Trading Liberties: Estimating Covid policy preferences from conjoint data

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A Sample & Recruitment

Our population of interest consists of all German citizens aged 18 to 75 years. We fielded a multi-wave panel from which we use data from 4 in this study. In the first wave of the panel, the sample was nationally representative according to age, sex and region ($N = 20,500$). Since we have attrition between the different waves, it is important to note that we do not have a representative sample of the German population (see Table A1). In wave 4 we implemented a refreshment sample which again was nationally representative according to age, sex and region ($N = 2,125$).

For the experiment, we rely on a sample of $N = 10,525$ respondents from wave 4 which consists of $N = 8,400$ panel participants and $N = 2,125$ respondents from the refreshment sample. The experiment was conducted from 8 until 22 September 2021. For recruitment, we relied on the online access panel of the survey company Respondi who uses online and offline channels to recruit new panelists for its online panel. Panelists receive a compensation from Respondi for completing the survey. In wave 4, the incentive was EUR 0.95 for a median LOI of approximately 19 minutes for the panel respondents and EUR 1.15 for a median LOI of approximately 23 minutes for the refreshment sample.

A.1 Vaccination rate

In our sample, 84% were vaccinated, 3% would accept a vaccine, 4% were undecided, and 9% would refuse to get vaccinated. This vaccination rate differs from the official data, but corresponds to reported vaccination uptake in surveys conducted by the Robert Koch Institute, Germany's public health agency. The official vaccination rate in Germany reported by the Digital Immunization Monitoring of the Robert Koch Institute (RKI) on September, 22 2021 was 68.5%. The RKI also conducted a telephone survey (26.07.21 - 18.08.21) and reported a vaccination rate of 87.5 %. Taking account of multiple considerations the RKI estimates the actual vaccination rate on October, 6th 2021–two weeks after the survey data for this study was collected–at 84% (Robert Koch-Institut). Accordingly, the vaccination rate in our sample is largely in line with official estimates of the population vaccination rate.

Table A1: Summary statistics

Variable	Statistical-office	Wave 4 Main	Wave 4 Refreshment
Male	0.50	0.56	0.50
18-29	0.18	0.10	0.18
30-39	0.18	0.15	0.17
40-49	0.16	0.19	0.18
50-59	0.22	0.26	0.23
60-75	0.26	0.30	0.25
Baden Wuerttemberg	0.13	0.12	0.13
Bavaria	0.16	0.16	0.16
Berlin	0.04	0.05	0.04
Brandenburg	0.03	0.03	0.03
Bremen	0.01	0.01	0.01
Hamburg	0.02	0.02	0.02
Hesse	0.08	0.07	0.07
Mecklenburg-Vorpommern	0.02	0.02	0.02
Lower-Saxony	0.10	0.10	0.10
North-Rhine-Westphalia	0.22	0.22	0.22
Rhineland-Palatinate	0.05	0.05	0.05
Saarland	0.01	0.01	0.01
Saxony	0.05	0.05	0.05
Saxony-Anhalt	0.03	0.03	0.03
Schleswig-Holstein	0.03	0.03	0.03
Thuringia	0.03	0.03	0.03

B External Validity of Conditions

We designed our background conditions with reference to the actual Covid-19 incidence rates in Germany in the month prior to the study. As we can see in Figure A1, the 7 day incidences show a lot of variation when we look at the county level (Landkreise). Local incidence rates were as high or higher than our treatment levels in the first half of 2021. Data Source: COVID-19 case numbers for Germany,
(`https://github.com/jgehrcke/covid-19-germany-gae`)

It is very likely that respondents were familiar with these incidence levels because they were widely broadcasted on national TV and news media. New local "records" were reported in the media: "Update from January, 7th, 9.18 AM: With a 7-day incidence rate of 483,2 the county of Meißen in Saxony has the higest rate in Germany."[1]

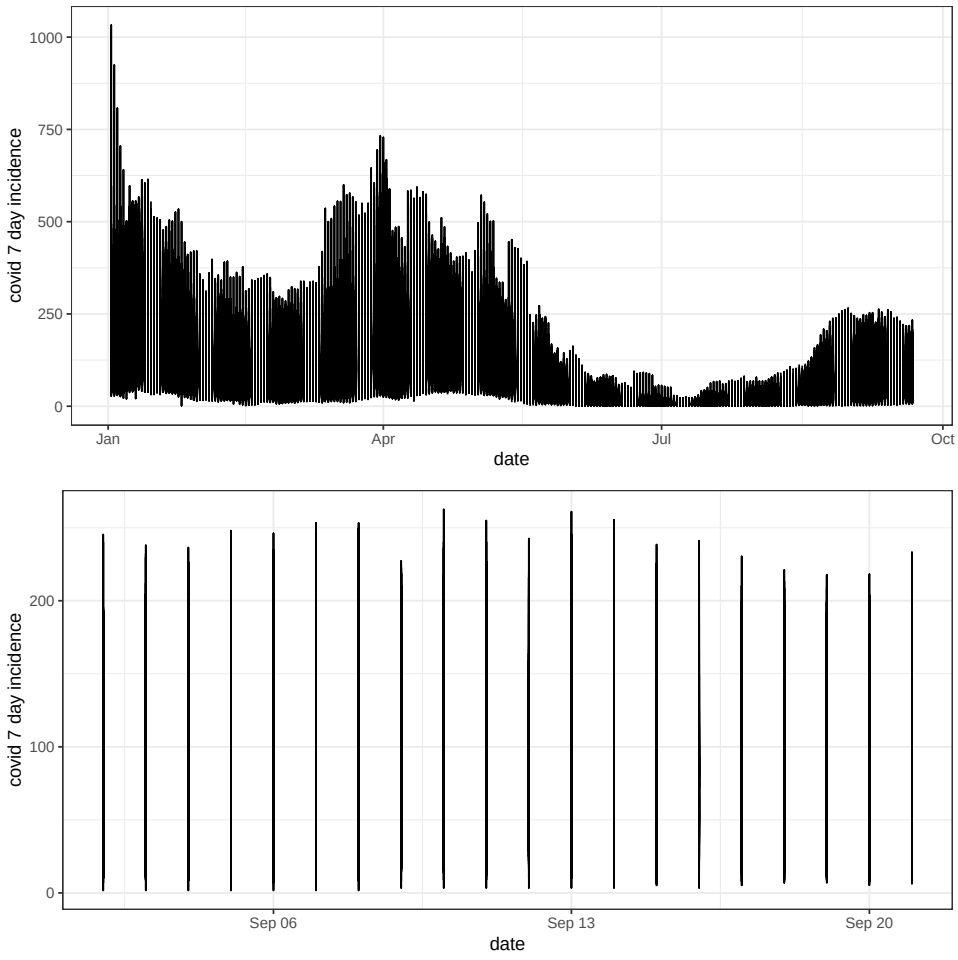

Figure A1: Covid 7 day Incidence by Date (Jan-Sept 2021). Data in collected on the level of counties (Kreise)

A large part of the media and politics anticipated a new wave of Covid-19 invections during the fall of 2021. Reports in the summer predicted an exponential growth of Covid-19 inventions

[1] See: `https://www.merkur.de/welt/corona-deutschland-sachsen-thueringen-zahlen-tote-impfung-weihnachten-inzidenz-news-zr-90158991.html`.

