I Z A Institute
of Labor Economics
Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP No. 12828

Don't Patronize Me! An Experiment on Preferences for Authorship

Silvia Lübbecke
Wendelin Schnedler

DECEMBER 2019

I Z A Institute
of Labor Economics

Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP No. 12828

Don't Patronize Me! An Experiment on Preferences for Authorship

Silvia Lübbecke
University of Paderborn

Wendelin Schnedler
University of Paderborn, University of Bristol and IZA

DECEMBER 2019

ISSN: 2365-9793

IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Don't Patronize Me! An Experiment on Preferences for Authorship*

Do people only reject interference and keep control in order to affect the outcome? We find that 20% of subjects reject unrequired help and insist on their solution to a problem – although doing so is costly and does not change the result. We tease out the motives by varying the information available to the interfering party (paternalist). Subjects do not resist to show to the paternalist that they were able to find the correct solution. Instead, two motives seem to play a role. First, subjects prefer to have produced or 'authored' the solution themselves. Second, subjects desire to signal their authorship and hence their independence to the paternalist.

JEL Classification: C91, D82, D91

Keywords: self-esteem, image concerns, autonomy, competence, paternalism, selfdetermination, preference for authorship

Corresponding author:
Wendelin Schnedler
University of Paderborn
Faculty of Economics
Warburger Straße 100
33098 Paderborn
Germany

E-mail: wendelin.schnedler@upb.de

* The data that support the findings of this study are available from the corresponding author upon reasonable request. We would like to thank Ed Hopkins, Ferdinand von Siemens, Jörg Oechssler, Hans-Theo Normann, Anna Ressi, Hendrik Rommeswinkel and participants of the annual conferences of the GfeW (2018), the GEABA (2018) and the Organizational Economics Committee of the VfS (2019) for their helpful comments. In addition, we are very grateful to Nina Stephan for excellent research support.

Résiste

Prouve que tu existes

Michel Berger

1 Introduction

The slogan 'take back control' allegedly inspired many Britons to vote for leaving the EU in the 2016 referendum although they are likely to suffer economically from the departure.[1] The most important reason given in an exit poll was not the desire to change a specific policy but "the principle that decisions about the UK should be taken in the UK."[2] This suggests that the leave-vote was not necessarily about what gets decided but who decides or 'authors' a certain outcome.

If humans do not only want control to affect the outcome but have such a preference for authorship, this has important ramifications. In particular, a decision maker who well-meaningly provides people with an outcome that is beneficial to them cannot be sure that this outcome will be accepted. It might even spark resistance. In order to avoid this, organizational designers would have to think about how to involve the people such that they 'feel included'. Indeed, scholars from other fields, for example, management (Pierce et al., 2001), organizational behavior (Avey et al., 2009) or community planning (Lachapelle, 2008) claim that such 'psychological ownership' is important.

Whether humans indeed care about 'authorship' is hard to detect with observational data. The refusal of a good outcome just because it is decided by someone

[1] Brexiting yourself in the foot: Why Britain's eurosceptic regions have most to lose from EU withdrawal. www.cer.eu. Retrieved 6 December 2019.

[2] "How the United Kingdom voted on Thursday... and why ? Lord Ashcroft Polls". lordashcroftpolls.com. Retrieved 6 December 2019.

else may be perceived as childish. Hence, economic agents (managers, employees, etc.) have an incentive to mask this refusal by pretending that there are substantial differences between the resisted outcome and what they want. Moreover, by resisting, agents typically retain control over the outcome. In other words, resistance may be driven by a preference to influence the outcome in a direction favored by the agent. In practice, it is thus very hard if not impossible to distinguish whether some behavior is driven by the desire for authorship or to affect the outcome. However, only in the latter case, we can be certain that providing a beneficial outcome will spark no resistance.

