher the payment will be. You can win up to €20 with your predictions.

Note: Your payment is independent of what other participants predict. You should therefore state the value which you regard as most likely for each figure. For the selection of the winners, only one of your predictions will be considered. Therefore it is not possible to spread your risk across predictions and you cannot win multiple times.

We will use official data from the Robert Koch Institute (RKI) and the German stock exchange to evaluate the predictions.

- What do you think: How many confirmed coronavirus cases will there be in Germany on 3rd July 2020 (in 60 days)? [*open text box*] On 3rd of May 2020 the RKI reported 162,496 confirmed coronavirus cases in Germany.
- What do you think: How many confirmed deaths due to the coronavirus will there be in Germany on 3rd July 2020 (in 60 days)? [*open text box*] On 3rd of May 2020 the RKI reported 6,649 confirmed deaths due to coronavirus in Germany.
- What do you think: With how many points will the Dax close on 3rd of July 2020 (in 60 days)? [*open text box*] On 3rd of May the Dax closed with a value of 10,828 points.

Think about your personal circumstances in the next weeks. To what extent do you expect things to develop positively or negatively?

Participants had to answer the above question on an 11-point Likert scale: from very negatively (-5) to very positively (+5).

Think of the upcoming days. How likely is it that ...

- (1) ... you only make trips that are absolutely unavoidable (e.g. to the pharmacy or supermarket)?
- (2) ... you always wear a face mask in the public?
- (3) ... you attend private parties or meet up with more than one person (who do/does not live in the same household)?
- (4) ... you use public transport?
- (5) ... you meet or visit persons who are part of a risk-group for the coronavirus?

Participants had to answer the above question on an 5-point Likert scale: very unlikely (1), rather unlikely (2), indecisive (3), rather likely (4), very likely (5). The index for compliance is then constructed based on the five answers as follows: $[(1) + (2) - (3) - (4) - (5)]/5$.

How often did you inform yourself about the impacts of the coronavirus in the last days?

Participants had to answer the above question on an 5-point Likert scale: never (1), seldom (2), sometimes (3), often (4), very often (5).

In your opinion, should the current political measures to contain the spread of the coronavirus be loosened or tightened?

Participants had to answer the above question on an 5-point Likert scale: significantly loosened (-2), rather loosened (-1), neither nor (0), rather tightened (+1), significantly tightened (+2).

Thank you! Finally, a few questions about you:

- How old are you? []
- Which gender do you identify with? [male / female / diverse]
- What is your subject of studies? (If more than one: Major) [all subjects that can be studied at the University of Cologne]
- What is your highest educational achievement? [No formal degree / Secondary Modern School / Junior High School / A-levels / Master Craftsmen / Bachelor / Diploma or Magister / Master / State Examination / PhD]
- How much money do you have at your disposal monthly? (net) [less than 500 euros / 500 euros - 750 euros / 750 euros - 1000 euros / 1000 euros - 1250 euros / 1250 euros - 1500 euros / 1500 euros - 1750 euros / 1750 euros - 2000 euros / more than 2000 euros]
- Which political party do you identify most with? [CDU-CSU / SPD / AfD / FDP / Die Linke / Bündnis90-Die Grünen / other / none]
- In case you would fall sick with the coronavirus: Do you belong to a group of people with an increased risk for a severe case? [yes / no / I don't know]

Thank you for your participation in this study. We need the email address of your PayPal account to be able to transfer the money you earned. As soon as the payment is completed, your email address will be deleted. All data will be stored in an anonymous way.

[box to enter email address]

On the next page you will be informed about the exact amount you earned today.

Thanks again for your participation.

As announced, you will earn a guaranteed show-up fee of €2.50. Furthermore, your payment is composed of the following parts:

Out of the three questions about the text you read in the very beginning you answered X questions correctly. This results in an additional payment of € X .

In addition, block X was randomly chosen for your payment. There decision number x was randomly picked to be relevant for you. You decided to X .

Therefore, you will receive a total payment of € X on your PayPal account today and a total payment of € X in exactly 60 days.

The results for the predictions will be published on the 4th of July 2020 on the homepage of the chair for Experimental and Behavioral Economics (<https://behavecon.uni-koeln.de>). The winners will be paid via PayPal.

If you have questions about the study or your payment please contact harris@wiso.uni-koeln.de.

Instead of the X s participants were shown the respective values that applied to them.