(a "fourth wave") in Germany for the fall 2021.[2] These reports were also prevalent at the time of the survey.[3] Prominent scientists also warned that the vaccination rate was too low and that new measures might be needed in the Fall.[4].

These trends are also reflected in the google search queries (see Figure A2). Queries about the "fourth wave" peak in July, but are still relevant during the time of the survey.

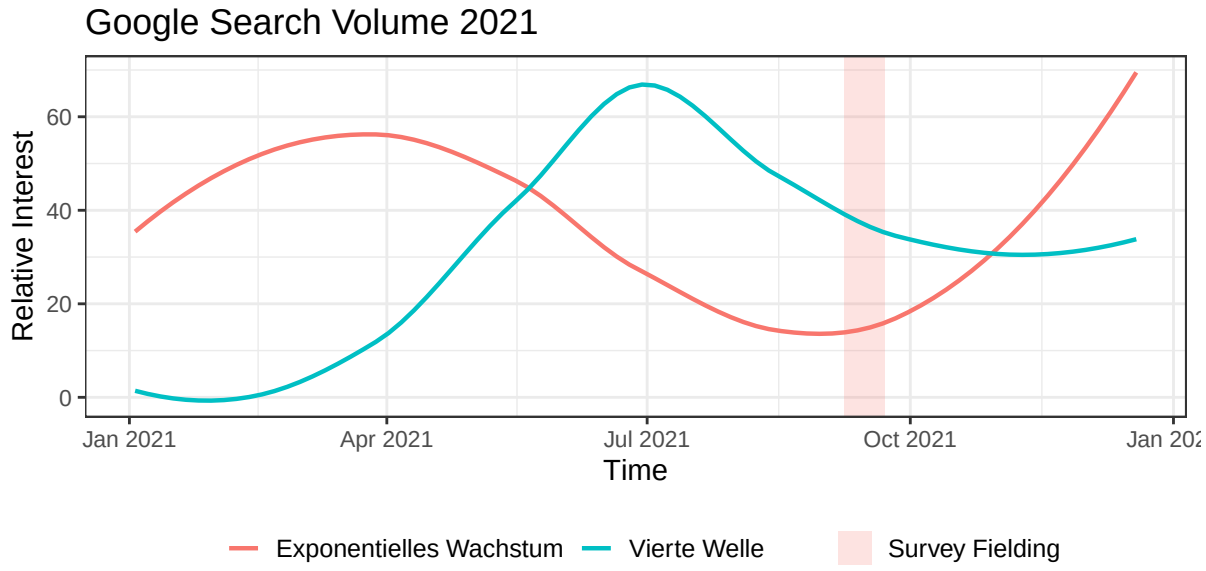

Figure A2: Google search queries within Germany of time. Via R gtrends

C Ethics

Ethical approval was obtained. We did not engage in deception and provided participants with no false information. The participants were aware of the hypothetical nature of the conditions. Unlike many field experiments, which seek to manipulate conditions, the goal of this survey experiment was to measure the the trade-offs participants support.

D Main Results

[2] https://www.spiegel.de/wissenschaft/corona-in-deutschland-wissenschaftler-erwarten-vierte-corona-welle-im-herbst-a-38281309-0019-4c62-9e10-15a092666325; https://www.faz.net/aktuell/politik/inland/corona-berliner-forscher-erwarten-vierte-welle-im-oktober-17442248.html

[3] See this news paper article from 8th of September. https://www.zeit.de/politik/deutschland/2021-09/corona-pandemie-rki-vierte-welle-verlauf-warnung.

[4] See: https://www.spiegel.de/wissenschaft/medizin/corona-pandemie-christian-drosten-erwartet-neue-kontaktbeschraenkungen-a-5985619c-43e0-4d1b-b89e-3b542d6860bc

	All			Vaccinated			Unvaccinated			
	Rating	Choice	Trust	Rating	Choice	Trust	Rating	Choice	Trust	Vaccination
Pandemic severity	0.002	−0.002	0.001	0.003	0.006	−0.003	−0.001	0.002	−0.004	0.002
	(0.002)	(0.004)	(0.002)	(0.006)	(0.010)	(0.004)	(0.002)	(0.003)	(0.004)	(0.002)
Policy stringency	0.002	−0.009*	0.010***	−0.091***	−0.161***	−0.042***	−0.002	0.019***	0.019***	0.019***
	(0.002)	(0.004)	(0.003)	(0.006)	(0.009)	(0.006)	(0.002)	(0.003)	(0.004)	(0.003)
Policy universality	−0.007**	−0.014***	−0.008***	−0.022***	−0.058***	−0.004	−0.005*	−0.003	−0.005	−0.009***
	(0.002)	(0.004)	(0.002)	(0.006)	(0.010)	(0.005)	(0.002)	(0.003)	(0.004)	(0.003)
Severity * Stringency	0.039***	0.058***	0.018***	0.026***	0.040***	0.012	0.008**	0.041***	0.060***	0.019***
	(0.003)	(0.005)	(0.003)	(0.007)	(0.012)	(0.007)	(0.003)	(0.003)	(0.005)	(0.003)
Severity * Universality	−0.006	−0.015**	−0.003	−0.005	−0.012	−0.010	−0.001	−0.006	−0.016**	−0.001
	(0.003)	(0.005)	(0.003)	(0.008)	(0.012)	(0.007)	(0.003)	(0.003)	(0.005)	(0.004)
Stringency * Universality	−0.003	−0.002	−0.004	0.001	0.011	−0.007	0.005	−0.004	−0.005	−0.003
	(0.003)	(0.005)	(0.003)	(0.007)	(0.012)	(0.007)	(0.003)	(0.003)	(0.005)	(0.004)
R^2	0.244	0.005	0.767	0.396	0.064	0.816	0.880	0.184	0.006	0.728
Adj. R^2	−0.009	−0.326	0.534	0.194	−0.249	0.630	0.840	−0.088	−0.325	0.455
Num. obs.	41480	41480	20740	6572	6572	3286	6572	34908	34908	17454
RMSE	0.354	0.576	0.213	0.331	0.559	0.181	0.130	0.356	0.576	0.218

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table A2: Main results, with interactions and individual fixed effects. 95 confidence intervals in square brackets. All treatments are centered on zero. Full sample of respondents.