This paper provides, to our knowledge for the first time, clean evidence that individuals have a preference for authorship. They resist an outcome although this does not allow them to actually change it. We find that about a fifth of subjects who successfully solved a logical puzzle insist on their solution and reject the very same solution if offered by some paternalist although doing so entails material losses. This resistance is not accidental. The rate at which it occurs is significantly different from the rate at which subjects commit an equally costly error. Resisting agents are on average willing to pay the non-negligable sum of 2.10 € for 'their' solution, which amounts to about 26% of the bonus earned by correctly solving the puzzle.

There are different reasons why the agent may resist interference. First, the agent may want to inform the paternalist that she was capable of solving the problem herself and the key to deal with resistance is to recognize her competence. Second, she may genuinely prefer to have authored the solution herself, e.g., because this allows her to see herself as someone determining her own fate (Deci, 1971; Deci and Ryan, 1985), or more formally, to signal a positive image to her

future self (Bodner and Prelec, 2003). In this case, resistance can be overcome by recognizing the agent's input. Finally, the agent may want to signal that she does not like to be 'messed' with and respecting this could be a solution. In summary, the remedy that an organization should use depends on the motive for resistance.

The different motives are separated out in our experiment by systematically varying the information available to the paternalist. In our first treatment, the R treatment, the paternalist only learns whether the agent resisted interference or not—R stands for resistance. In this treatment, resistance might be used for any of the three motives put forward and about a quarter of the subjects resist. In our RC treatment, we inform the paternalist not only about whether the agent resisted interference but also whether her solution was correct. Being informed about the correctness removes the agent's need to signal competence. The share of resistance remains around 25%, which indicates that signaling competence to the paternalist is not the motive for resistance in our data. Finally, in the C treatment, the paternalist only learns whether the puzzle was solved correctly but not whether the agent rejected help. (The design ensures that the paternalist cannot deduce this from his payoff either.) The resistance rate drops by about 12 percentage points. This drop is significant, which suggests that resistance is used by some subjects to signal their desire to be the author of the solution. The resistance rate in the C treatment of ca. 14% is still significantly larger than the error rate. Since resistance is not observed and cannot be used as a signal to the paternalist, it must result from a genuine preference to have authored the solution.

Preference for authorship can explain why subjects want to keep control in various experiments. Subjects are, for example, unwilling to use algorithms that are far better in predicting outcomes than they are—unless they can have some small

effect on the predicted result (Dietvorst et al., 2016). Likewise, they prefer to take a decision themselves when interacting with humans (Fehr et al., 2013; Dominguez-Martinez et al., 2014; Bobadilla-Suarez et al., 2017). Neri and Rommeswinkel (2014), for example, show that subjects are interference-averse in the sense that they prefer others not to affect their payoff. People want to maintain this control, even if this entails material losses (Bartling et al., 2014; Owens et al., 2014). In Owens et al. (2014), for example, subjects prefer to get a premium if they have correctly answered a quiz question to getting the same premium when another person has correctly answered a different quiz, although they believe that the other person is more likely to answer correctly. They thus lose in expected terms from insisting on their solution.

Probably, the closest paper to ours is Sloof and von Siemens (2017), where subjects pay for being able to decide which of two identical lotteries is played rather than letting another (equally badly informed) subject choose. They argue convincingly that the reason is that subjects believe that they can affect the outcome of the lottery in their favor by maintaining control over this meaningless choice.

In all these studies, subjects pay a price and can then affect some outcome. Their willingness to pay may thus either come from the desire to change this outcome or from having authored this outcome. Differing from these studiey, the first explanation is excluded here by not allowing the agent to alter the outcome.

Sloof and von Siemens (2019) examine how a worker responds to different ways of ending up with the same undesirable project. First, the project may have been chosen by the worker herself who by design is unable to identify a project that is more beneficial. Second, it may have been knowingly selected by another subject (manager) instead of the more beneficial project. When the manager deliberately

puts the worker on the less attractive project, workers put in less effort and thereby harm the manager. In other words, the worker's reciprocate the manager's behavior. In our experiment, we eliminate reciprocity by not giving the agent the power to change the principal's payoff following interference.

