

# ONLINE APPENDIX

## Influence Motives in Social Signaling: Evidence from COVID-19 Vaccinations in Germany

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### Appendix A Experimental Details

In this section, we provide more details on our experimental design allowing us to disentangle influence motives from social pressure effects. We pre-registered all features of our experimental design at the AEA RCT registry under ID AEARCTR-0007437 before the experiment commenced.<sup>1</sup> The experiment was approved by the Ethics Committee of the Department of Economics at LMU Munich, protocol 2021-01. We begin by discussing our sample in more detail and continue by illustrating the experimental design at greater length. In the final subsection, we discuss the assignment of Senders and Receivers to our experimental conditions and show that Senders' predetermined characteristics are balanced across these conditions.

#### A.1 Sample

We recruited participants for our survey from CINT, an online panel provider. During our experiment's field time in April 2021, approximately 15 percent of the Bavarian population had already received at least one vaccination and a further 30 percent had registered in the central system. We exclude both of these groups from our experiment by screening them out at the start of our survey. In total, 1,857 participants completed our experiment, for which we report summary statistics on their characteristics in Appendix Table C.2: 51 percent of our participants reported to be willing to get vaccinated against COVID-19 at some point (elicited pre-treatment), which is – due to our exclusion of already vaccinated and registered individuals – somewhat lower than the vaccination willingness of 65 percent elicited in a nationally representative study at the same point in time (Betsch, Wieler and Habersaat 2020; COSMO 2021). Roughly half of our sample is female; mean age and monthly net income are 40.9 years and €2,907, respectively, compared to the official state averages of 43.7 years in 2017 (Bayerisches Landesamt für Statistik 2019) and €2,549 in 2018 (GESIS – Leibniz-Institut für Sozialwissenschaften 2019). Hence, our sample seems suitably representative of the Bavarian population as a whole.

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<sup>1</sup>In our pre-analysis plan, we referred to the behavioral motive of interest as “anticipated peer effects”; we have since changed our terminology to “influence motives”.

## A.2 Implementation

For the technical implementation of our online experiment, we used the open-source software oTree which allows us to let participants interact during our survey in real time (Chen, Schonger and Wickens 2016). Our survey was hosted on a HEROKU server in Germany.

## A.3 Survey Design and Treatments

**1. Introduction** Prior to starting the survey, participants invited by the online panel provider are informed that they are about to take part in a scientific survey studying attitudes towards COVID-19 vaccinations. They then receive information on data protection and are asked to consent to these terms and their participation in the survey. We begin by screening out all participants who indicate to have already been vaccinated or registered for a COVID-19 vaccination. From all remaining participants we collect basic demographic information as well as a rich set of attitudes, beliefs, and preferences related to the vaccination. For example, we elicited participants beliefs about the safety and efficacy of the vaccine as well as their beliefs about the social desirability of taking such vaccine. To elicit attitudes and beliefs related to COVID-19, we rely on pre-tested survey items adopted from the COVID-19 Snapshot Monitoring project (COSMO 2021).

**2. Joint problem solving task** Before entering the main stage of the experiment, we build teams consisting of two randomly paired participants. Within teams, participants are randomly assigned either to the role of Sender (she) or Receiver (he). Teams work on a joint problem solving task adopted from Götte and Tripodi (2021) which we use to induce social proximity between the partners and to allow participants to verify that they are interacting with a human subject and not a chatbot. The task consists of four consecutive questions, in which teams are presented with historical paintings and are asked to select the corresponding artist from a list. Each correct answer increases participants' probability of winning an Amazon voucher, but only if their partner selects the correct artist as well. To allow for coordination between partners, we provide them with the option to exchange text messages.<sup>2</sup> Participants are informed as to whether they won any of the vouchers on the final page of the survey.

**3. Social proximity** After the joint task, we again follow Götte and Tripodi (2021) and elicit perceived social proximity between partners using the "oneness" scale (Cialdini et al. 1997), as a fast and simple way of measuring relationship closeness.<sup>3</sup> Gächter, Starmer and Tufano (2015) confirm the original results underlying the "oneness" scale in a large general-population sample and conclude that it is a useful tool to meaningfully measure social proximity without the need to draw on more elaborate relationship inventories. In Appendix Table C.6, we show that the "oneness"

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<sup>2</sup>We present a screenshot of the joint problem solving task showing a sample painting and the chat window in Figure D.6 in Appendix Appendix D.

<sup>3</sup>The oneness scale is computed as the mean of the Inclusion of Other in the Self (IOS) scale (A. Aron, E. N. Aron and Smollan 1992) and the (ii) WE scale (Cialdini et al. 1997). We provide screenshots of how we elicited the oneness scale in Appendix Figure D.7.

scale correlates as expected with plausible predictors of social proximity: Senders report higher levels of social proximity to their partner if their partner shares the same gender or educational level. At the same time, reported social proximity declines in larger age and income differences. Partner (dis-)similarity in age and in gender – the two key characteristics participants were told about their partner – are the strongest predictors of our social proximity measure.

**4. Treatment** Next, teams enter the experiment’s treatment stage, where we use two experimental manipulations to identify influence motives in Senders’ decision to sign up for a COVID-19 vaccination: we vary (1) whether the Sender’s decision to register for a COVID-19 vaccination is reported to the Receiver and (2) whether this happens before or after the Receiver’s decision.

The main intuition of our design is illustrated in Appendix Figure B.1. For each experimental condition, we report the treatment instructions shown to the Sender and the corresponding decision sequence as implemented in the experiment. Irrespective of the condition to which we assigned teams, Senders were always offered the opportunity to sign up for the vaccination before Receivers and were explicitly told that they would not learn about the decision of their partner afterwards.

In the “*not informing partner*” condition, we inform Senders that their decision on whether to register for a vaccination will not be reported to their partner. As a result, neither influence motives nor social pressure effects should affect Senders’ registration decisions.

In the “*informing partner after*” condition, Senders learn that their decision will be shared with their partner. However, we highlight to Senders that their partner will only be informed about their registration decision once he (the partner) has already taken his own registration decision. Therefore, while social pressure effects may arise, Senders cannot influence their partner’s decision within the experiment and, consequently, influence motives should play no role in this condition.

In the third and final condition, “*informing partner before*”, we inform Senders that their partner will learn about their registration decision *before* he takes his own registration decision. As in the previous condition, Senders in this condition are subject to social pressure effects. On top, Senders should infer that they can now influence their partner’s registration decision within the experiment and update their beliefs about their potential impact on their partner’s decision accordingly. Hence, by comparing Senders’ willingness to sign up for a vaccination between Senders who can (“*informing partner before*”) and those who cannot (“*informing partner after*”) influence their partner’s registration decision, we can separate influence motives from social pressure effects in social signaling.

Irrespective of the experimental condition, all Receivers are equally informed that they will decide after their Sender but do not learn *ex ante* whether and when they will be informed about their partner’s decision. This abstracts from any differential anticipated behavior among Receivers and allows for the estimation of a treatment effect on Receivers only caused by differences in Sender behavior. While Senders take their decision, all Receivers are directed to a waiting page where they remain for a maximum of 60 seconds before they can continue with the next question.

Only then are Receivers in the “*informing partner before*” condition informed about the Sender’s registration decision and can register themselves. In contrast, Receivers in the “*informing partner after*” condition directly move on to their own registration decision and are only informed about their partners’ decision thereafter.

**5. First stage** Subsequently, we ask Senders how likely they think it is that they can influence their partner’s registration decision using a slider ranging from 0 to 100. We use this metric to obtain an estimate of the first-stage effect of our manipulations on Senders’ beliefs about their impact on their partner’s registration decision.

**6. Main outcome** Next, we elicit our main outcome by asking participants whether they wished to sign up for a COVID-19 vaccination right away. If participants answered “yes”, they were forwarded to the official registration website (BayIMCO) outside of our survey.<sup>4</sup> Participants who responded “no” were forwarded to the next module of our survey. On average, it took participants in our experiment five to six minutes to complete the online registration form. Once participants completed the form, they obtained an email from BayIMCO officially confirming their registration. We use this confirmation email to verify whether participants indeed registered for a vaccination by asking them to enter the sending address and the subject line in a survey form. For this task, we incentivized participants by informing them that by reporting both pieces of information correctly they would qualify for one of 30 additional €20 Amazon vouchers. Once participants had entered their information, their responses were checked by our system. If both answers were correct, a lottery determined whether participants obtained one of the Amazon vouchers. Participants only learned whether they had won any of the Amazon vouchers after they had answered all questions, i.e., on the final page of the survey.

The timing of the steps we used to elicit whether participants actually signed up for the vaccination is crucial in this context: when we offered participants the opportunity to sign up for the vaccination, participants did not know that we would ask them to provide proof of their registration. We informed participants about the confirmation and the corresponding remuneration only after they had reported to us that they successfully completed the registration. Hence, participants did not have an incentive to misreport their registration in order to qualify for one of the vouchers. One may still worry that participants misreporting their registration status tried to find out the address and the subject line of the confirmation email to nevertheless qualify for one of the vouchers. It is, however, very unlikely that participants successfully managed to cheat, since the address from which the confirmation email was sent changed over time. Even if participants found a screenshot of the confirmation email by searching the internet, the screenshot had to be fairly recent to keep up with the changes of the confirmation email over time.

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<sup>4</sup>In Appendix D.6 we provide screenshots illustrating how we elicited and confirmed whether participants signed up for a COVID-19 vaccination via BayIMCO.

**7. Further outcomes** Finally, we collect post-treatment attitudes and beliefs related to the COVID-19 vaccination, including participants' stated willingness to ever take a COVID-19 vaccine alongside with their beliefs regarding the safety and efficacy of the vaccine, its social desirability, and associated freeriding problems.<sup>5</sup> In addition, we collect further demographic information including income, education, county and zip code of residence. On the final page of the survey, we reveal payoffs to participants and provide them with the opportunity to comment on the survey.