E Experimental Instructions (original)

An English translation can be found in Appendix D. For comments on the instructions, e.g. on the randomization of manipulations, randomization of the order of the behavioral outcomes or the elicitation of our behavioral outcomes, see the English translation in Appendix D. A dashed line indicates the next page of the survey.

Herzlich Willkommen zu dieser Online Studie! Für Ihre Teilnahme werden Sie eine garantierte Mindestteilnahmevergütung von 2.50 Euro erhalten. Basierend auf Ihren Entscheidungen können Sie zusätzlich eine variable Teilnahmevergütung erspielen. Wie in der Einladung beschrieben, wird Ihnen Ihre Teilnahmevergütung über Ihren PayPal Account ausbezahlt. Am Ende dieser Studie werden Sie gebeten, die Email Adresse von Ihrem PayPal Account einzugeben. Bitte legen Sie Ihre PayPal Adresse bereit, bevor Sie mit der Studie beginnen. Diese Studie wird ungefähr 15 Minuten dauern.

O Ich erkläre mich mit den oben genannten Bedingungen einverstanden.

Zu Beginn dieser Studie werden Sie zwei Telefonnummern angezeigt bekommen. Versuchen Sie, sich die Nummern zu merken. Sie haben hierfür zwanzig Sekunden Zeit.

Sie müssen die zwei Nummern zu einem späteren Zeitpunkt wiedererkennen.

05454/444-54
08421/792-65

Auf der nächsten Seite werden Sie einen Text mit aktuellem Bezug angezeigt bekommen. Bitte versuchen Sie, sich den Inhalt so gut wie möglich einzuprägen. Sie haben hierfür zwei Minuten Zeit.

Im weiteren Verlauf der Studie werden wir Ihnen drei Fragen zu dem Inhalt dieses Textes stellen. Sie erhalten 0.50€ pro Frage, die Sie richtig beantworten können.

Optimistic

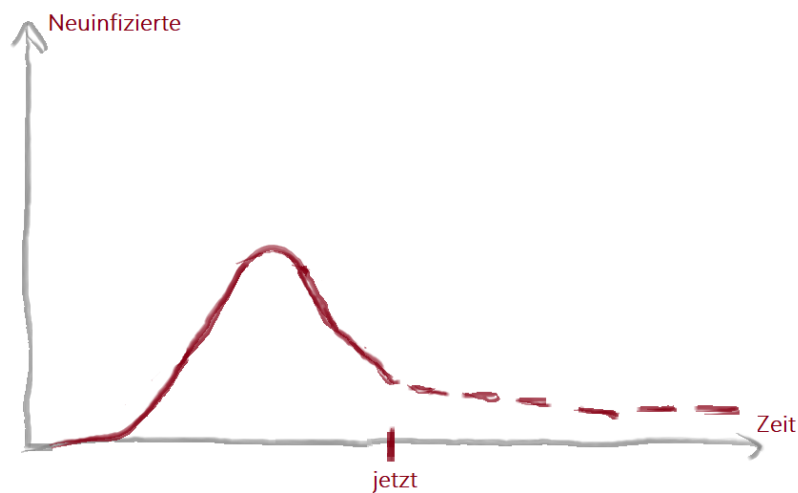
In Deutschland werden die Maßnahmen zur Eindämmung des Coronavirus gelockert. Es bewegen sich wieder mehr Menschen in der Öffentlichkeit und viele Geschäfte öffnen. Die Bevölkerung habe durch ihre Disziplin in den letzten Wochen viel erreicht, lobte Angela Merkel in einer Ansprache.

Immer mehr Menschen werden in den nächsten Tagen wieder gesund werden. Schon jetzt sind sehr viele genesen. Und jeden Tag stecken sich deutlich weniger Menschen neu an als noch vor ein paar Wochen. Dieser Trend dürfte sich fortsetzen.

Auch das Gesundheitssystem ist bisher nicht in die Nähe seiner Kapazitätsgrenze gekommen. Im Vergleich zu Italien oder Spanien war die Situation in Deutschland zu fast jedem Zeitpunkt unter Kontrolle. Ärzte hierzulande hatten oft sogar weniger zu tun als gewöhnlich, weil nicht dringliche Eingriffe aufgeschoben wurden.