By eliminating the desire to alter the outcome and reciprocity as explanations for resistance, our design can cleanly identify preferences for authorship.

2 Experimental Design

In the experiment, an agent is first given a logical puzzle and asked to submit a solution. Without knowing whether the solution is correct, the paternalist then decides whether to interfere and submit the correct solution instead of that of the agent. Finally, the agent can decide whether to reject the interference and insist on her first submitted solution (details of the respective decisions follow soon).

We deliberately paired each agent with just one other participant in the role of paternalist. We were afraid that assigning several agents to each paternalist would have diluted the paternalist's interest in an individual agent and hence the agent's desire to signal. Had we chosen to replace the human paternalist by a robot, we would have eliminated the motive to signal entirely.

In order to avoid demand effects purely on the basis of the word 'paternalist', we framed the roles as 'observer' for the paternalist and 'decision maker' for the agent. This terminology also emphasizes that the main task lies with the agent.

We exclude any conflict of interest in the material payoffs by paying both, paternalist and agent, a bonus if the correct solution to the logical puzzle is submitted. Since we want the agent to exert effort and solve the puzzle, we make her the

main stake holder. Her bonus amounts to 80 Taler, while that of the paternalist is 50 Taler. In order to further strengthen the agent's incentive, we give her an endowment of only 40 Taler, while the paternalist's is 100 Taler. The paternalist thus cares about a correct solution but not as much as the agent.

i. Logical puzzle

The logical puzzle is designed in such a way that it appears difficult at first sight but actually is easy to solve. We wanted a maximal number of correct answers because we are interested in subjects who receive help but actually do not need this help. The task should not appear too simple because we want the paternalist to be uncertain about the agent's ability to find the correct solution—for the puzzle text, see the appendix. The first stage ends when all agents have submitted a proposal for a solution to the puzzle.

ii. Paternalist's decision to help

The paternalist can decide whether he wants to replace the agent's submitted proposal (depicted by an envelope, see Figure 6) with the correct solution (depicted by an envelope containing the correct solution). If the paternalist decides to replace the proposal, the correct solution is automatically submitted for him (even if he does not know the solution himself). When deciding, the paternalist does not know which solution the agent has proposed or whether it is correct. Replacing the proposal costs the paternalist 10 Taler. The costs of help are only borne by the paternalist; the agent does not lose out materially from being helped. The paternalist's decision to help is not framed neutrally but referred to as 'interfering'