E Conditional preferences

We prespecified a model where we estimate parameters for utility functions over three dimensions: the two policy dimensions and the severity dimension. However respondents in fact rated policy packages *conditional* on severity. For this reason a natural analysis estimates 2 dimensional utility functions, conditional on the stipulated severity. Doing so imposes fewer constraints and is more faithful to the experimental design, if not the pre-analysis plan.

In Figure A3 we show the results of this analysis. Qualitatively the results are similar, however we see here greater changes in salience of dimensions as severity of conditions changes.

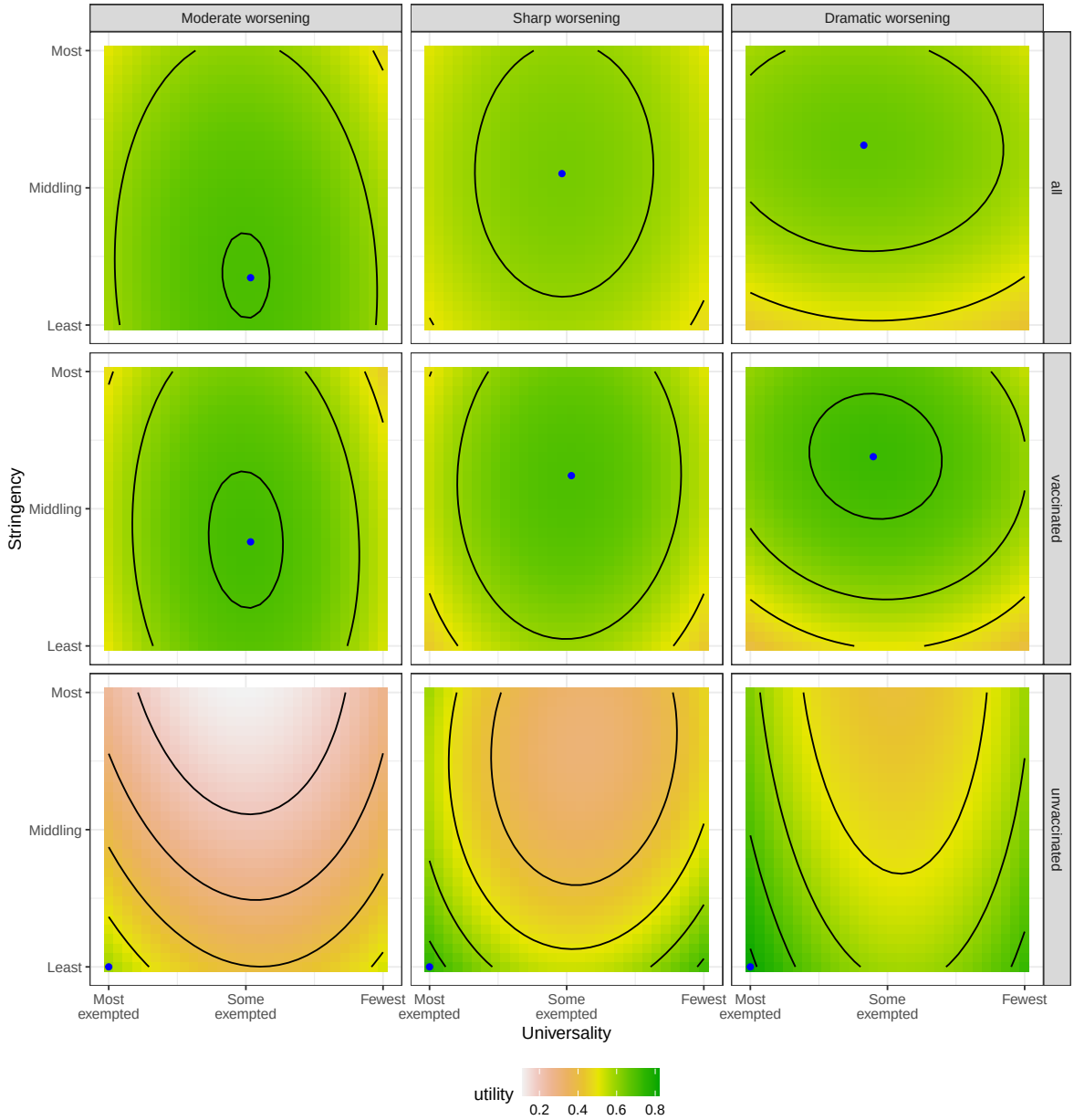

Figure A3: Version of Figure 2 with preferences defined over two dimensions conditional on severity

F Subgroup analysis

We have additionally analyzed ideals and indifference curves for representative members of six major political parties as well as occupation categories. Here we implement conditional analysis, as we did in section E.

For political parties the results in A4 suggest that the Left party places the most weight on social welfare (relative to individual freedoms). In contrast, supporters of two very different parties place more weight on freedoms, and are opposed to stringency under all severity conditions: the liberal party and the far right AfD party, which, while uncompromising on rights on this issue, is often represented as a threat to liberalism in Germany.[5]

[5]The AfD ideal on universalism switches between panels. Sharp movements are possible here for two reasons: first the indifference curves are nearly vertical, implying the AfD are primarily responding to severity while putting little weight on the universalism; second non-convex preferences can produce discontinuities in the location of ideals.