#### **A.4 Additional steps taken to identify influence motives**

In order to identify influence motives in social signaling, our design aims to maximize the difference in Senders' beliefs about their influence on their partner's registration decision between the "*informing partner before*" and "*informing partner after*" conditions. To achieve this, we designed both the decision Senders take as well as the interaction with their partner to be "*one-shot*". To ensure that the interaction is one-shot in nature, we paired individuals who had likely not met before and upheld anonymity throughout the experiment. Anonymity facilitates identifying influence motives as it limits Senders' chances of influencing their partner to that particular encounter: Senders in the "*informing partner before*" condition should realize that their opportunity to influence their partner's decision is either now, by sending a signal in the experiment, or never. Of course, Senders' decisions within the experiment may influence Receivers' behavior after the experiment has ended, as Receivers may contemplate their partner's decision in the experiment for a while and register for a vaccination at some later point in time. In principle, Senders in the "*informing partner after*" condition may realize as well that their actions during the experiment might influence Receivers' behavior *after* the experiment. If that was the case, influence motives would also encourage Senders in this condition, potentially attenuating behavioral differences relative to the "*informing partner before*" condition.

Moreover, the fact that the decision itself – and thus its potential externality on the Receiver – is one-shot, may render it more salient from the perspective of the Sender. Combined, the one-shot decision and the one-shot interaction help us identify influence motives. The role of these design features also suggests a reason why Karlan and McConnell (2014) – who used a similar set of experimental manipulations – did not find evidence for influence motives: to conduct their experiment, they recruited participants from the same peer group (college students from the same university). As a result, Senders might have already known Receivers and anticipated to meet them again in the future, reducing the relative importance of the signal sent within the experiment. A similar logic applies to the decision they studied: they asked Senders to decide about a donation to a university institution, a decision which Senders could take multiple times in the future.

We opted for a setting with limited scope for social pressure to arise, which is likely conducive to identifying influence motives – in line with Foerster and van der Weele (2021) who suggest that influence motives and social pressure effects may be substitutes. In our experiment, social

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<sup>5</sup>We also collect the same set of beliefs before the treatment to analyze within individual changes arising from the treatment.

pressure effects are potentially muted by three factors: first, Senders interact with strangers on the internet instead of neighbors (Bursztyn, González and Yanagizawa-Drott 2020) or classmates (Bursztyn and Jensen 2015). Second, the number of observing Receivers a Sender is facing is smaller than in many existing studies (e.g. Perez-Truglia and Cruces 2017). Third, by upholding anonymity throughout the entire experiment, we shut down most instrumental motives underlying social pressure effects arising from potential future encounters with the Receiver.<sup>6</sup> However, while being muted, a recent study by Götte and Tripodi (2021) shows that social pressure effects can still play a role even in quasi-anonymous online settings like ours. Due to this we chose a design holding social pressure constant between the key experimental conditions and allowed for the possibility that social pressure effects might arise in formulating our pre-analysis plan.

## A.5 Experimental assignment and sample balancing

We used a two-stage random procedure to assign participants into experimental conditions: first, we randomly assigned teams to one of the three experimental conditions “*not informing partner*”, “*informing partner after*”, or “*informing partner before*”. Second, within those teams, we further randomized who was assigned the role of Sender and Receiver, respectively. We report the resulting assignment into experimental conditions in Appendix Table C.3. The discrepancy between the number of participants in the “*informing partner after*” and “*informing partner before*” conditions is an artefact of the specific randomization procedure used. We used “on the fly” randomization to assign participants into experimental conditions as they entered the survey. Due to the random nature of the assignment process, the effective share in each condition slightly deviates from the target shares we specified in our pre-analysis plan.

Since we are primarily interested in Senders’ decisions, we opted for an implementation using fewer Receivers than Senders. Hence, some pairs were formed of two Senders rather than a Sender and a Receiver. To employ only factually true experimental instructions, Senders in the “*informing partner after*” and the “*informing partner before*” conditions were informed that their registration decision *may* be shared with their partner.<sup>7</sup> To further reduce the number of Receivers in our experiment, pairs in the “*not informing partner*” condition always consisted of two Senders. Since Senders’ decisions in this condition were not shared with their partner anyway, these Senders’ partners could also be other Senders while relying on factually true information throughout.

To assess whether Senders’ predetermined characteristics are balanced across experimental conditions, we conducted pairwise comparisons of 21 predetermined characteristics across all three conditions using the following regression model:

$$characteristic_i = \alpha + \beta \cdot treat_i + \epsilon_i,$$

where  $treat_i$  is a dummy variable corresponding to either the “*informing partner after*” or the

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<sup>6</sup>For a discussion of the distinction between instrumental and hedonic motives underlying social-image effects see Bursztyn and Jensen (2017).

<sup>7</sup>To be precise, we informed Senders that their partner would learn about their decision only “with high probability”.

*“informing partner before”* condition, and where we omit one condition from our sample for every pair-wise comparison. In Table C.4, we report the group means separately for each condition alongside the p-values obtained from these regressions. Out of the 63 estimates reported in Table C.4, only one is significant at the 5-percent level, suggesting that Senders’ predetermined characteristics are well balanced across experimental conditions. This finding is further supported by the p-values obtained from tests for joint significance of all predetermined characteristics reported at the bottom of Table C.4.

# Appendix B Additional Figures

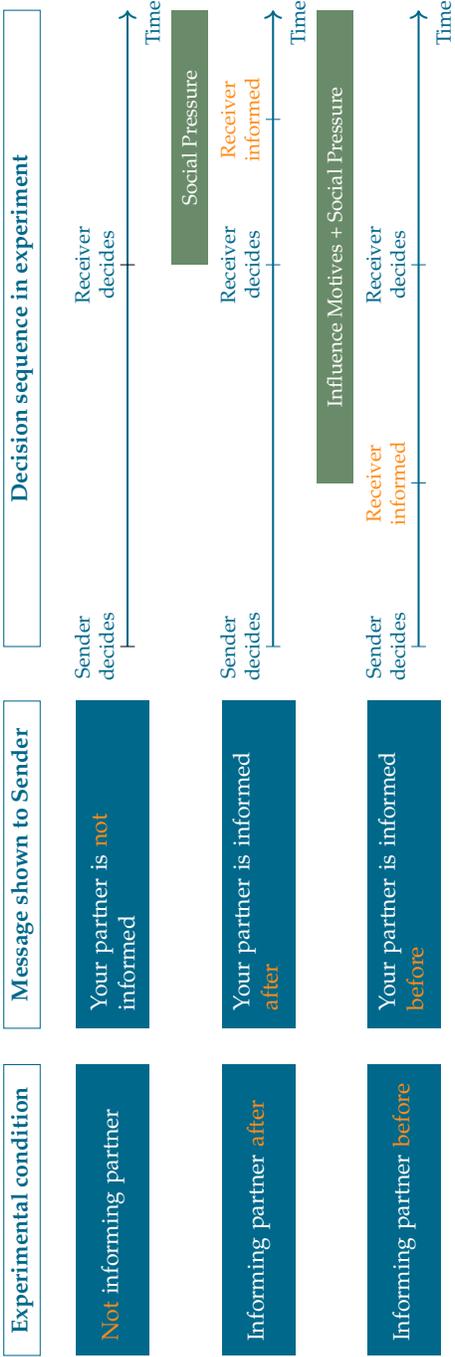
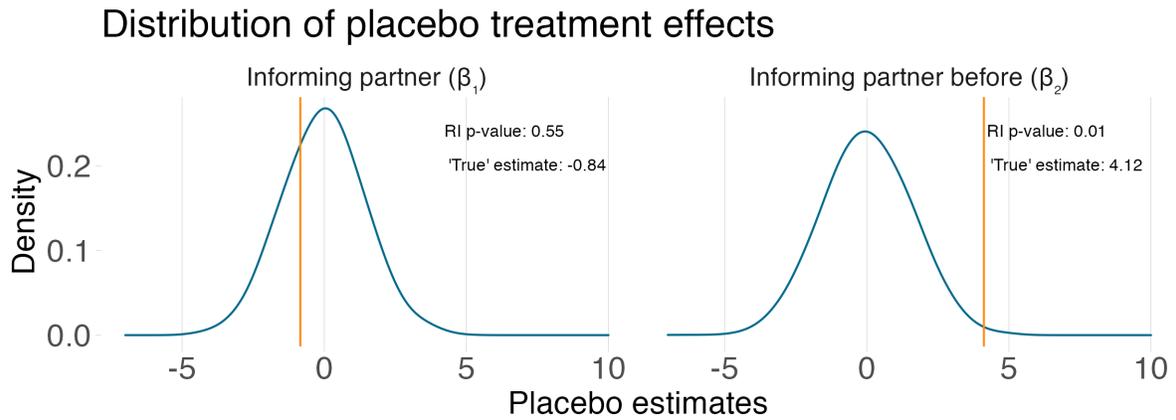
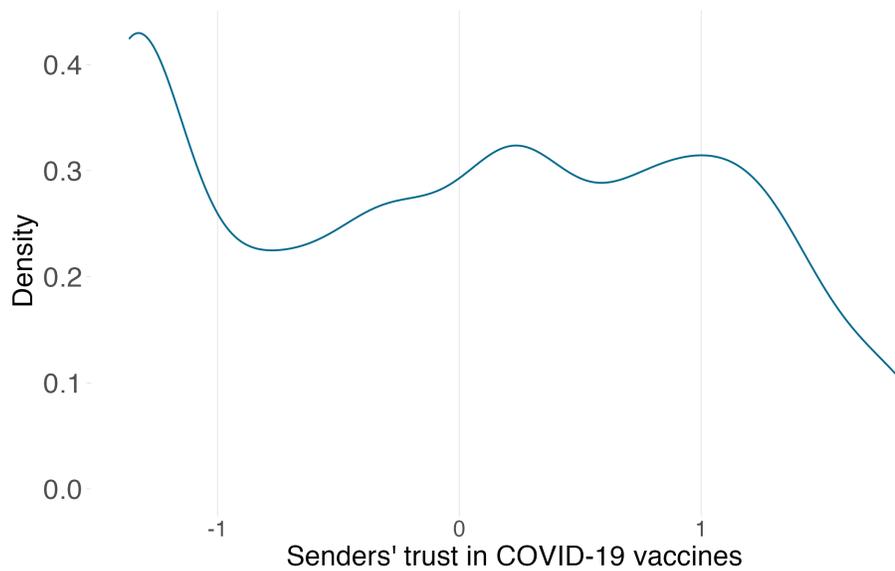