Mit den gelockerten Regeln läuft zudem die Wirtschaft an. Kunden gehen wieder häufiger einkaufen. Das belebt den Umsatz in vielen Branchen. Teilweise wird sogar Urlaub im Sommer geplant. Die Anstrengungen der letzten Wochen scheinen sich auszuzahlen.

Unterdessen sind weltweit Forscher dabei, das neuartige Virus besser zu verstehen. Ein Impfstoff könnte schon bald gefunden werden.



Pessimistic

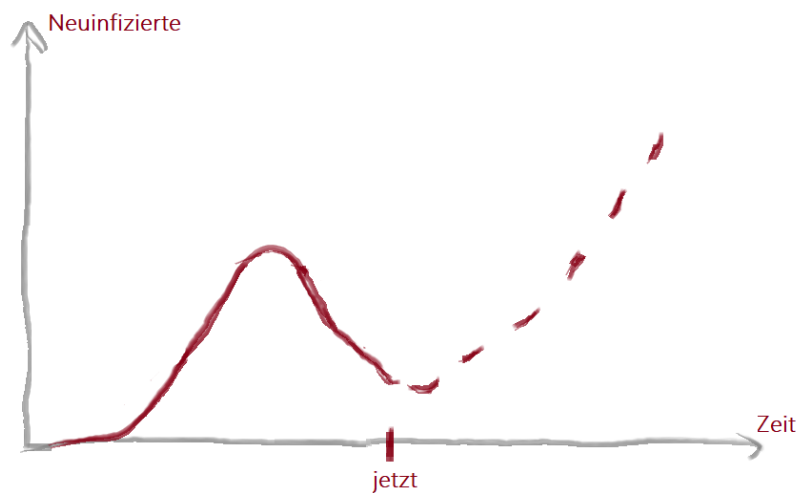
In Deutschland werden die Maßnahmen zur Eindämmung des Coronavirus möglicherweise zu früh gelockert. Bewegen sich wieder mehr Menschen, kann es zu einer zweiten Infektionswelle kommen. Die Bevölkerung solle sich keine Sekunde in Sicherheit wiegen, mahnte Angela Merkel in einer Ansprache.

Es wird vermutet, dass sich bei einer zweiten Infektionswelle deutlich mehr ältere Menschen anstecken. Die zweite Welle wäre dann deutlich tödlicher.

Kommt eine zweite Infektionswelle, besteht die Gefahr, dass das Gesundheitssystem an seine Grenzen stößt. Es könnte in Deutschland zu Zuständen wie in Italien oder Spanien kommen. Dort geriet die Situation vielerorts außer Kontrolle. Ärzte mussten entscheiden, wen sie behandeln und wen sie sterben lassen – die sogenannte Triage.

Wenn sich das Virus wieder schneller verbreitet, droht ein zweiter, voraussichtlich heftigerer Shutdown. Das würde für viele Unternehmen endgültig den Bankrott bedeuten. Die Anstrengungen der letzten Wochen wären umsonst gewesen.

Noch immer sind grundlegende Fragen zum Virus unbeantwortet. Etwa die Sterblichkeit und die häufigsten Übertragungswege im Alltag sind nicht exakt bestimmt. Bis ein Impfstoff verfügbar ist, wird es wahrscheinlich noch bis zum nächsten Jahr dauern.



Balanced

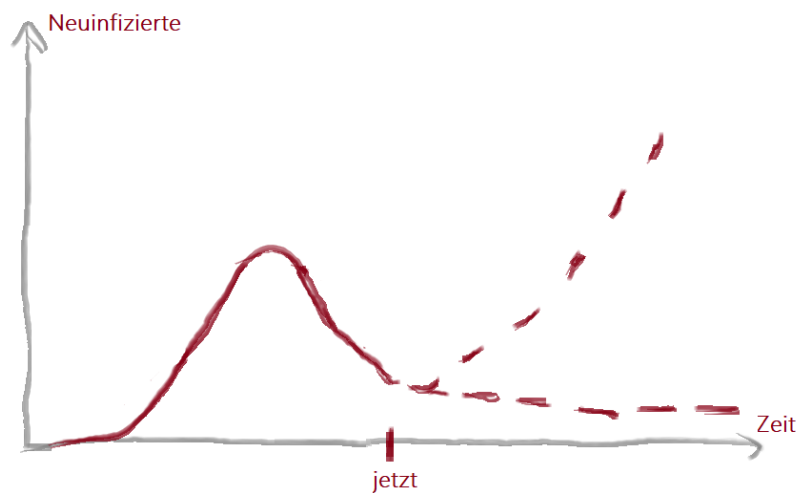
In Deutschland werden die Maßnahmen zur Eindämmung des Coronavirus langsam gelockert. Das freut die Wirtschaft und die Menschen, erhöht aber die Gefahr einer zweiten Infektionswelle. Man habe viel erreicht, dürfe sich aber keine Sekunde in Sicherheit wiegen, sagte Angela Merkel in einer Ansprache.