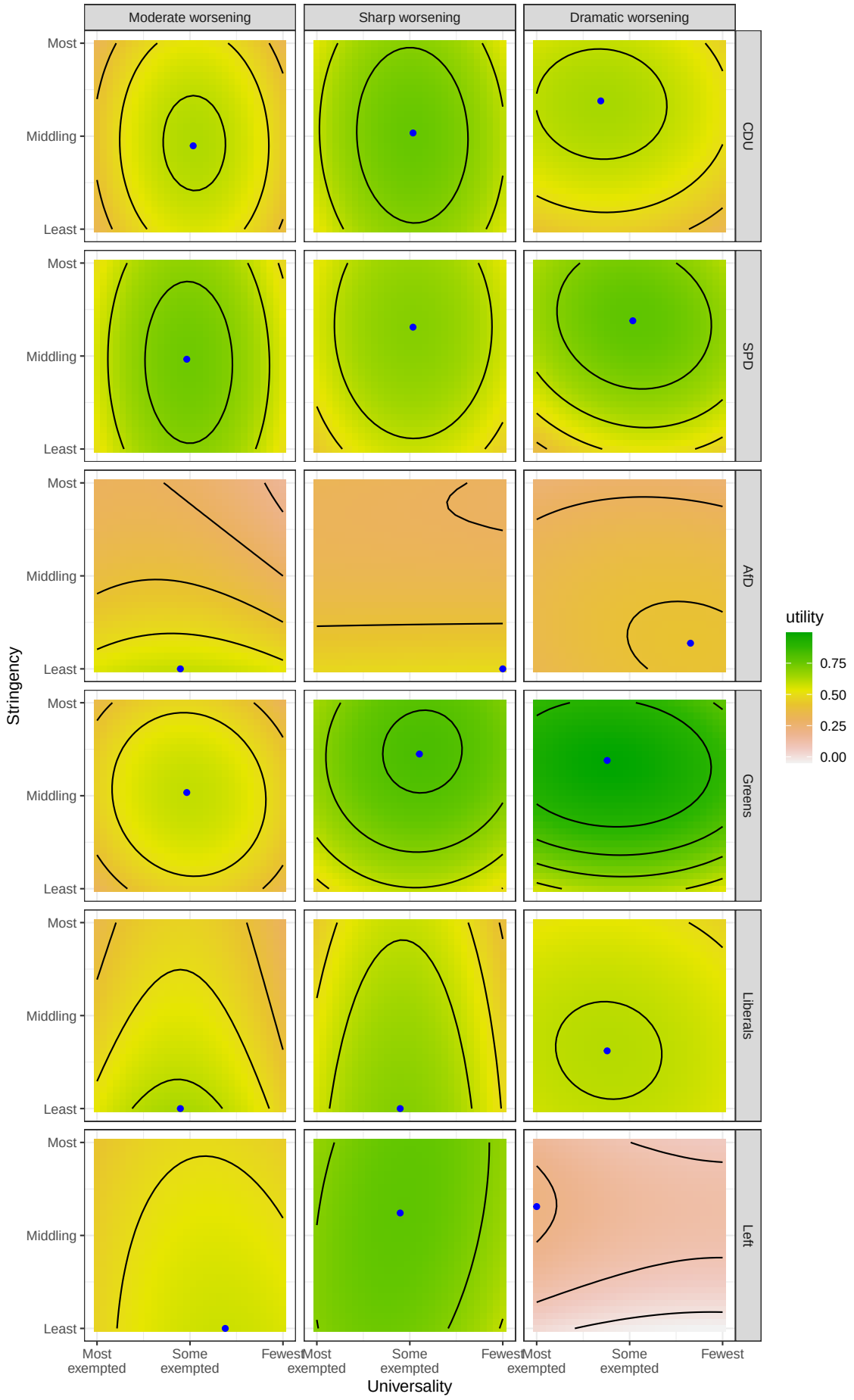

Figure A4: Ideals and tradeoffs of representative citizens supporting different political parties.

For occupations the results in A4 suggest that the tendency to support more stringent policies as severity increases holds for all occupational groups. Preferences for blue collar workers can be represented with a distance metric as, in most instances, can those of employees and civil servants, the chief violations occur for the self-employed, who are also the most disatisfied of the occupaitonal groups.

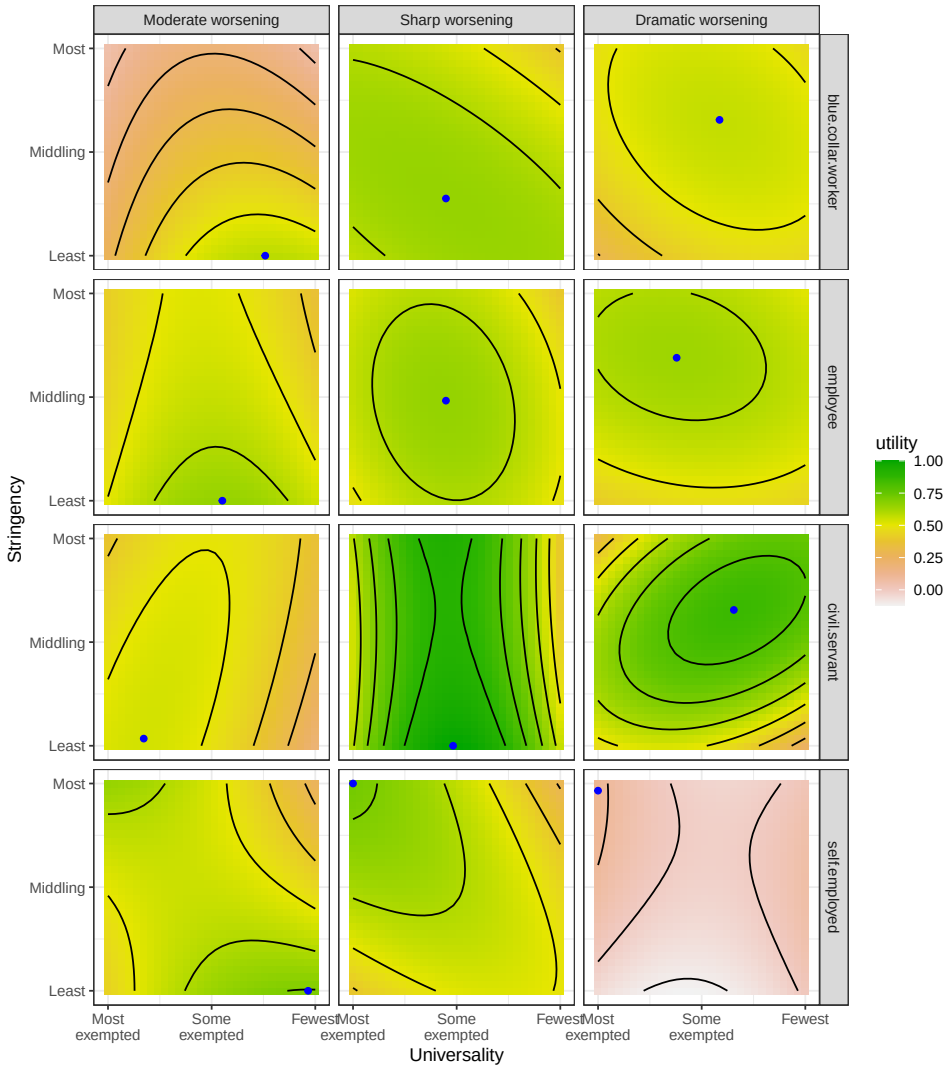

Figure A5: Ideals and tradeoffs of representative citizens from different occupations