Figure B.1: Treatment messages and corresponding implementation in the survey



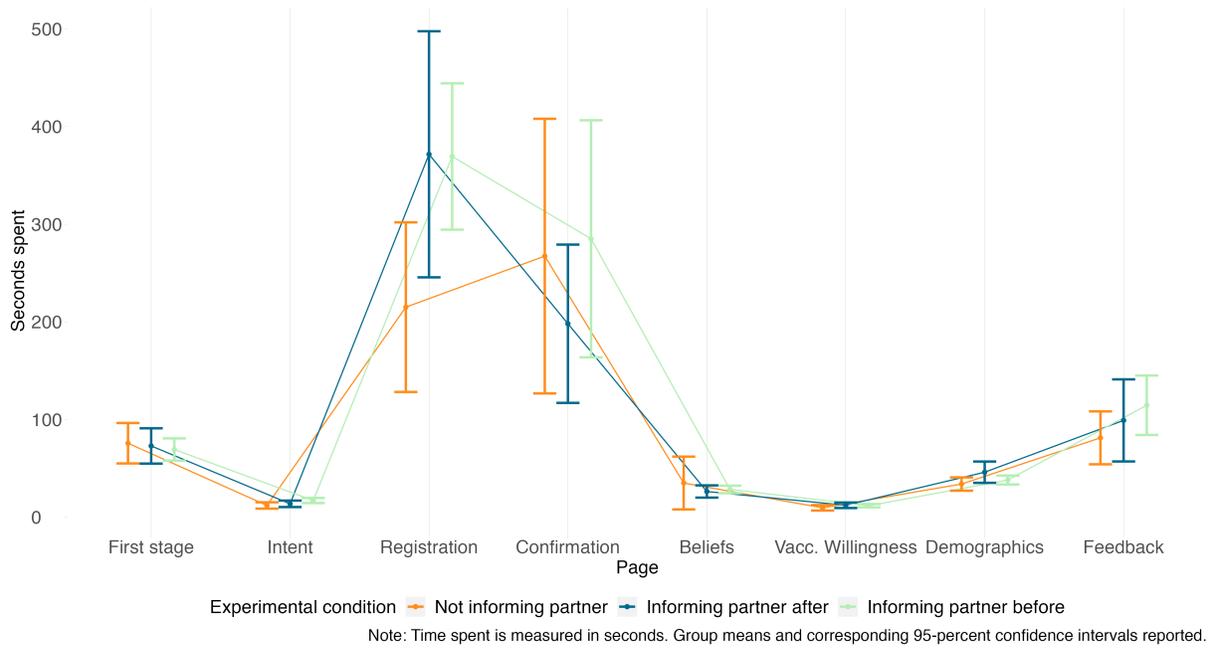
**Figure B.2: Results from randomization inference**

*Notes:* Distribution of placebo estimates derived from randomly re-assigning Senders to placebo treatment groups over 5,000 iterations and calculating the share of “placebo treatment effects” that exceed the “true treatment effect” in (absolute) magnitude. Panel (a) reports the resulting distribution and Fisher exact p-value for coefficient  $\beta_1$  based on Equation 1 and Panel (b) for coefficient  $\beta_2$ , respectively. The outcome in both panels is Senders’ verified registration status.



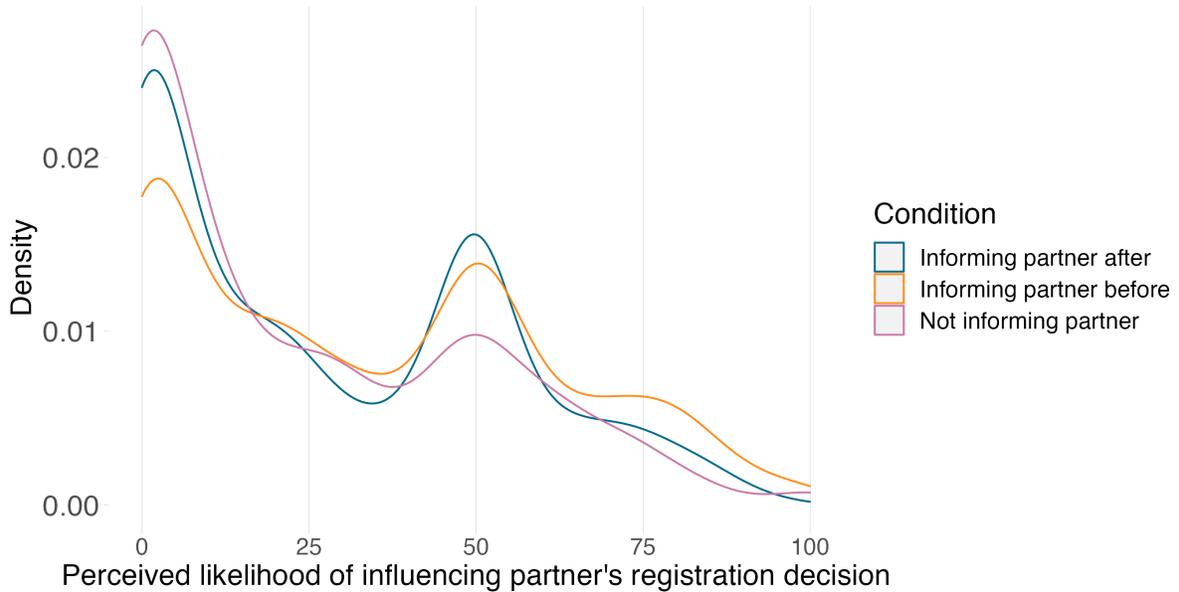
**Figure B.3: Distribution of Senders’ trust in COVID-19 vaccines**

*Notes:* Distribution of Senders’ trust in COVID-19 vaccines (scaled to mean = 0 and sd = 1). We measure trust in vaccine quality as the standardized mean of two survey items elicited pre-treatment capturing Senders’ beliefs about the safety and efficacy of COVID-19 vaccines, respectively.



**Figure B.4: Time spent on each page post treatment by experimental condition**

Notes: Senders' mean time spent on all survey pages after the treatment module alongside 95-percent confidence intervals by experimental condition. Time spent on each page is measured in seconds. The sample of Senders is limited to those who could provide proof of their registration.



**Figure B.5: Distribution of Senders' beliefs about their influence on their partner**

Notes: Density plot of Senders' beliefs about the likelihood of influencing their partners' registration decision, reported separately by experimental condition.

## Appendix C Additional Tables

**Table C.1: Description of all variables**

Variable	Type	Answer Options	Min	Max	Source	Survey Item	Notes
<b>Demographics</b>							
Age	Numeric				Survey	How old are you	
Female	Categorical	male, female	0	1	Survey	Are you male or female?	Dummy == 1 if participant is female
Monthly net household income (in 1,000 €)	Categorical	seven income brackets			Survey	What was your household's monthly net income last year?	
Upper-secondary degree	Categorical	primary, secondary, upper-secondary etc.	0	1	Survey	What is your highest educational degree (general or vocational)?	Dummy == 1 if participant has an upper secondary degree (Abitur)
<b>Local characteristics</b>							
Mean incidence rate (2nd wave)	Numeric				Administrative		Administrative COVID-19 incidence data from Robert Koch Institut (2022)
Population in zip (in 1,000)	Numeric				Administrative		Population data from Suche-Postleitzahl.org (2022)
Lives in urban area (>=100,000 inhab.)	Categorical				Administrative		Dummy == 1 if municipality has more than 100,000 inhabitants
Turnout in 2017	Numeric				Administrative		Election data from Statistische Ämter des Bundes und der Länder (2022)
AfD vote share in 2017	Numeric				Administrative		
Unemployment rate (in %)	Numeric				Administrative		Unemployment data from Bayerisches Landesamt für Statistik (2022)
<b>Attitudes and beliefs about COVID-19 vaccines</b>							
Safety of vaccines	Categorical		1	7	Survey	To what extent do you agree with the following statement? I have full confidence that the vaccination against COVID-19 is safe.	Attitudes & beliefs items based on COSMO (2021)
Efficacy of vaccines	Categorical		1	7	Survey	To what extent do you agree with the following statement? I have full confidence that the vaccination against COVID-19 is effective.	
Social desirability of vaccines	Categorical		1	7	Survey	To what extent do you agree with the following statement? I view vaccinations as a collective effort against the spread of COVID-19.	
Likelihood to freeride on others' vaccination decision	Categorical		1	7	Survey	To what extent do you agree with the following statement? If everyone is vaccinated against COVID-19, I don't need to get vaccinated too.	
Estimated willingness to take vaccine in state	Numeric		0	100	Survey	What do you think? What proportion of people in Bavaria are willing to get vaccinated against COVID-19?	
<b>Preferences</b>							
Own willingness to take vaccine	Numeric		0	100	Survey	How likely is it that you will get vaccinated against COVID-19?	
Altruism	Numeric		0	10	Survey	How much would you be willing to give to a good cause without expecting anything in return?	Combined both survey items as described in (Falk et al. 2018)
Altruism	Numeric		0	1000	Survey	Today you unexpectedly received 1,000 EUR. How much of the money would you donate to a good cause?	
Desire to influence	Categorical		1	7	Survey	How well does the following statement apply to you as a person? I like it when people accept my suggestions.	Scaled, unweighted average of all three survey items from that category; items based on Bennett (1988)
Desire to influence	Categorical		1	7	Survey	How well does the following statement apply to you as a person? I like it when my ideas and opinions have an impact on other people.	

Notes: All variables classified as "local characteristic" do not vary on the individual but on the zip code or municipality ("Gemeinde") of residence level.