Aktuell sinken die täglichen Neuinfektionen. In einigen Regionen und Altersgruppen gab es so gut wie keine Todesfälle. Kommt aber eine zweite Welle, könnte diese tödlicher verlaufen.

Das Gesundheitssystem in Deutschland ist bisher nicht an seine Kapazitätsgrenze gestoßen. Im Vergleich zu Italien oder Spanien war die Situation vergleichsweise gut unter Kontrolle. Dort mussten Ärzte teilweise entscheiden, wen sie behandeln und wen sie sterben lassen.

Mit weniger strengen Regeln kaufen Kunden wieder häufiger ein. Das freut die Wirtschaft. Kommt jedoch ein zweiter Shutdown, könnte dieser heftiger ausfallen als der erste. Das könnte für ein paar Unternehmen endgültig das Aus bedeuten. Ob sich die Anstrengungen der letzten Wochen gelohnt haben, bleibt also abzuwarten.

Unterdessen forschen Wissenschaftler beständig an offenen Fragen zum neuartigen Virus. Wann es einen Impfstoff geben wird, kann allerdings niemand genau vorhersagen.



Baseline

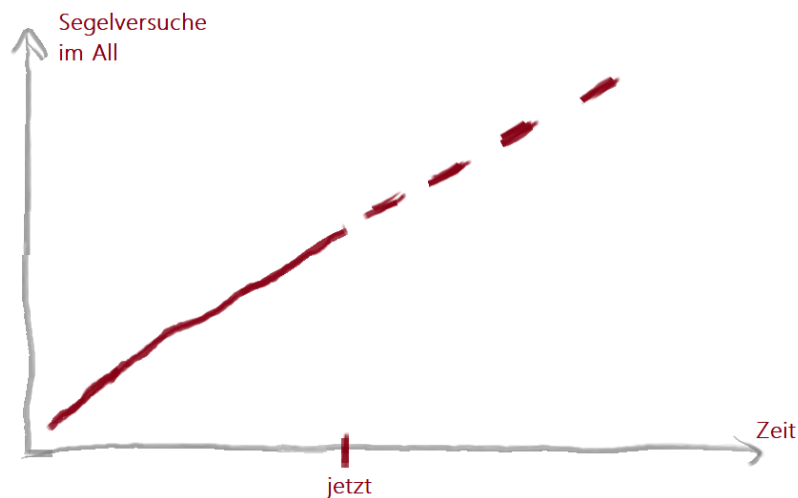
Bereits im 18. Jahrhundert träumten deutsche Wissenschaftler vom Segeln im All. Schon der Astronom Johannes Kepler schrieb an Galileo Galilei: „Stellen Sie Schiffe oder Segel zur Verfügung, die der himmlischen Brise angepasst sind.“ Dieser Traum wurde im vergangenen Jahr Realität. Eine Mission zeigte, dass Objekte im All mit einem Segel bewegt werden können.

Auf Laien wirkt dieses Vorhaben absurd. Denn im All gibt es keine Luft und somit auch keinen gewöhnlichen Wind, der in ein Segel blasen könnte. Offenbar ist es jedoch möglich, mit Sonnenstrahlung zu segeln. Im Weltraum gibt es nämlich ziemlich wenig Widerstand.

Viele kosmische Segel-Projekte sind bisher gescheitert. Auf einer aktuellen Mission hat es aber geklappt – mit einer besonders leichten Sonde und einem vergleichsweise großen Segel.

Es ist das zweite Mal, das gezeigt wurde, dass ein solcher Antrieb grundsätzlich möglich ist. Wenn die Mission problemlos weiterläuft, könnten sich die Anstrengungen der Vordenker gelohnt haben.

Noch immer sind viele Fragen über das All unbeantwortet. Ein von Raketen unabhängiger Antrieb könnte Wissenschaftlern zu neuen Erkenntnissen verhelfen. Ob und wann dies geschehen wird, kann niemand vorhersagen.