G Implied weighting matrices

G.1 Figure 2

The implied weighting matrix for Figure 2 for the full sample is:

$$\begin{bmatrix} 0.063 & 0.001 & 0.003 \\ 0.001 & 0.042 & -0.02 \\ 0.003 & -0.02 & 0.003 \end{bmatrix}$$

For the vaccinated, it is:

$$\begin{bmatrix} 0.104 & 0.002 & 0.002 \\ 0.002 & 0.059 & -0.02 \\ 0.002 & -0.02 & 0.003 \end{bmatrix}$$

For the unvaccinated, it is:

$$\begin{bmatrix} -0.155 & 0 & 0.002 \\ 0 & -0.051 & -0.012 \\ 0.002 & -0.012 & -0.003 \end{bmatrix}$$

The violation of positive semi-definiteness for the unvaccinated is evident. For others there is a violation arising from the third dimension (severity).

G.2 Figure A3

The implied weighting matrices for Figure A3 are:

For the full sample given moderate wosening:

$$\begin{bmatrix} 0.064 & 0.001 \\ 0.001 & 0.039 \end{bmatrix}$$

Given sharp worsening:

$$\begin{bmatrix} 0.064 & 0.001 \\ 0.001 & 0.039 \end{bmatrix}$$

Given dramatic worsening:

$$\begin{bmatrix} 0.064 & 0.001 \\ 0.001 & 0.039 \end{bmatrix}$$

For the vaccinated given moderate wosening:

$$\begin{bmatrix} 0.106 & 0.002 \\ 0.002 & 0.056 \end{bmatrix}$$

Given sharp worsening:

$$\begin{bmatrix} 0.106 & 0.002 \\ 0.002 & 0.056 \end{bmatrix}$$

Given dramatic worsening:

$$\begin{bmatrix} 0.106 & 0.002 \\ 0.002 & 0.056 \end{bmatrix}$$

For the unvaccinated given moderate wosening:

$$\begin{bmatrix} -0.154 & 0 \\ 0 & -0.053 \end{bmatrix}$$

Given sharp worsening:

$$\begin{bmatrix} -0.154 & 0 \\ 0 & -0.053 \end{bmatrix}$$

Given dramatic worsening:

$$\begin{bmatrix} -0.154 & 0 \\ 0 & -0.053 \end{bmatrix}$$

The policy weighting matrices are positive semidefinite for the full population and the vaccinated subpopulation but not for the unvaccinated subpopulation.

H External Validity: Other Populations

In terms of support of civil liberties, Alsan et al. showed that roughly 37 % of the respondents in Germany were unwilling to sacrifice their own freedoms during the COVID-19 crisis. The study found similar results for countries like the US, South Korea, The Netherlands and France. Their findings also suggests that Germans might be particularly sensitive to personal and public health concerns related to the pandemic. German respondents showed the highest association between the perceived health insecurity and the stated willingness to sacrifice civil liberties, only similar to respondents from Japan and the US. This evidence suggests that the effects of pandemic severity we find may constitute an upper bound, but might travel well to countries like the US and Japan.

I Survey questionnaire

We first asked the respondents about their willingness to get vaccinated prior to the treatment in order to be able to estimate heterogeneous effects for different subgroups of the population, namely those who are already vaccinated, those who refuse to get vaccinated, and those who are undecided. Including this pre-treatment question makes it possible to assess how restricting freedoms through vaccination passports are perceived in these different subgroups. To avoid priming or consistency biases, we tried to maximize the gap between asking the pre-treatment question about the willingness to get vaccinated and the administration of the survey experiment. More specifically, participants were asked right at the beginning of the questionnaire whether they are already vaccinated (Yes / No) and if not, whether they plan on getting vaccinated (Yes / No / Have not decided yet). A number of other questions on other Corona-related issues as well as on general political attitudes and political behaviour followed so that the attention of respondents was directed to other topics before exposing them to the experiment. Please see subsection I.4 for the wording of the survey experiment.

I.1 Pre-treatment Covariates

- **Text** First, we have a few questions about yourself.
- **Age** What is your date of birth?
  - _____
- **Sex** Please state your gender.
  - 1 female
  - 2 male
  - 3 other
- **ZIP Code** What's your zip code?
  - _____

I.2 COVID-19

- **Text** At the beginning of our survey, we are interested in your experiences and attitudes towards COVID-19 (coronavirus).
- **COVID-Vaccination** Did you already receive a COVID-19 vaccination?
  - 1 Yes

  - 2 No
  - 99 Don't Know

- **Filter** if **COVID-Vaccination** = 2
- **COVID vaccination readiness** Will you get vaccinated against COVID-19 (coronavirus)?
  - 1 Yes
  - 2 No
  - 3 Have not decided yet

I.3 Political attitudes and political behavior

- **Text**: The next questions are about you and your voting behavior
- **Party Identification** In Germany, many people tend to lean towards a particular political party for a long time, although they do vote for a different party from time to time. How about you: Do you lean towards a certain party in general? And if so, which one?
  - 1 CDU
  - 2 CSU
  - 3 SPD
  - 4 AfD
  - 5 Greens
  - 6 Liberals
  - 7 Left
  - 8 Other party: _____
  - 9 No party
- **Filter** if **Parteienidentifikation** NOT 9
- **Party Identification 2** Taken together, how strongly or how weakly do you tend towards the party ${Answer Previous}?
  - 1 very
  - 2 rather much
  - 3 some extent
  - 4 little
  - 5 not at all

I.4 Survey Experiment - Treatment

- **Infotext** Health experts estimate that around 90% of the population must be vaccinated to achieve herd immunity. However, currently only about 60 % are fully vaccinated in Germany (status: 30.08.2021). Politicians are therefore currently discussing various instruments for further combating the pandemic.

  Currently there is a 7 day incidence of 75 (status: 30.08.2021). The occupancy of intensive care beds in the years before COVID-19 was usually 75%. Imagine now that, absent further actions, experts were expecting that by November there would be:

{**Severity Pandemic** = 1 | 2 | 3}.

In the following we present two different suggestions on how to counteract such a development and would like to know your opinion on these suggestions.