Variable	Type	Answer Options	Min	Max	Source	Survey Item	Notes
Desire to influence	Categorical		1	7	Survey	How well does the following statement apply to you as a person? I would like the feeling of having influenced other people's lives.	
Social image concerns	Categorical		1	7	Survey	How well does the following statement apply to you as a person? It is important to me to impress others.	Scaled, unweighted average of all three survey items from that category; items based on Alba et al. (2014)
Social image concerns	Categorical		1	7	Survey	How well does the following statement apply to you as a person? I think a lot about whether I am good enough compared to others	
Social image concerns	Categorical		1	7	Survey	How well does the following statement apply to you as a person? It is important to me how I am perceived by others	
<b>Social proximity</b>							
Oneness	Categorical		1	7	Survey	Which of the following figures best reflects how connected you feel with your partner?	Scaled, unweighted average of all survey items from that category; oneness item sources described in Appendix Appendix A
Oneness	Categorical		1	7	Survey	To what extent would you refer to yourself and your partner [name] as "we"?	
<b>Registration decision</b>							
Verified registration	Categorical		0	1	BayIMCO		Dummy == 1 if registration could be verified
Self-reported registration	Categorical	yes, no	0	1	Survey	Have you successfully registered?	Dummy == 1 if replied "yes"
Clicked link forwarding to BayIMCO	Categorical		0	1	Survey		Dummy == 1 if clicked on link forwarding participant to BayIMCO.
Self-reported intent to register	Categorical	yes, no	0	1	Survey	Would you like to register for a COVID-19 vaccination?	Dummy == 1 if replied "yes"
<b>First stage belief</b>							
Perceived likelihood of influencing partner's registration decision	Numeric		0	100	Survey	What do you think? How likely is it that your decision to register or not to register will influence your partner's decision?	

Notes: All variables classified as "local characteristic" do not vary on the individual but on the zip code or municipality ("Gemeinde") of residence level.

**Table C.2: Summary statistics for full sample (Senders and Receivers)**

Statistic	Mean	St. Dev.	Min	Max	N
<b>Demographics</b>					
Age	40.90	14.35	18.00	79.00	1,857
Female (%)	54.55	49.81	0.00	100.00	1,857
Monthly net household income (in 1,000 €)	2.91	1.60	1.10	7.50	1,857
Upper secondary degree (%)	38.50	48.67	0.00	100.00	1,857
<b>Local characteristics</b>					
Mean incidence rate (2nd wave)	138.73	40.67	65.64	301.07	1,857
Population in zip (in 1,000)	14.81	9.85	0.60	48.05	1,857
Lives in urban area (>=100,000 inhab.)	29.46	45.60	0.00	100.00	1,857
Turnout in 2017	77.54	4.30	59.90	90.20	1,857
AfD vote share in 2017	12.22	3.06	5.49	26.42	1,857
Unemployment rate (%)	2.35	0.93	0.05	5.50	1,857
<b>Attitudes and beliefs about COVID-19 vaccines</b>					
Safety of vaccines, pre	0.00	1.00	-1.23	1.83	1,857
Efficacy of vaccines, pre	0.00	1.00	-1.42	1.65	1,857
Social desirability of vaccination, pre	0.00	1.00	-1.17	1.50	1,857
Likelihood to freeride on others' vaccination decision, pre	0.00	1.00	-1.09	1.81	1,857
Estimated willingness to take vaccine in state (%)	59.11	20.16	0.00	100.00	1,857
<b>Preferences</b>					
Own willingness to take vaccine (%)	51.31	37.09	0.00	100.00	1,857
Altruism	0.00	1.00	-2.36	2.70	1,857
Desire to influence others	0.00	1.00	-3.03	1.67	1,857
Social image concerns	0.00	1.00	-1.84	2.31	1,857
<b>Social proximity</b>					
Oneness	0.00	1.00	-1.06	2.25	1,526

Notes: All variables classified as "local characteristic" do not vary on the individual but on the zip code or municipality ("Gemeinde") of residence level.

**Table C.3: Number of Senders and Receivers assigned to each condition**

Condition	Role	Observations
Not informing partner	Sender	328
Informing partner after	Sender	554
Informing partner before	Sender	519
Informed after	Receiver	236
Informed before	Receiver	220

**Table C.4: Sender's predetermined characteristics compared across experimental conditions**

	Group means			Test for equal means: p-values			N
	Before	After	Not	Before vs. After	Before vs. Not	After vs. Not	
<b>Attrition</b>							
Completed survey (in %)	73.20	73.57	76.28	0.87	0.24	0.30	1,892
<b>Demographics</b>							
Age	40.67	41.36	40.43	0.43	0.82	0.36	1,401
Female (in %)	56.07	53.61	51.83	0.42	0.23	0.61	1,401
Monthly net household income (in 1,000 €)	2.85	2.85	2.99	0.97	0.21	0.21	1,401
Upper secondary degree (in %)	37.38	39.71	40.24	0.43	0.41	0.88	1,401
<b>Local characteristics</b>							
Mean incidence rate (2nd wave)	138.48	140.53	137.02	0.41	0.60	0.22	1,401
Population in zip (in 1,000 inhabitants)	14.21	15.17	14.91	0.11	0.29	0.71	1,401
Lives in urban area (>=100,000 inhabitants)	28.90	31.77	31.40	0.31	0.44	0.91	1,401
Turnout (%)	77.54	77.60	77.50	0.81	0.91	0.75	1,401
AfD vote share (%)	12.23	12.18	12.17	0.78	0.78	0.98	1,401
Unemployment rate (%)	2.34	2.40	2.36	0.33	0.81	0.53	1,401
<b>Attitudes and beliefs about COVID-19 vaccines</b>							
Safety of vaccines	-0.02	-0.01	0.01	0.80	0.69	0.86	1,401
Efficacy of vaccines	-0.01	-0.02	-0.01	0.84	0.99	0.87	1,401
Social desirability of vaccination	-0.02	0.01	0.00	0.69	0.81	0.92	1,401
Likelihood to freeride on others' vaccination decision	0.02	-0.08	0.07	0.12	0.46	0.03**	1,401
Estimated willingness to take vaccine in state (%)	58.37	58.41	59.83	0.97	0.30	0.30	1,401
<b>Preferences</b>							
Own willingness to take vaccine (%)	50.78	51.40	49.57	0.78	0.65	0.48	1,401
Altruism	-0.02	0.04	-0.02	0.34	0.97	0.39	1,401
Desire to influence others	0.02	-0.05	0.02	0.24	0.99	0.30	1,401
Social image concerns	0.01	0.00	-0.01	0.77	0.80	0.99	1,401
<b>Social proximity</b>							
Oneness	-0.05	0.05	-0.06	0.13	0.92	0.14	1,140
<b>Test for joint significance</b>				0.71	0.92	0.42	

Notes: Group means of Senders' predetermined characteristics alongside p-values testing for equal means reported. p-values are derived from the following regressions comparing predetermined characteristics between pairs of conditions:  $characteristic_i = \alpha + \beta \cdot treat_i + \epsilon_i$ , where  $treat_i$  is a dummy variable corresponding to either the "informing partner after" or the "informing partner before" condition, and where we omit one condition from our sample for every pair-wise comparison. *Not* refers to the *not informing partner* condition. All variables classified as "local characteristic" do not vary on the individual but on the zip code or municipality ("Gemeinde") of residence level. Significance levels: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Table C.5: What predicts Sender's registration status?

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
	Verified registration																			
Age	0.31 (0.58)																			0.71 (0.61)
Female		-0.24 (0.61)																		0.60 (0.63)
Monthly net household income (in 1,000 €)			1.01 (0.61)																	0.52 (0.62)
Upper secondary degree (in %)				0.88 (0.63)																0.07 (0.68)
Mean incidence rate (2nd wave)					-1.14** (0.48)															0.04 (0.60)
Population in zip (in 1,000)						-0.58 (0.62)														0.09 (0.75)
Lives in urban area (>=100,000 inhab.)							-1.33** (0.55)													-1.49* (0.84)
Turnout in 2017								1.82*** (0.64)												1.37 (1.03)
AfD vote share in 2017									-0.44 (0.62)											-0.14 (0.93)
Unemployment rate (in %)										-1.59*** (0.56)										0.34 (1.12)
Safety of COVID-19 vaccines											5.62*** (0.68)									3.31*** (1.14)
Efficacy of COVID-19 vaccines												4.95*** (0.63)								-1.32 (1.04)
Social desirability of COVID-19 vaccines													5.18*** (0.69)							0.02 (1.23)
Likelihood to freeride on others' vacc. decision														-3.34*** (0.56)						-0.15 (0.53)
Estimated willingness to take vaccine in state (%)															3.29*** (0.60)					0.61 (0.59)
Own willingness to take vaccine (%)																5.98*** (0.67)				3.87*** (1.14)
Altruism																	0.17 (0.54)			-0.71 (0.57)
Desire to influence others																		2.41*** (0.61)		1.72** (0.68)
Social image concerns																				1.02* (0.54)
Observations	1,401	1,401	1,401	1,401	1,401	1,401	1,401	1,401	1,401	1,401	1,401	1,401	1,401	1,401	1,401	1,401	1,401	1,401	1,401	1,401
R <sup>2</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.06	0.05	0.05	0.02	0.02	0.07	0.00	0.01	0.00	0.09

Note: Results from regressions of the following type reported in columns 1 to 19:  $y_i = \alpha + \beta_1 x_i + \epsilon_i$ , where  $y_i$  denotes Sender's verified registration status and  $x_i$  is one of Sender's predetermined characteristics. In column 20, we assess the predictive power of all predetermined characteristics jointly in one regression. Significance levels: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table C.6: What predicts perceived social proximity between partners?**

	Social proximity				
	(1)	(2)	(3)	(4)	(5)
Same gender	0.09 (0.06)				0.10 (0.07)
Same educational level		0.01 (0.07)			0.01 (0.07)
Absolute age difference			-0.06** (0.03)		-0.05 (0.03)
Absolute income difference				0.03 (0.03)	0.03 (0.03)
Mean, social proximity	0.00	0.00	0.00	0.00	0.00
SD, social proximity	1.00	1.00	1.00	1.00	1.00
Observations	1,140	959	1,140	959	959
R <sup>2</sup>	0.00	0.00	0.00	0.00	0.01