Nun möchten wir gerne von Ihnen wissen, wie Sie sich fühlen.

Die folgenden Wörter beschreiben unterschiedliche Gefühle und Empfindungen. Lesen Sie jedes Wort und tragen Sie dann in die Skala neben jedem Wort die Intensität ein, mit der Sie dieses Gefühl zurzeit fühlen. Sie haben die Möglichkeit, zwischen fünf Abstufungen zu wählen.

	gar nicht	ein bisschen	einigermaßen	erheblich	äußerst
verärgert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
aufmerksam	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ängstlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
entschlossen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
nervös	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
angeregt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Sie haben am Anfang der Studie zwei Telefonnummern angezeigt bekommen. Welche der folgenden Nummern waren es?

☐ 02235/679-89

☐ 0721/972-56

☐ 08421/792-65

☐ 05454/444-54

Nun treffen Sie nacheinander Entscheidungen in drei Entscheidungsblöcken. Am Ende der Studie wird für Sie einer der drei Entscheidungsblöcke ausgelost. Nur die Entscheidungen aus dem ausgelosten Entscheidungsblock werden Ihre variable Vergütung beeinflussen.

Das heißt, jede Ihrer folgenden Entscheidungen kann für Sie auszahlungsrelevant werden. Sie sollten daher jede Ihrer Entscheidungen so treffen, als würde sie für Sie umgesetzt.

Zwischen den Entscheidungsblöcken werden Fragen zu dem Text, den Sie am Anfang gelesen

haben, erscheinen.

Es beginnt Entscheidungsblock 1.

In diesem Block werden Sie fünf Entscheidungen treffen. Sie haben jeweils die Wahl zwischen einer sicheren Auszahlung und einer Lotterie, die mit 50 Prozent Wahrscheinlichkeit 4 Euro auszahlt und mit 50 Prozent Wahrscheinlichkeit 0 Euro auszahlt. In diesem Block wird eine Ihrer fünf Entscheidungen zufällig ausgewählt.

Möchten Sie eine sichere Auszahlung von X Euro erhalten oder eine Lotterie spielen mit 50 Prozent Chance auf 4 Euro und 50 Prozent Chance auf 0 Euro?

☐ X € als sichere Auszahlung ☐ Lotterie mit 50% Chance auf 4€ und 50% Chance auf 0€

Es folgt eine Aufgabe zu dem Text, den Sie am Anfang gelesen haben.

Die folgende Aussage kam so oder so ähnlich in dem Text vor:

– *sentence* –

☐ wahr

☐ falsch

Pessimistic: Die Bevölkerung solle sich keine Sekunde in Sicherheit wiegen, mahnte Angela Merkel in einer Ansprache.

Balanced: Man habe viel erreicht, dürfe sich aber keine Sekunde in Sicherheit wiegen, sagte Angela Merkel in einer Ansprache.

Optimistic: Die Bevölkerung habe durch ihre Disziplin viel erreicht, lobte Angela Merkel in einer Ansprache.

Baseline: Stellen Sie Schiffe oder Segel zur Verfügung, die der himmlischen Brise angepasst sind, schrieb Johannes Kepler an Galileo Galilei.

Es geht weiter mit Entscheidungsblock 2.

In diesem Block werden Sie fünf Entscheidungen treffen. Sie haben jeweils die Wahl zwischen einer Auszahlung, die sie direkt im Anschluss an diese Studie erhalten und einer Auszahlung, die sie in zwei Monaten (in genau 60 Tagen) erhalten. Zu beiden Zeitpunkten werden Sie die Auszahlung über Ihren PayPal Account erhalten. In diesem Block wird eine Ihrer fünf Entscheidungen zufällig ausgewählt.

Möchten Sie 2 Euro heute erhalten oder X Euro in zwei Monaten?

☐ 2 € heute

☐ X € in zwei Monaten

Es folgt eine Aufgabe zu dem Text, den Sie am Anfang gelesen haben.

Die folgende Aussage kam so oder so ähnlich in dem Text vor:

– *sentence* –

☐ wahr

☐ falsch

Pessimistic: Wenn eine zweite Infektionswelle kommt, könnte es zu ähnlichen Zuständen wie in Italien oder Spanien kommen.

Balanced: Es gab in Deutschland bisher keine Zustände wie in Spanien oder Italien. Dies könnte sich mit einer zweiten Infektionswelle schlimmstenfalls ändern.