- **Vignette** {**Severity of restrictions** = 0 | 1 | 2}. {**Concentration of costs** = 0 | 1 | 2}.
- **Severity Pandemic**
  - 1 Treatment: A worsening of the situation (7-Day-Incidence of 150 and an intensive care bed occupancy of 80 %)
  - 2 Treatment: A sharp worsening of the situation (7-Day-Incidence of 300 and an intensive care bed occupancy of 90 %)
  - 3 Treatment: A dramatic worsening of the situation (7-Day-Incidence of 800 and an intensive care bed occupancy of 100 %)
- **Severity of restrictions** What are the restrictions?
  - 0 Control: There are basic restrictions, such as wearing masks in public places.
  - 1 Treatment: There are significant restrictions in public life, such as a ban on going to restaurants or participating in cultural or sports events (e.g. theater, cinema, concerts, fitness studio, football stadium).
  - 2 Treatment: There are very strong restrictions in all areas of life, including strict contact restrictions in the private sphere, limitations on travel, and a night curfew.
- **Concentration of costs** Who do the restrictions apply to?
  - 0 Control: The restrictions do not apply to citizens who have been vaccinated or who can show proof of recovery or who can show negative results from a self-paid corona test conducted within the previous 24 hours.
  - 1 Treatment: The restrictions do not apply to citizens who have been vaccinated or who can show proof of recovery. (Negative corona tests are not sufficient except for individuals who cannot be vaccinated for health reasons.)
  - 2 Treatment: The restrictions apply to all citizens whether or not they are vaccinated, have recovered, or can provide tests.

I.5 Survey Experiment—Outcomes

- **Forced Choice:** Which of the two proposals above do you prefer?
  - Vignette 1
  - Vignette 2
- **Ratings** If you could vote on each of those proposals in a referendum, how likely is it that you would vote in favor or against each of the proposals? Please give your answer on the following scale from “definitely against” (0) to “definitely in favor” (10).
  - Vignette 1
    - 0 definitely against
    - 1
    - 2
    - 3
    - 4

        * 5
        * 6
        * 7
        * 8
        * 9
        * 10 definitely in favor
    - Vignette 2
        * 0 definitely against
        * 1
        * 2
        * 3
        * 4
        * 5
        * 6
        * 7
        * 8
        * 9
        * 10 definitely in favor

- **Filter** if **COVID-Vaccination** = 2
- **Vaccination Probability** Please use this scale to indicate how likely it is that you would be vaccinated against corona under these conditions.
    - Vignette 1
        * 0 I will definitely **not** be vaccinated against corona
        * 1
        * 2
        * 3
        * 4
        * 5
        * 6
        * 7
        * 8
        * 9
        * 10 I am sure to get vaccinated against corona
    - Vignette 2
        * 0 I will definitely **not** be vaccinated against corona
        * 1
        * 2
        * 3
        * 4
        * 5
        * 6
        * 7
        * 8
        * 9
        * 10 I am sure to get vaccinated against corona
- **Government trust** Suppose the Federal Government decided to implement the

following of the two proposals.

(- *PA: Insert Vignette here.*)

In that case, how much trust would you have in the Federal Government?

- 0 No trust at all
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 Complete trust

J Estimation

Causal Estimand. We seek to estimate the *average interaction effect* (AIE), representing the additional average causal effect induced by the treatment combination beyond the sum of the average causal effects separately attributable to each treatment.

Main Estimation. We estimate treatment effects using an OLS regression with individual level fixed effects and heteroskedasticity-robust standard errors:

$$\begin{aligned} Y_{it} &= \beta_0 + \beta_1 Z^1 + \beta_2 Z^2 + \beta_3 Z^3 + \\ &\quad \beta_3 Z^1 * Z^2 + \beta_4 Z^1 * Z^3 + \beta_5 Z^2 * Z^3 + \\ &\quad \beta_6 Z^1 * Z2 * Z^3 + \\ &\quad u_i + \epsilon_{it} \end{aligned}$$

where Y is a binary variable measuring the policy choice in each round ($t \in \{1,2\}$), each described by three factors Z^1 (severity), Z^2 (stringency), Z^3 (universality). Each factor are centered with 0 mean. Note that in this demeaned regression the constant captures the average outcome across all conditions and the coefficient on Z^1 captures the average effect of Z^1 across other conditions—not the effect of Z^1 when other conditions are at 0.

K Correlates of vaccine hesitancy

We found that 84% of respondents were vaccinated and 3% would accept a vaccine. Another 4% remained undecided and 9% would refuse to get vaccinated. The reported vaccination rate in our survey differs considerably from the official data, but corresponds to reported vaccination uptake in surveys conducted by the Robert Koch Institute (leading public health agency) which resulted in an ongoing debate about the validity of the official vaccination data.

Vaccine hesitancy in Germany, our data show, strongly reflects political and social divisions. Younger respondents and women are more likely to be undecided, but these relations are not substantively large. Similarly employment status, and professional position do little to explain hesitancy in Germany, though education is strongly (negatively) correlated with undecidedness and vaccine refusal. A constellation of measures of general trust, trust in institutions, and support for the populist right AfD political party powerfully explain refusal. A majority of the refusing respondents either support the AfD (20%) or support no party (37%). Among those accepting, there is just 3% support for the AfD and 21% support no party.

L Average Marginal Component effects

Analysis of the average marginal component effect (AMCE) of each factor level compared to the baseline category on policy support shows negative effects for the most universal policy (-0.027, $p < 0.001$), and positive effects for the category that excludes vaccinated and recovered citizens (0.075, $p < 0.001$). Similarly, we find positive effects for moderate restrictions (0.077, $p < 0.001$) and negative effects for severe restrictions (-0.018, $p < 0.05$).

	All			Unvaccinated			
	Rating	Choice	Trust	Rating	Choice	Trust	Vaccination
Sharp Worsening	0.004	0.001	−0.002	0.002	−0.004	0.014	−0.005
	(0.005)	(0.008)	(0.004)	(0.011)	(0.019)	(0.009)	(0.005)
Dramatic Worsening	0.008	0.003	0.004	0.014	0.026	−0.006	0.000
	(0.005)	(0.008)	(0.004)	(0.011)	(0.019)	(0.009)	(0.004)
Some exemptions	0.058***	0.075***	0.035***	−0.173***	−0.265***	−0.052***	−0.009*
	(0.005)	(0.008)	(0.005)	(0.010)	(0.018)	(0.011)	(0.004)
Fewest exemptions	−0.013**	−0.027***	−0.018***	−0.036**	−0.106***	−0.004	−0.009*
	(0.005)	(0.008)	(0.005)	(0.012)	(0.019)	(0.010)	(0.005)
Moderate Restrictions	0.041***	0.077***	0.034***	−0.146***	−0.206***	−0.071***	−0.005
	(0.005)	(0.008)	(0.006)	(0.011)	(0.019)	(0.012)	(0.005)
Severe Restrictions	0.004	−0.018*	0.020***	−0.186***	−0.327***	−0.084***	−0.005
	(0.005)	(0.008)	(0.006)	(0.011)	(0.019)	(0.011)	(0.005)
R^2	0.247	0.011	0.770	0.429	0.095	0.820	0.880
Adj. R^2	−0.004	−0.318	0.539	0.238	−0.208	0.639	0.840
Num. obs.	41480	41480	20740	6572	6572	3286	6572
RMSE	0.353	0.574	0.212	0.322	0.550	0.179	0.130

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table A3: AMCE, with individual fixed effects. 95 confidence intervals in square brackets. First four columns employ data on all respondents; last four on unvaccinated respondents only.Full sample of respondents.