*Notes:* Results from regressions of the following type reported in columns 1 to 4:  $y_i = \alpha + \beta \cdot x_i + \epsilon_i$ , where  $y_i$  denotes Sender  $i$ 's perceived social proximity between herself and her partner in the experiment.  $x_i$  is either a dummy taking value 1 if Sender  $i$  shares this predetermined characteristics with her partner and zero otherwise or the absolute difference between Sender  $i$ 's response and her partner's response. In column 5, we employ all characteristics jointly in the same regression. Significance levels: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Table C.7: All outcomes by experimental conditions

	Observations				Group means				Test for equal means: p-values					
	Before		After		Before		After		Before vs. After		Before vs. Not		After vs. Not	
	519	554	328	328	7.90	3.79	11.01	4.57	0.00***	0.04**	0.05*	0.46	1.00	0.51
<b>Registration decision</b>														
Verified registration status (in %)	519	554	328	328	7.90	3.79	11.01	4.57	0.00***	0.04**	0.05*	0.46	1.00	0.51
Self-reported registration status (in %)	519	554	328	328	13.87	11.01	9.45	9.45	0.16	0.26	0.26	0.26	0.26	0.23
Clicked registration link (in %)	519	554	328	328	11.18	8.84	8.84	8.84	0.20	0.52	0.52	0.52	0.52	0.52
Self-reported intent to register (in %)	519	554	328	328	23.31	21.66	19.82	19.82	0.52	0.52	0.52	0.52	0.52	0.52
<b>Attitudes towards COVID-19 vaccination</b>														
Self-reported willingness to take vaccine (in %)	519	554	328	328	49.69	50.46	49.37	49.37	0.73	0.90	0.90	0.90	0.90	0.67
<b>Changes in beliefs pre-post treatment</b>														
Safety of vaccine (in sd)	519	554	328	328	0.03	0.00	-0.05	-0.05	0.73	0.28	0.28	0.28	0.28	0.44
Efficacy of vaccine (in sd)	519	554	328	328	0.00	0.01	-0.01	-0.01	0.92	0.87	0.87	0.87	0.87	0.80
Social desirability of vaccination (in sd)	519	554	328	328	0.02	0.00	-0.04	-0.04	0.80	0.42	0.42	0.42	0.42	0.56
Likelihood to freeride of others' vaccination decision (in sd)	519	554	328	328	-0.02	0.01	0.01	0.01	0.59	0.63	0.63	0.63	0.63	1.00
<b>First stage belief</b>														
Perceived likelihood of influencing partner's registration decision (in %)	519	554	328	328	33.51	27.93	24.36	24.36	0.00***	0.00***	0.00***	0.07*	0.07*	0.07*

Notes: Raw means conditional on treatment status reported for full sample of Senders. All changes in beliefs (pre/post treatment) were standardized to exhibit mean = 0 and sd = 1 in the full sample of Senders. Significance levels: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Table C.8: Treatment effects on changes in Senders' beliefs and attitudes

	$\Delta$ Beliefs safety of vaccine	$\Delta$ Beliefs efficacy of vaccine	$\Delta$ Beliefs social desirability of vaccination	$\Delta$ Likelihood to freeride on others' vaccination decision
	(1)	(2)	(3)	(4)
Informing partner	0.05 (0.07)	-0.01 (0.07)	0.08 (0.06)	-0.00 (0.07)
Informing partner before	0.02 (0.06)	0.00 (0.06)	-0.00 (0.05)	-0.02 (0.06)
Controls	Yes	Yes	Yes	Yes
Mean, 'Not informing partner'	-0.05	-0.01	-0.04	0.01
Mean, 'Informing partner after'	0.00	0.01	0.00	0.01
Observations	1,401	1,401	1,401	1,401
R <sup>2</sup>	0.05	0.08	0.38	0.02

Notes: Results derived from regressions as laid out in Equation 1. We employ the following changes in attitudes (pre/post treatment) as dependent variables: (column 1) beliefs about the safety of the vaccine; (column 2) beliefs about the efficacy of the vaccine; (column 3) beliefs about the social desirability of taking the vaccine; and (Column 4) self-reported tendency to freeride on others' commitment to take the vaccine. All changes in beliefs were standardized to obtain mean = 0 and sd = 1 in the full sample of Senders. Controls include the full set of variables reported in Appendix Table C.2 with the exception of social proximity and the pre-treatment levels of these attitudes and beliefs. Robust standard errors reported in parentheses. Significance levels: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table C.9: Strategic lying**

	Self-reported intent to register	Verified registration	Self-reported intent NOT verified
	(1)	(2)	(3)
Informing partner	1.18 (2.53)	-0.84 (1.39)	2.02 (2.43)
Informing partner before	2.29 (2.30)	4.12*** (1.37)	-1.83 (2.16)
Controls	Yes	Yes	Yes
Mean, 'Not informing partner'	19.82	4.57	15.24
Mean, 'Informing partner after'	21.66	3.79	17.87
Observations	1,401	1,401	1,401
R <sup>2</sup>	0.21	0.09	0.13

*Notes:* Results derived from regressions as laid out in Equation 1. We employ the following dependent variables: (column 1) dummy variable taking value 1 if a Sender reported to be willing to register (elicited before verification); (column 2) a dummy variable taking value 1 if a Sender reported that she registered for a vaccination and could provide proof of her registration; (column 3) a dummy variable taking value 1 if a Sender reported that she had signed up but failed to provide proof of her registration. Controls include the full set of variables reported in Appendix Table C.2 with the exception of social proximity. Robust standard errors reported in parentheses. Significance levels: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table C.10: Treatment effects on Senders' first-stage beliefs**

	Perceived likelihood that partner can be influenced (%)			
	(1)	(2)	(3)	(4)
Informing partner	6.26 (1.77)	5.90 (1.73)	3.58 (1.94)	3.31 (1.90)
Informing partner before			5.57 (1.79)	5.35 (1.69)
Controls		Yes		Yes
Mean, 'Not informing partner'	24.36	24.36	24.36	24.36
Mean, 'Informing partner after'	27.93	27.93	27.93	27.93
Observations	1,194	1,194	1,194	1,194
R <sup>2</sup>	0.01	0.11	0.02	0.12

*Notes:* Results derived from regressions as laid out in Equation 1 where we employ Senders' beliefs about how likely they can influence their partner's registration decision as the dependent variable. Controls include the full set of variables reported in Appendix Table C.2 with the exception of social proximity. Robust standard errors reported in parentheses.

**Table C.11: Receivers' predetermined characteristics compared across experimental conditions**

	Group means		p-value	N
	Before	After	Before vs. After	
<b>Attrition</b>				
Completed survey	73.09	70.66	0.50	635
<b>Demographics</b>				
Age	39.76	42.03	0.10	456
Female (%)	56.36	55.51	0.86	456
Monthly net household income (in 1,000 €)	2.86	3.10	0.12	456
Upper secondary degree (%)	36.82	37.29	0.92	456
<b>Local characteristics</b>				
Avg. incidence rate (2nd wave)	139.21	137.01	0.56	456
Population in zip (in 1,000 inhabitants)	15.30	14.70	0.52	456
Lives in urban area (>=100,000 inhabitants.)	28.64	23.31	0.20	456
Turnout (%)	77.35	77.62	0.51	456
AfD vote share (%)	11.99	12.55	0.05*	456
Unemployment rate (%)	2.40	2.25	0.08*	456
<b>Attitudes and beliefs about COVID-19 vaccines</b>				
Safety of vaccines	0.05	0.01	0.68	456
Efficacy of vaccines	0.08	0.01	0.48	456
Social desirability of vaccination	0.05	-0.02	0.48	456
Likelihood to freeride on others' vaccination decision	0.05	0.00	0.59	456
Estimated willingness to take vaccine in state (%)	60.74	59.84	0.64	456
<b>Preferences</b>				
Own willingness to take vaccine (%)	53.22	52.91	0.93	456
Altruism	-0.02	-0.01	0.93	456
Desire to influence others	-0.03	0.07	0.31	456
Social image concerns	-0.03	0.02	0.60	456
<b>Social proximity</b>				
Oneness	0.13	-0.07	0.04**	386
<b>Test for joint significance</b>				
			0.51	456

Notes: Group means of Receivers' predetermined characteristics alongside p-values testing for equality of means. P-values are derived from the following regressions:  $characteristic_i = \alpha + \beta \cdot informed\ before_i + \epsilon_i$ , where  $informed\ before_i$  is a dummy taking value 1 for all Receivers in the *informed before* condition. All variables classified as "local characteristic" do not vary on the individual but on the zip code or municipality ("Gemeinde") of residence level. Significance levels: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

# Appendix D Screenshots

## D.1 Joint problem solving task

Joint Task

26 percent

### Painting 1

To communicate with your partner, please use the following chat tool.

Hello

Ready to work on the task?

Sure! Let's start

Type your answer here

---



**Frage:** Which artist crafted this painting?

Select the correct artist from this list

Next

Figure D.6: Survey page showing chat window and historical painting (placeholder)

## D.2 Oneness elicitation

### Attitudes towards your partner

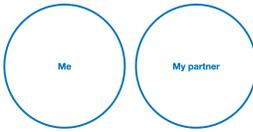
50 percent

**Question 1:** Which of the following figures best reflects how close you feel to your partner?

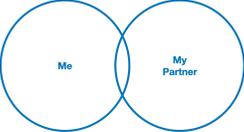
**Please note:**

1. If you select **Option 1** this implies that you do **not feel close** to your partner **at all**.
2. If you select **Option 7** this implies that you **feel very close** to your partner.
3. Please use the remaining figures to indicate that your feelings towards your partner fall inbetween.
4. To select either of the options, please select the option itself and not the figure.

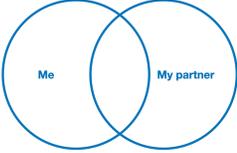
Option 1



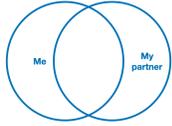
Option 2



Option 3



Option 4



Option 5



Option 6



Option 7



**Question 2:** To what extent would you refer to yourself and your partner as "We"?

**Please note:**

1. If you select **Option 1** this implies that you would **under no circumstances** use the term "We" to refer to yourself and your partner.
2. If you select **Option 7** this implies that you would **always** refer to yourself and your partner as "We".
3. Please feel free to use any of the options (1 to 7) for your answer.