Optimistic: Wenn sich die Zahlen weiter so positiv entwickeln, wird es in Deutschland keine

Zustände wie in Spanien oder Italien geben.

Baseline: Wenn auf einer aktuellen Mission weiterhin erfolgreich im All gesegelt wird, könnten sich die Anstrengungen der Vordenker gelohnt haben.

Jetzt beginnt Entscheidungsblock 3.

In diesem Block ist es Ihre Aufgabe, zu zählen, wie oft die Ziffer 1 in einer Reihe von Symbolen vorkommt. Für jede richtige Antwort erhalten Sie eine Vergütung von 0.10 Euro. Sie haben insgesamt 2 Minuten Zeit, um so viele Aufgaben zu lösen wie möglich.

Verbleibende Zeit: 02:00

1 1 i 1 1 1 i i 1 2 1 1

Was denken Sie:

- Wie viele Reihen haben Sie in der gerade abgeschlossenen Aufgabe bearbeitet? [*open text box*]
 - Wie viele Reihen haben Sie in der gerade abgeschlossenen Aufgabe richtig gelöst? [*open text box*]
-

Es folgt eine Aufgabe zu dem Text, den Sie am Anfang gelesen haben.

Die folgende Aussage kam so oder so ähnlich in dem Text vor:

– *sentence* –

O wahr

O falsch

Pessimistic: Bis ein Impfstoff gegen Corona verfügbar ist, wird es wahrscheinlich noch bis zum nächsten Jahr dauern.

Balanced: Wann es einen Impfstoff gegen Corona geben wird, kann niemand genau vorher-sagen.

Optimistic: Ein Impfstoff gegen Corona könnte bald gefunden werden.

Baseline: Ein von Raketen unabhängiger Antrieb könnte Wissenschaftlern zu neuen Erken-ntnissen verhelfen. Ob und wann dies geschehen wird, kann niemand vorhersagen.

Die drei Entscheidungsblöcke sind nun beendet. Im Folgenden erhalten Sie noch die Möglichkeit, mit Schätzfragen eine zusätzliche variable Vergütung zu erspielen.

Sie werden nun drei Schätzfragen gestellt bekommen, bei denen Sie Prognosen über die En-twicklung von Kennzahlen bis zum 3. Juli 2020 (in 60 Tagen) abgeben sollen. Pro Frage werden drei Teilnehmende ausgelost und für ihre Prognose ausgezahlt. Je näher der Schätzw-ert an dem tatsächlich realisierten Wert liegt, desto höher die Auszahlung. Sie können mit Ihrer Prognose bis zu 20€ gewinnen.

Beachten Sie: Ihre Auszahlung ist unabhängig davon, was andere Teilnehmende schätzen. Sie sollten daher bei jeder Schätzfrage den Wert angeben, den Sie für am wahrschein-lichen halten. Bei der Ermittlung der Gewinnerinnen und Gewinner wird nur eine Ihrer drei Antworten einbezogen. Das heißt, Sie können Ihr Risiko nicht streuen und nicht mehrfach gewinnen.

Zur Auswertung werden die Zahlen des Robert Koch Instituts (RKI) und der Deutschen Börse herangezogen.

- Was glauben Sie: Wie viele bestätigte Corona-Fälle wird es am 3. Juli 2020 in Deutschland geben (in 60 Tagen)? [*open text box*] Am 3. Mai 2020 gab es laut RKI 162 496 bestätigte Corona-Fälle in Deutschland.
- Was glauben Sie: Wie viele bestätigte Todesfälle durch Corona wird es am 3. Juli 2020 in Deutschland geben (in 60 Tagen)? [*open text box*] Am 3. Mai 2020 gab es laut RKI rund 6 649 bestätigte Corona-Todesfälle in Deutschland.
- Was glauben Sie: Mit wie vielen Punkten wird der Dax am 3. Juli 2020 schließen (in 60 Tagen)? [*open text box*] Am 3. Mai stand der Dax bei 10 828 Punkten.

Denken Sie an Ihre eigenen Belange in den nächsten Wochen. In welchem Ausmaß erwarten Sie, dass sich die Dinge zum Positiven oder zum Negativen entwickeln werden?

Denken Sie an die nächsten Tage. Für wie wahrscheinlich halten Sie es, dass...