M Results refreshment sample

As mentioned above, our population of interest consists of all German citizens aged 18 to 75 years. We rely on a sample of 10,525 respondents that were questioned from 8 until 22 September 2021. 8,400 of these respondents had already participated in three prior waves while 2,125 were questioned for the first time. In order to check to what extent the sample may have suffered from panel attrition, we have rerun the analyses separately for the panel component (N=8,400) and the freshly drawn random sample (N=2,125). Overall, the results look similar (see replication file). The point estimates for the interaction of severity and stringency almost identical for policy choice (0.056, $p < 0.001$), policy rating (0.043, $p < 0.001$), trust (0.025, $p < 0.001$), and vaccination probability (0.012, $p < 0.05$). The point estimate for policy stringency on policy choice is negative (-0.018, $p < 0.05$). However, there are differences. The effect of policy stringency on trust is positive (0.006) and not statistically significant. While the point estimates for policy universality are all negative–like in the main analysis–, only the effect on vaccination probability is statistically significant (-0.014, $p < 0.01$). The interaction effect of severity and universality on policy choice is positive (0.003) and not significant. The coefficient of policy stringency on trust is positive (0.006)–like in the main analysis–but not significant.

Importantly, Figure A6 documents that there is no substantive difference in terms of ideals and trade-off.

	All			Unvaccinated			
	Rating	Choice	Trust	Rating	Choice	Trust	Vaccination
Pandemic severity	0.000	0.001	0.007	−0.001	0.005	0.005	0.004
	(0.006)	(0.009)	(0.005)	(0.012)	(0.020)	(0.010)	(0.005)
Policy universality	−0.003	−0.008	−0.007	−0.017	−0.027	−0.013	−0.014**
	(0.006)	(0.009)	(0.005)	(0.012)	(0.020)	(0.012)	(0.005)
Policy stringency	−0.008	−0.018*	0.006	−0.109***	−0.164***	−0.046**	−0.002
	(0.006)	(0.009)	(0.006)	(0.013)	(0.020)	(0.014)	(0.005)
Severity * Stringency	0.043***	0.056***	0.025***	0.046**	0.050*	0.030	0.012*
	(0.007)	(0.010)	(0.007)	(0.015)	(0.024)	(0.016)	(0.006)
Severity * Universality	0.006	0.003	0.000	−0.031	−0.083***	−0.044**	0.000
	(0.007)	(0.011)	(0.008)	(0.016)	(0.024)	(0.017)	(0.006)
Stringency * Universality	−0.004	−0.011	−0.008	0.014	0.016	0.000	0.004
	(0.007)	(0.011)	(0.007)	(0.016)	(0.025)	(0.017)	(0.006)
Triple interaction	0.007	−0.017	−0.003	0.025	−0.020	−0.002	−0.010
	(0.008)	(0.013)	(0.009)	(0.020)	(0.030)	(0.022)	(0.008)
R^2	0.227	0.005	0.744	0.406	0.074	0.777	0.856
Adj. R^2	−0.031	−0.327	0.486	0.203	−0.242	0.547	0.807
Num. obs.	8484	8484	4242	1444	1444	722	1444
RMSE	0.365	0.576	0.225	0.336	0.557	0.203	0.137

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table A4: Main results, with interactions and individual fixed effects. 95 confidence intervals in square brackets. All treatments are centered on zero. First four columns employ data on all respondents; last four on unvaccinated respondents only. Refreshment Sample