**Please select your answer here:**

1 = I would **under no circumstances** refer to myself and my partner as "We".

2

3

4

5

6

7 = I would **always** refer to myself and my partner as "We".

Next

Figure D.7: Survey page documenting elicitation of social proximity

## D.3 General instructions

95 Percent

### Instructions

- In the following we would like to ask you about your **willingness to get vaccinated against COVID-19**.
- Specifically, we would like to know whether you are **willing to register for a COVID-19 vaccination right away**.
- With that we are referring to the **official registration process** required for residents of Bavaria to be able to obtain an appointment at a vaccination center.
- In this survey, we will **provide you with the opportunity** to switch to the official registration website of the Bavarian Ministry of Health to **complete the registration**.
- Of course, the registration is **voluntary** and you can complete the survey without registering.

**Task:** Confirm that you have understood these instructions by selecting the correct answer below.

**Question:** In this survey, will you be able to switch to the official registration website of the Bavarian Ministry of Health to complete the registration for a COVID-19 vaccination?

Please select the correct answer

Next

**Figure D.8: Survey page providing general instructions on the opportunity to register for a COVID-19 vaccination**

## D.4 Treatment instructions – Senders

30 Percent

**Instructions:**

This survey proceeds as follows:

**Step 1**

You decide whether you want to **register** for a COVID-19 vaccination **right away**.

↓

**Step 2**

Your partner [name] decides whether [he/she] wants to **register** for a COVID-19 vaccination **right away**.

**Important**

We do **not tell** your partner [name] whether you want to register for a vaccination.

You do **not** find out about the decision of your partner [name].

**Task:** Please confirm that you have understood these instructions by selecting the correct answer below.

**Question**

Will your **partner [name]** **find out** whether you want to register?

Please select the correct answer

Next

Figure D.9: Survey page providing treatment instructions for Senders in the “not informing partner” condition

**Instructions:**

We tell your partner [name] with high probability whether you want to register for a vaccination. This proceeds as follows:

**Step 1**

You decide whether you want to **register** for a COVID-19 vaccination **right away**.

**Step 2**

Your partner [name] decides whether [he/she] wants to **register** for a COVID-19 vaccination **right away**.

**Step 3**

We tell **your partner [name]** whether you want to register for a vaccination

**Important**

Your partner [name] will **find out about your registration decision only after** [he/she] has already decided whether [he/she] wants to register.

You do **not** find out about the decision of your partner.

**Task:** Please confirm that you have understood the instructions by selecting the correct answers below.

**Question 1**

Will your **partner [name]** **find out** with high probability whether you want to register?

Please select the correct answer

**Question 2**

**When** will your **partner [name]** **find out** about your registration decision? **Directly before** or **only after** [he/she] can register for a COVID-19 vaccination?

Please select the correct answer



Next

**Figure D.10: Survey page providing treatment instructions for Senders in the “informing partner after” condition**

35 Percent

---

**Instructions:**

We tell your partner [name] with high probability whether you want to register for a vaccination. This proceeds as follows:

**Step 1**

You decide whether you want to **register** for a COVID-19 vaccination **right away**.

↓

**Step 2**

We tell **your partner [name]** whether you want to register for a vaccination.

**Important**

Your partner [name] will **find out about your registration decision directly before** [he/she] can decide whether [he/she] wants to register.

↓

**Step 3**

Your partner [name] decides whether [he/she] wants to **register** for a COVID-19 vaccination **right away**.

You do **not** find out about the decision of your partner.

**Task:** Please confirm that you have understood the instructions by selecting the correct answers below.

**Question 1**

Will your **partner [name]** find out with high probability whether you want to register?

Please select the correct answer ▼

---

**Question 2**

When will your **partner [name]** find out about your registration decision? **Directly before** or **only after** [he/she] can register for a COVID-19 vaccination?

Please select the correct answer ▼

---

Next

**Figure D.11: Survey page providing treatment instructions for Senders in the “informing partner before” condition**

## D.5 Treatment instructions – Receivers

88 Percent

**Instructions:**

This survey proceeds as follows:

**Step 1**

Your partner [name] decides whether [he/she] wants to **register** for a COVID-19 vaccination **right away**.

↓

**Step 2**

You decide whether you want to register for a vaccination **right away**.  
Since you are the second to decide you may have to wait for a moment.

We do **not** tell your partner whether you want to register for a vaccination.

**Task:** Please confirm that you have understood these instructions by selecting the correct answer below.

**Question**

Will your partner find out about your decision?

Please select the correct answer

Next

Figure D.12: Survey page providing treatment instructions for all Receivers

## D.6 Registration for COVID-19 vaccination

### Registration

60 Percent

**Would you like to register now?**

- To register, please click on **Yes, register now for a COVID-19 vaccination below**.
- This will open the official registration website of the Bavarian Ministry of Health in a new browser window or tab.
- To successfully register for a COVID-19 vaccination, follow the instructions on the registration website.

**Important:**

Please do **not close** the browser window or tab in which you are answering the survey during registration.

**Additional notes:**

- We do **not have any access** to the information you provided on the registration website.
- The registration is **voluntary** and it does **not entail** an obligation to get vaccinated.
- Your reward for this survey is **independent** of whether you register.

**Yes, register now for the COVID-19 vaccination.**

**Have you successfully registered? Here's how to proceed:**

Once you have registered, please continue with the survey by clicking **Yes, I have registered and would like to continue with the survey** at the **bottom of the page**.

---

**Don't want to register now?**

- If you do not wish to register now, you will not be penalized in any way, for example by being paid less for this survey.
- To continue with the survey, please click **No, I have not registered and would like to continue with the survey** at the bottom of this page.

---

**To continue with the survey, please answer the following questions:**

**Question:** Have you just registered for the COVID-19 vaccination?

**No, I have not registered and would like to continue with the survey**

**Yes, I have registered and would like to continue with the survey**

Figure D.13: Survey page eliciting intended willingness to register and providing link to official registration website (BayIMCO)

## Impfregistrierung



Guten Tag,  
willkommen bei der COVID-19 Impfregistrierung.  
Aktuell können Sie sich für eine Impfung vorab registrieren.  
Sobald eine Terminauswahl möglich ist, werden Sie  
verständigt.

Um einen zuverlässigen Schutz gegen COVID-19 aufzubauen,  
sind zwei Teilimpfungen erforderlich.  
Die Impfung basiert auf Freiwilligkeit und ist kostenlos.

[Registrierung starten](#)

[Ich habe bereits einen Account](#)

Figure D.14: Landing page of the official registration website (BayIMCO)

BayIMCO@impfzentren.bayern

21. März 2021 um 15:58

B

Ihre Anmeldung zu COVID-19 Impfung



Ihre Anmeldung zur COVID-19 Impfung wurde erfolgreich entgegengenommen.

Sie werden automatisch per E-Mail und/oder SMS kontaktiert, sobald Sie an der Reihe sind. Eine weitere Kontaktaufnahme mit dem für Sie zuständigen Impfzentrum ist daher nicht erforderlich. Bitte verzichten Sie auch auf Nachfragen, da dies die Kapazitäten der Impfzentren belastet und zu Verzögerungen im Ablauf der Terminvereinbarungen führt.

Sollten Sie an weiteren Informationen zum aktuellen Impfgeschehen interessiert sein, empfehlen wir regelmäßig einen Blick in Ihr Benutzerkonto zu werfen. Dort haben Sie natürlich die Möglichkeit Ihre Daten jederzeit zu aktualisieren so lange Sie noch keinen Termin ausgewählt haben.

Die Vergabe der Impftermine orientiert sich an der Zugehörigkeit zu der jeweils aufgerufenen Prioritätengruppe. So wird sichergestellt, dass immer die besonders gefährdeten Menschen zuerst geimpft werden.

Wichtig: Die Impfung ist und bleibt für Sie kostenlos. Sollten Sie zur Herausgabe von Kontodaten oder Geldzahlungen aufgefordert werden (z.B. telefonisch oder per E-Mail), gehen Sie darauf nicht ein und wenden Sie sich an Ihre örtlich zuständige Polizeidienststelle.

Mit freundlichen Grüßen,

Ihr Bayerisches Staatsministerium für Gesundheit und Pflege

**Figure D.15: Confirmation email highlighting sending address and subject line**

## Confirmation

70 Percent

**Now confirm your registration**

You have indicated that you have **just registered** online for a Corona vaccination.

- You should have received a **confirmation email** after completing your registration.
- Please provide the following two pieces of information from the vaccination center **confirmation email**:
  - Email address**
  - Subject**

**Lottery:**

- If **both of your answers are correct**, you can win one of 30 **Amazon vouchers worth 20€**.
- You must complete the survey to be entered into the draw.

**Further notes:**

- This information does not allow any conclusions to be drawn about you as a person. You remain completely **anonymous**.
- You can also continue with the survey without answering the questions. However, you will then not be able to take part in the lottery draw

---

**Question 1:** What is the **email address** from which you received the confirmation email?

**Figure D.16: Survey page explaining verification of registration**

## Appendix E Survey Instrument<sup>8</sup>

### I Basic demographic information

**Question 1:** Are you male or female?

**Question 2:** How old are you?

**Question 3:** In which federal state do you live?

---

*new page*

---

Since the end of last year (December 2020), *vaccinations against the coronavirus (COVID-19 vaccinations) have been administered in Germany.*

**Question:** Have you already received a COVID-19 vaccination? Reply options: *Yes or No*

---

*new page*

---

#### Did you know that?

In Bavaria, it is possible to register for a COVID-19 vaccination already, even though the actual vaccination may not take place for a few months. Registration takes place either online or by telephone at the Bavarian vaccination centres.

**Question:** Have you already registered for a COVID-19 vaccination? Reply options: *Yes or No*

---

*new page*

---

### II Attitudes towards the COVID-19 vaccination

We would like to start by asking you a few basic questions regarding how you feel about the COVID-19 vaccination.