- ... Sie nur Wege antreten, die sich auf keinen Fall vermeiden lassen (z.B. zur Apotheke oder zum Supermarkt)? [sehr unwahrscheinlich / eher unwahrscheinlich / unentschlossen / eher wahrscheinlich / sehr wahrscheinlich]
- ... Sie in der Öffentlichkeit immer eine Gesichtsmaske tragen? [sehr unwahrscheinlich / eher unwahrscheinlich / unentschlossen / eher wahrscheinlich / sehr wahrscheinlich]
- ... Sie an privaten Feiern teilnehmen oder sich mit mehr als einer Person treffen (die nicht mit Ihnen zusammenlebt)? [sehr unwahrscheinlich / eher unwahrscheinlich / unentschlossen / eher wahrscheinlich / sehr wahrscheinlich]
- ... Sie öffentliche Verkehrsmittel benutzen? [sehr unwahrscheinlich / eher unwahrscheinlich / unentschlossen / eher wahrscheinlich / sehr wahrscheinlich]
- ... Sie Personen treffen oder besuchen, die zur einer Risikogruppe bzgl. Corona gehören? [sehr unwahrscheinlich / eher unwahrscheinlich / unentschlossen / eher wahrscheinlich / sehr wahrscheinlich]

Wie häufig haben Sie sich in den letzten Tagen über die Auswirkungen des Coronavirus informiert?

[Nie / Selten / Ab und zu / Eher häufig / Sehr häufig]

Sollten Ihrer Meinung nach die derzeit ergriffenen politischen Maßnahmen zur Eindämmung des Coronavirus gelockert oder verschärft werden?

[Deutlich gelockert / Eher gelockert / Weder noch / Eher verschärft / Deutlich verschärft]

Danke! Zuletzt nun noch ein paar kurze Fragen zu Ihrer Person.

- Wie alt sind Sie? []
 - Welchem Geschlecht fühlen Sie sich zugehörig? [männlich / weiblich / divers]
 - Was ist Ihr Studienfach? (Bei mehreren Fächern: Hauptfach) [alle Fächer die an der Universität zu Köln studiert werden können]
 - Was ist Ihr höchster Bildungsabschluss? [Kein allgemeiner Schulabschluss / Hauptschule / Realschule / Abitur / Meister oder Fachwirt / Bachelor / Diplom oder Magister / Master / Staatsexamen / Promotion]
 - Wie viel Geld haben Sie monatlich zur Verfügung? (netto) [weniger als 500 Euro / 500 Euro - 750 Euro / 750 Euro - 1000 Euro / 1000 Euro - 1250 Euro / 1250 Euro - 1500 Euro / 1500 Euro - 1750 Euro / 1750 Euro - 2000 Euro / mehr als 2000 Euro]
 - Mit welcher politischen Partei identifizieren Sie sich am stärksten? [CDU-CSU / SPD / AfD / FDP / Die Linke / Bündnis90-Die Grünen / Andere / Keine]
 - Falls Sie an Corona erkranken sollten: Gehören Sie zu einer Gruppe von Menschen mit erhöhtem Risiko für einen schweren Verlauf? [ja / nein / weiß ich nicht]
-

Vielen Dank für Ihre Antworten! Zur Auszahlung Ihrer Vergütung benötigen wir nun die Email Adresse von Ihrem PayPal Account.

Sobald ihre Auszahlung abgeschlossen ist, wird Ihre Email Adresse gelöscht und Ihre Daten werden anonymisiert gespeichert.

[box to enter email address]

Bitte klicken Sie auf weiter, um Ihre Auszahlung zu sehen.

Vielen Dank für Ihre Teilnahme! Sie erhalten für Ihre Teilnahme eine garantierte Mindestteilnahmevergütung von 2.50 Euro. Ihre variable Vergütung ergibt sich wie folgt: Von den drei Fragen zu dem Anfangstext haben Sie X Frage(n) korrekt beantwortet. Das ergibt eine zusätzliche Auszahlung von X Euro. Für Sie wurde zufällig Block X ausgewählt. [Details über variable Auszahlung] Sie erhalten heute eine Auszahlung von X Euro über Ihren PayPal Account.

Die Ergebnisse der Schätzfragen werden am 04. Juli 2020 auf der Homepage des Staatswissenschaftlichen Seminars (<https://behavecon.uni-koeln.de>) bekannt gegeben. Die Gewinnerinnen und Gewinner werden anschließend per PayPal ausgezahlt.