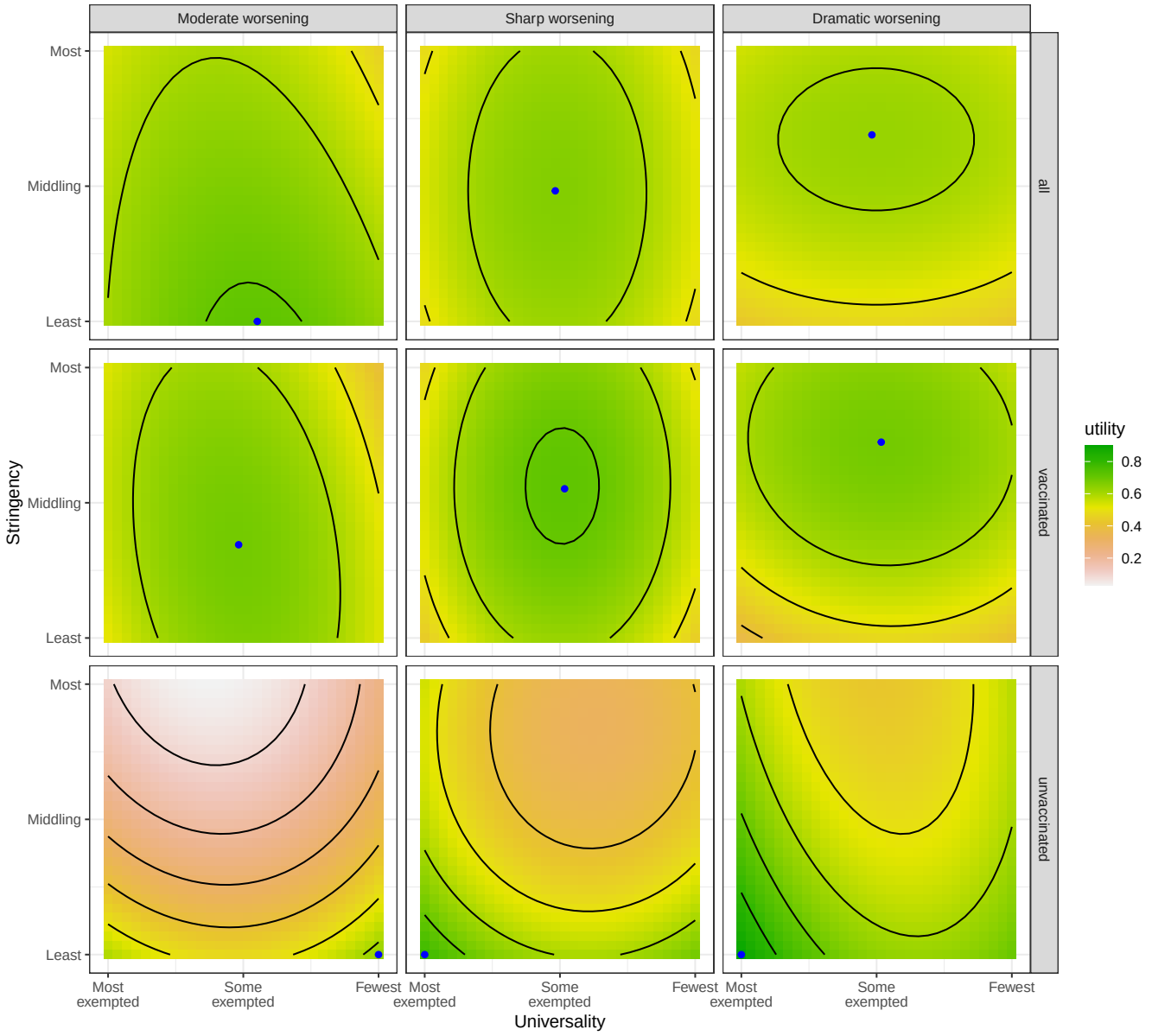

Figure A6: Ideals and tradeoffs refresher sample

N Fitted Values

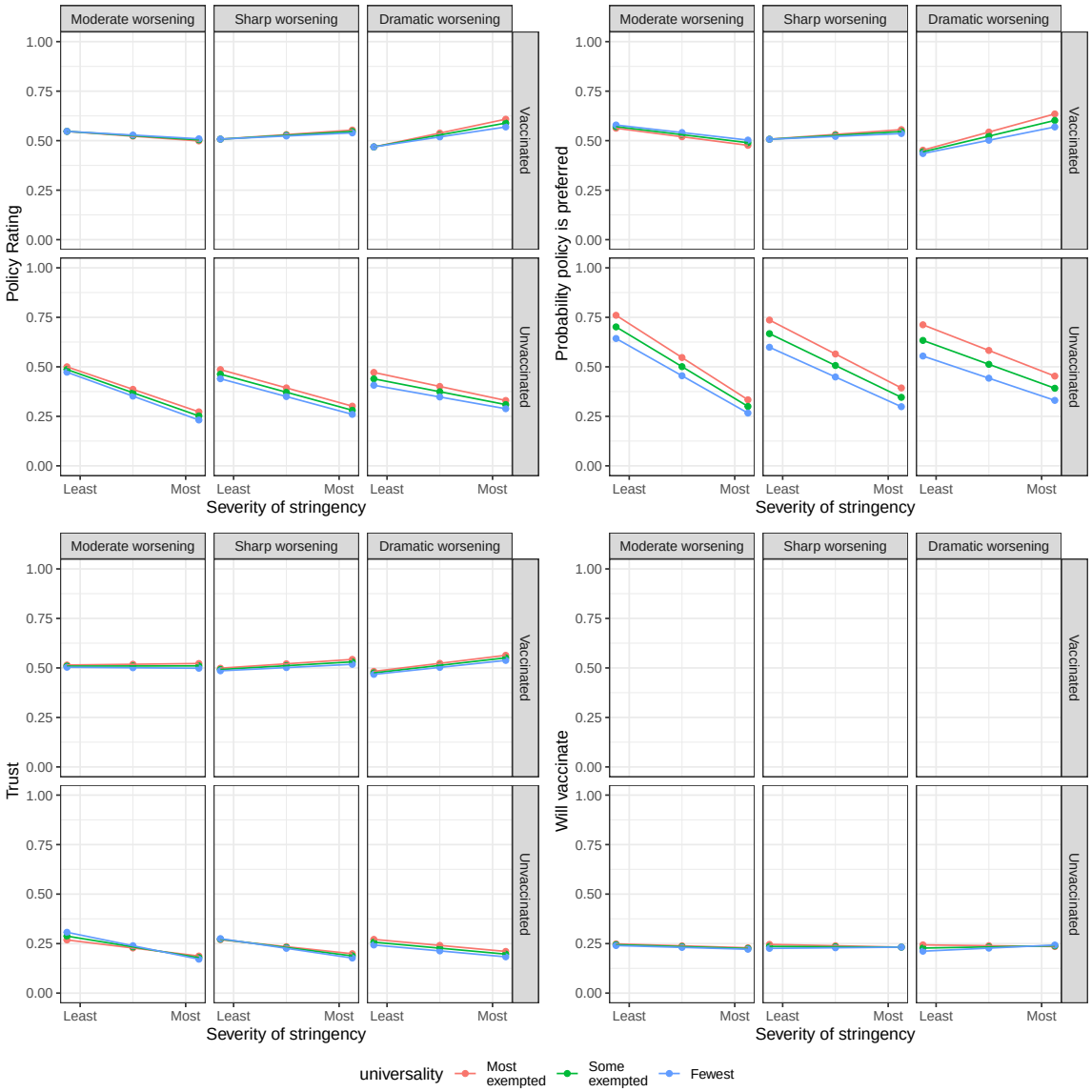

Figure A7: Fitted Values

O Preanalysis plan (PAP) reconciliation

Main analysis

Implemented in Figure 1 according to PAP specification

Structural analysis

Analysis is implemented as described in PAP though using `fixest` instead of `lm_robust` (these perform identically, though the former is faster and now integrated with our accompanying `cjEuclid` package)

Graphical presentation in Figure 2 interpolating over the 3*3 space unlike illustration in PAP

Heterogeneous effects

We specified heterogeneous effects analysis according to (a) vaccination / past exposure status and (b) occupation (sensitivity to severe conditions imposed on others). These are both implemented though only (a) is discussed in the text. (b) is in supplementary material.

In addition, effects by party are analysed (not in PAP) and these are reported in supplementary material.

Additional analysis

We noted in the PAP an interest in developing a random effects model as supplementary analysis, this has not been implemented We noted in the PAP an interest in an exploratory causal forests analysis, this has not been implemented

References

Alsan, Marcella, et al. *Civil liberties in times of crisis*. Tech. rep. National Bureau of Economic Research, 2020.

Robert Koch-Institut. *COVID-19 Impfquoten-Monitoring in Deutschland (COVIMO), Report 7*. https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Projekte_RKI/COVIMO_Reports/covimo_studie_bericht_7.pdf?__blob=publicationFile, 2021.