There are now several vaccines against the coronavirus on the German market. Vaccination is officially recommended for adults of all ages (exception: not during pregnancy and breastfeeding for the time being, as no data on safety and efficacy are yet available).

**To what extent do you agree with the following statements?**

- **Statement 1:** I have full confidence that the vaccination against COVID-19 is safe.  
Reply options: *Likert scale (1-7) with 1: do not agree at all, 7: agree completely.*
- **Statement 2:** I have full confidence that the vaccination against COVID-19 is effective.  
Reply options: *Likert scale (1-7) with 1: do not agree at all, 7: agree completely.*
- **Statement 3:** I view vaccinations as a collective effort against the spread of COVID-19.  
Reply options: *Likert scale (1-7) with 1: do not agree at all, 7: agree completely.*

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<sup>8</sup>This section provides a translation of the original German-language survey instrument. The full original survey instrument was attached to our pre-registration at the AEA RCT Registry with ID AEARCTR-0007437.

- **Statement 4:** If everyone is vaccinated against COVID-19, I don't need to get vaccinated too.  
Reply options: *Likert scale (1-7) with 1: do not agree at all, 7: agree completely.*

**Question 1:** How likely is it that you will get vaccinated against COVID-19?

*Instruction: Please use the bar/slider for your answer. Click on the bar at the bottom to reveal the slider. Then move the slider to give your answer. 0 percent means "definitely not willing to get vaccinated". 100 percent means "definitely willing to get vaccinated".*

**Question 2:** What do you think? What proportion of people in Bavaria are willing to get vaccinated against COVID-19?

*Instruction: Please use the bar/slider for your answer. Click on the bar at the bottom to reveal the slider. Then move the slider to give your answer. 0 percent means "no one is willing to get vaccinated". 100 percent means "everybody is willing to get vaccinated".*

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### III Broader set of attitudes

**How well do the following statements apply to you as a person?**

- **Statement 1:** I like it when people accept my suggestions.  
Reply options: *Likert scale (1-7) with 1: do not agree at all and 7: agree completely.*
- **Statement 2:** I like it when my ideas and opinions have an impact on other people.  
Reply options: *Likert scale (1-7) with 1: do not agree at all and 7: agree completely.*
- **Statement 3:** I would like the feeling of having influenced other people's lives.  
Reply options: *Likert scale (1-7) with 1: do not agree at all and 7: agree completely.*

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**How well do the following statements apply to you as a person?**

- **Statement 1:** It is important to me to impress others.  
Reply options: *Likert scale (1-7) with 1: do not agree at all and 7: agree completely.*
- **Statement 2:** I think a lot about whether I am good enough compared to others.  
Reply options: *Likert scale (1-7) with 1: do not agree at all and 7: agree completely.*
- **Statement 3:** It is important to me how I am perceived by others.  
Reply options: *Likert scale (1-7) with 1: do not agree at all and 7: agree completely.*

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**We now ask you about your behavior in certain situations.**

**Question:** How much would you be willing to give to a good cause without expecting anything in return?

Reply options: 0: *Not at all willing*, 10: *Extremely willing*

**Imagine the following situation: Today you unexpectedly received 1,000 EUR.**

**Question:** How much of the money would you donate to a good cause? *Note: You can enter whole numerical values from 0 to 1,000 here.*

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## IV Joint task

Please read the following instructions carefully before proceeding with the survey.

- In the next section of our survey, we ask you to solve a short task together with another participant of this survey.
- Your task is to match famous pieces of art to the respective artist together with your partner.
- In this task, you can win one of 30 Amazon vouchers worth €10.
- You can communicate with your fellow player by means of a chat.
- To facilitate communication, please enter your first name or a nickname below.

**Question:** What is your first name or nickname?

**Hint:**

- In order to remain anonymous, please make sure to enter only your first name.
- You can also choose another name here. However, the name should correspond to your gender.

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We ask you to solve the upcoming task together with your partner.

Your partner is: [*name*]

[He/she] is [*xx*] years old. [He/she] lives in Bavaria.

**Task:** Together with your partner, match the following four pieces of art with the correct artist.

**Hints:**

1. You and your partner have 60 seconds for each piece of art.
2. If you and your partner correctly match at least three pieces of art, you can win one of 30 Amazon vouchers worth €10.
3. You must complete the full survey to qualify for one of the vouchers.

4. To increase your chances of winning, it is important that you and your partner work together.
5. You will receive points only if you both give the correct answer.
6. Use the chat window to communicate with your partner via text messages and coordinate your answers. The chat window is available for the entire task.
7. Its a good idea to introduce yourself to your partner with a short message right away.

[*Chat window*]

**Final hints before the tasks begins:** You may have to wait for a moment until your partner [*name*] has read the instructions and responds to you.

**Reminder:** You can win one of 30 Amazon vouchers worth €10.

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[*Painting is shown for 1 Minute.*]

**Question: Which artist painted this piece of art?**

Reply options: *Participants can choose one artist from a drop-down menu.*

[*This process is repeated four times. During this time the participants have the option to use the chat window to communicate.*]

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**Question: Which of the following figures best reflects how connected you feel with your partner [*name*]?**

**Hints:**

1. Option 1 means that you do not feel connected to your partner [*name*] at all.
2. Option 7 means that you feel very close to your partner [*name*].
3. Use the remaining options (2-6) to grade your answer.
4. To select one, click on the option in the header and not on the image.

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**Please still think of your partner [*name*].**

**Question:** To what extent would you refer to yourself and your partner [*name*] as "we".

**Hints:**

1. Option 1 means that you would definitely not refer to the two of you as "we".
2. Option 7 means that you would definitely speak refer to the two of you as "we".

3. Use the remaining options (2-6) to grade your answer.

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## V Explanations on the survey

**Instructions:** In the following, we would like to ask you about your willingness to get vaccinated against COVID-19. Specifically, we would like to know whether you are willing to register for a COVID-19 vaccination right away. With that we are referring to the official registration process required for residents of Bavaria to be able to obtain an appointment at a vaccination center. In this survey, we will provide you with the opportunity to switch to the official registration website of the Bavarian Ministry of Health to complete the registration. Of course, the registration is voluntary and you can also complete the survey without registering.

**Task:** Confirm that you have understood these instructions by selecting the correct answer below.

**Question:** During this survey, will you be able to switch to the official registration website of the Bavarian Ministry of Health to complete the registration for a COVID-19 vaccination?

Reply options: *Yes or No*

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### V.A Instructions Senders “not informing partner”

**Instructions:**

The survey proceeds as follows:

**Step 1:** You decide whether you want to register for a COVID-19 vaccination right away.

**Step 2:** Your partner [*name*] decides whether [he/she] wants to register for a COVID-19 vaccination right away.

**Important:** We do not tell your partner [*name*] whether you want to register for a vaccination.

You do not find out about the decision of your partner [*name*].

**Task:** Confirm that you have understood the instructions by selecting the correct answer below.

**Question:** Will your partner [*name*] find out whether you want to register?

Reply options: *Yes/No*

---

### V.B Instructions Senders “informing partner after”

**Instructions:**

We will tell your partner [*name*] with a high probability whether you want to register for a vaccination. This proceeds as follows:

**Step 1:** You decide whether you want to register for a COVID-19 vaccination right away.

**Step 2:** Your partner [*name*] decides whether [he/she] wants to register for a COVID-19 vaccination right away.

**Step 3:** We tell your partner [*name*] whether you want to register for a vaccination.

**Important:** Your partner [*name*] will find out about your registration decision **only after** [he/she] has already decided whether [he/she] wants to register.

You do not find out about the decision of your partner [*name*].

**Task:** Confirm that you have understood the instructions by selecting the correct answers below.

**Question 1:** Will your partner [*name*] find out with a high probability whether you want to register?

Reply options: *Yes/No*

**Question 2:** When will your partner [*name*] find out about your registration decision? **Directly before** or **only after** [he/she] can register for a COVID-19 vaccination?

Reply options: *Directly before/Only after*

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### V.C Instructions Senders “*informing partner before*”

#### **Instructions:**

We will tell your partner [*name*] with a high probability whether you want to register for a vaccination. This proceeds as follows:

**Step 1:** You decide whether you want to register for a COVID-19 vaccination right away.

**Step 2:** We tell your partner [*name*] whether you want to register for a vaccination.

**Important:** Your partner [*name*] will find out about your registration decision **directly before** [he/she] can decide whether [he/she] wants to register.

**Step 3:** Your partner [*name*] decides whether [he/she] wants to register for a COVID-19 vaccination right away.

You do not find out about the decision of your partner [*name*].

**Task:** Confirm that you have understood the instructions by selecting the correct answers below.

**Question 1:** Will your partner [*name*] find out with a high probability whether you want to register?

Reply options: *Yes/No*

**Question 2:** When will your partner [*name*] find out about your registration decision? **Directly before** or **only after** [he/she] can register for a COVID-19 vaccination?

Reply options: *Directly before/Only after*

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## V.D Instructions Receivers “informed before” and “informed after”

**Instructions:** The survey proceeds as follows:

**Step 1:** Your partner [*name*] decides whether [he/she] wants to register for a COVID-19 vaccination right away.

**Step 2:** You decide whether you want to register for a vaccination now. Since you are the second to decide you may have to wait for a moment.

We do not tell your partner [*name*] whether you want to register for a vaccination.

**Task:** Please confirm that you have understood these instructions by selecting the correct answer below.

**Question:** Will your partner find out about your decision?

Reply options: *Yes/No*

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## VI Vaccination willingness

### VI.1.A First stage Senders “not informing partner”

**Reminder:** Below we will provide you and your partner [*name*] with the opportunity to go to the official registration website of the Bavarian Ministry of Health to complete the registration process.

Your partner [*name*] will not know whether you wish to register for a COVID-19 vaccination.

**Remember:** Your partner [*name*] **will not** learn about your registration decision.

**Question 1:** What do you think? How likely is it that your decision to register or not to register will influence your partner’s decision?

**Hints:**

- Click on the bar at the bottom to reveal the slider.
- Then move the slider to give your answer.
- 0 percent means "there is no way I can influence my partner with my decision".
- 100 percent means "I can definitely influence my partner with my decision".

**Remember:** Your partner [*name*] **will not** learn about your registration decision.

**Question 2:** What do you think? How likely is it that your partner will make the same decision as you?

**Hints:**

- Click on the bar at the bottom to reveal the slider.
- Then move the slider to give your answer.

- 0 percent means “my partner will definitely not decide the same way I do”.
  - 100 percent means “my partner will definitely decide like me” .
- 

### VI.1.B First stage Senders “*informing partner after*”

**Reminder:** Below we will provide you and your partner [*name*] with the opportunity to go to the official registration website of the Bavarian Ministry of Health to complete the registration process.

Your partner [*name*] will learn with a high probability whether you wish to register for a COVID-19 vaccination.

**Remember:** Your partner [*name*] will learn about your registration decision only after [he/she] has already decided whether to register for COVID-19 vaccination now.

**Question 1:** What do you think? How likely is it that your decision to register or not to register will influence your partner’s decision?

**Hints:**

- Click on the bar at the bottom to reveal the slider.
- Then move the slider to give your answer.
- 0 percent means “there is no way I can influence my partner with my decision”.
- 100 percent means “I can definitely influence my partner with my decision”.

**Remember:** Your partner [*name*] will learn about your registration decision only after [he/she] has already decided whether to register for COVID-19 vaccination now.

**Question 2:** What do you think? How likely is it that your partner will make the same decision as you?

**Hints:**

- Click on the bar at the bottom to reveal the slider.
  - Then move the slider to give your answer.
  - 0 percent means “my partner will definitely not decide the same way I do”.
  - 100 percent means “my partner will definitely decide like me” .
-

### VI.1.C First stage Senders *'informing partner before'*

**Reminder:** Below we will provide you and your partner [*name*] with the opportunity to go to the official registration website of the Bavarian Ministry of Health to complete the registration process.

Your partner [*name*] will learn with a high probability whether you wish to register for a COVID-19 vaccination.

**Remember:** Your partner [*name*] will learn about your registration decision right before [he/she] decides whether to register for a COVID-19 vaccination.

**Question 1:** What do you think? How likely is it that your decision to register or not to register will influence your partner's decision?

**Hints:**

- Click on the bar at the bottom to reveal the slider.
- Then move the slider to give your answer.
- 0 percent means "there is no way I can influence my partner with my decision".
- 100 percent means "I can definitely influence my partner with my decision".

**Remember:** Your partner [*name*] will learn about your registration decision right before [he/she] decides whether to register for a COVID-19 vaccination.

**Question 2:** What do you think? How likely is it that your partner will make the same decision as you?

**Hints:**

- Click on the bar at the bottom to reveal the slider.
- Then move the slider to give your answer.
- 0 percent means "my partner will definitely not decide the same way I do".
- 100 percent means "my partner will definitely decide like me" .

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### VI.2.A Registration intent Senders *"not informing partner"*

**Reminder:** if you live in Bavaria and want to get vaccinated, this registration is required to get a vaccination appointment at a Bavarian vaccination center.

Your partner [*name*] **will not** learn if you want to register for a COVID-19 vaccination.

**Question:** Would you like to register for a COVID-19 vaccination?

Reply options: *Yes/No*

---

### **VI.2.B Registration intent Senders 'informing partner after'**

**Reminder:** if you live in Bavaria and want to get vaccinated, this registration is required to get a vaccination appointment at a Bavarian vaccination center.

Your partner [*name*] will learn with a high probability if you wish to register for a COVID-19 vaccination.

**Important:** Your partner [*name*] will learn about your registration decision only after [he/she] has already decided whether to register for a COVID-19 vaccination.

**Question:** Would you like to register for a COVID-19 vaccination?

Reply options: *Yes/No*

---

### **VI.2.C Registration intent Senders 'informing partner before'**

**Reminder:** if you live in Bavaria and want to get vaccinated, this registration is required to get a vaccination appointment at a Bavarian vaccination center.

Your partner [*name*] will learn with a high probability if you wish to register for a COVID-19 vaccination.

**Important:** Your partner [*name*] will learn about your registration decision directly before [he/she] decides whether to register for a COVID-19 vaccination.

**Question:** Would you like to register for a COVID-19 vaccination?

Reply options: *Yes/No*

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### **VI.2.D Registration intent Receivers 'informed after'**

**Reminder:** if you live in Bavaria and want to get vaccinated, this registration is required to get a vaccination appointment at a Bavarian vaccination center.

Your partner will not know if you want to register.

**Question:** Would you like to register for a COVID-19 vaccination?

Reply options: *Yes/No*

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### VI.2.E Registration intent Receivers '*informed before*'

**Reminder:** if you live in Bavaria and want to get vaccinated, this registration is required to get a vaccination appointment at a Bavarian vaccination center.

Your partner will not know if you wish to register.

**Important:** Your partner [*name*] [would like/would not like] to register for a COVID-19 vaccination.

**Question:** Would you like to register for a COVID-19 vaccination?

Reply options: *Yes/No*

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*new page*

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### VI.3 Registration for COVID-19 vaccine

#### Would you like to register now?

To register, please click on **Yes, register now for a COVID-19 vaccination** below.

This will open the official registration website of the Bavarian Ministry of Health in a new browser window or tab. To successfully register for a COVID-19 vaccination, follow the instructions on the registration website.

**Important:** Please do not close the browser window or tab in which you are answering the survey during registration.

**Additional Notes:** We do not have any access to the information you provide on the registration website. Registration is voluntary and it does not entail an obligation to get vaccinated. Your reward for this survey is independent of whether you register.

Button: *Yes, register for the COVID-19 vaccination right away.*

[*Opens the link to the official registration website.*]

#### Have you successfully registered?

Here's how to proceed: once you have registered, please continue with the survey by clicking **Yes, I have registered and would like to continue with the survey** at the bottom of this page.

#### Don't want to register now?

If you do not wish to register now, you will not be penalized in any way, for example by being paid less for this survey. To continue with the survey, please click **No, I have not registered and would like to continue with the survey** at the bottom of this page.

To continue with the survey, please answer the following question:

**Question:** have you just register for the COVID-19 vaccination?

Reply options:

- *No, I have not registered and would like to continue with the survey*
- *Yes, I have registered and would like to continue with the survey*

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*new page*

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#### **VI.4 Confirmation of registration for COVID-19 vaccination**

**Now confirm your registration:** You have indicated that you have just registered online for a Corona vaccination.

You should have received a confirmation email after completing your registration.

Please provide the following two pieces of information from the confirmation email sent out by the vaccination center:

1. Email Address
2. Subject

**Lottery:** If both of your answers are correct, you can win one of 30 Amazon vouchers worth 20€.

You must complete the survey to qualify for the lottery.

**Further notes:** Providing this information does not allow us to infer anything about you as a person. You remain completely anonymous. You can also continue with the survey without answering the questions. However, you will then not be able to participate in the lottery draw.

**Question 1:** What is the email address from which you received the confirmation email?

**Question 2:** What is the subject of the confirmation email you received from the vaccination center?

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#### **VI.5 What do you think about the COVID-19 vaccine?**

**Question 1:** What do you think? How safe is the COVID-19 vaccination?

Reply option: *Likert scale (1-7) with 1: not at all safe, 7: extremely safe.*

**Question 2:** What do you think? How effective is the COVID-19 vaccination?

Reply option: *Likert scale (1-7) with 1: not at all effective, 7: extremely effective.*

**Question 3:** What do you think? To what extent is it socially desirable to get vaccinated against COVID-19?

Reply option: *Likert scale (1-7) with 1: not at all socially desirable, 7: extremely socially desirable*

**Question 4:** To what extent do you agree with the following statement? Statement: if everyone is vaccinated against COVID-19, I don't need to get vaccinated too.

Reply option: 1: *do not agree at all*, 7: *agree completely*

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**Question:** How likely are you to get vaccinated against COVID-19?

Please use the bar/slider for your answer.

- Click on the bar at the bottom to reveal the slider.
- Then move the slider to make your selection.
- 0 percent means "definitely not willing to get vaccinated."
- 100 percent means "definitely willing to get vaccinated."

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## VII Further demographic information

**To conclude this survey, please provide some general information.**

**Question 1:** What county do you live in?

**Question 2:** What is your zip code?

**Question 3:** What was your household's monthly net income last year?

**Note:** We mean the sum that results from wages, salaries, income from self-employment, pensions, income from public aid, income from letting, housing allowances, child benefits and all other incomes, after the deduction of taxes and social security contributions.

Reply options:

- Less than 1,100 EUR
- 1.100 - 1.500 EUR
- 1,501 - 2,000 EUR
- 2,001 - 2,600 EUR
- 2,601 - 4,000 EUR
- 4,001 - 7,500 EUR
- More than 7,500 EUR

**Question 4:** What is your highest educational degree (general or vocational)?

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## VIII End of survey

### Thank you for participating in our survey!

In the following, we list your performance in the task in which you had to assign artworks to artists together with your partner and inform you whether you have won one of the Amazon vouchers. Afterwards, we ask you to answer two more questions about this survey yourself and give you the opportunity to give us feedback on the survey.

- Unfortunately, you have not won one of the raffled Amazon vouchers./Congratulations, you have won one of the raffled Amazon vouchers.
- If you would like to know how you and your partner did on your shared task, please click here. [*Upon clicking the button, participants' answers and the corresponding solutions open in the same window.*]
- *For Receivers 'informed after'*: Finally, we would like to inform you that your partner [*name*] [registered/did not register] for a COVID-19 vaccination.
- Thank you again for participating in our survey.

### Please answer the following questions to complete the survey:

**Question 1:** What do you think? What was the purpose of this survey?

**Question 2:** Where on the political spectrum would you place this survey?

**Hints:** Please use the slider to tell us the extent to which you felt this survey was leaning more toward the political right or toward the political left.

*Click on the bar below to reveal the slider. Then move the slider to make your selection.*

**Feedback** If you would like to give us any feedback on the survey, please feel free to do so here. Would you like to close the survey now?

*Click on **Close survey***

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