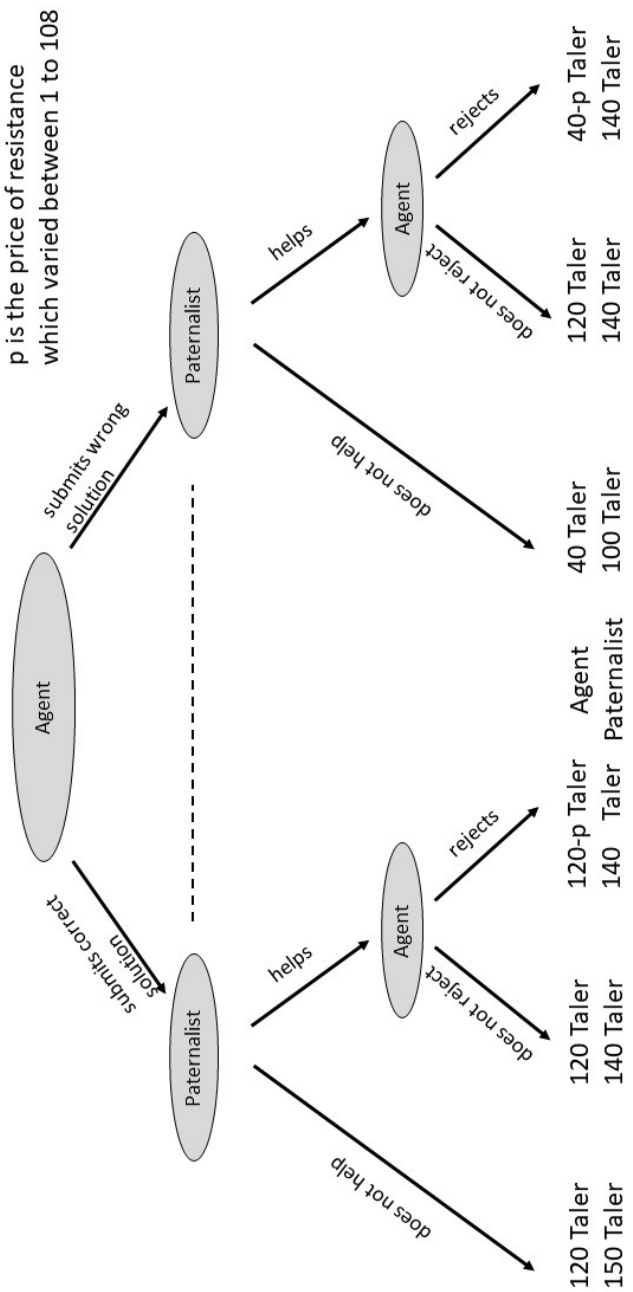


Figure 1: Illustration of decision process

in the experiment.[3]

If the paternalist knew that the agent's solution were correct, helping would generate no benefit. Since help entails costs, the paternalist would not help in this case. If the parternalist knew the agent's solution to be wrong, helping would generate 50 Taler at the price of 10 Taler and would be payoff-maximizing for the paternalist. Since the paternalist does not know whether the agent's solution is correct, helping is only rational for the paternalist if he has sufficient doubts about the correctness of the agent's solution. Being helped can thus indicate to the agent that the paternalist lacks confidence in the agent's competence.

iii. Agent's decision to resist interference

In the last stage, the agent can resist the paternalist's help. In particular, the agent can incur costs of 0.10 € in order to ensure that her solution rather than the correct solution of the paternalist is used to determine whether the agent gets the bonus payment.[4] Accepting help, however, is for free and the agent receives the bonus irrespective of the correctness of her solution. The agent is asked whether she wants to 'resist' the interference,[5] which clearly brings out the opposing character of the action.

In order to maintain more control, we remove any uncertainty that the subject in the role of the agent might have about her own ability. This is why we inform agents whether their solution is correct before they have to decide on whether to resist interference. The resistance decision hence becomes independent from the agent's risk preferences.

[3]The term used in the German instructions is 'Einmischung'.

[4]In 2019, we also elicited the willingness to pay for resistance with a price list—see Section 4.

[5]The term used in the German instructions is 'sich widersetzen'.

In principle, the agent might resist interference to punish the paternalist, e.g., for not trusting in her competence. We eliminate this reason by not allowing resistance to affect the paternalist's payoff: a helping paternalist gets his bonus regardless of whether the agent resisted his interference or not.

Since we are interested in studying resistance to interference when this does not affect the outcome, our analysis has to be restricted to subjects who correctly solved the logical puzzle. Not every subject can be expected to solve the puzzle and we have to ensure that we observe resistance decisions for enough of these subjects without making the puzzle easier and hence less meaningful. We meet this challenge by a specific order of moves in combination with holding back information and employing the strategy method.

First, the paternalist has to choose whether to help or not without knowing whether the agent's solution is correct. Had the paternalist known the correctness of the agent's solution before deciding to help, he would probably only have helped agents with the wrong solution. Consequently, we would have observed only very few or even no subjects receiving unnecessary help.

Second, the agent's decision is elicited using the strategy method. More precisely, the agent is asked whether she wants to resist the paternalist's interference before she learns whether the paternalist actually interfered. If the paternalist helps, the decision to reject or accept this interference determines the agent's actual payoff. If the paternalist does not help, the agent's decision is ignored. We can thus observe the decision to resist interference from any subject that has correctly solved the logical puzzle.

The strategy method can in principle be criticized for creating a demand effect by suggesting to the agent to act differently under different contingencies. Notice

that this criticism does not apply here. Since the agent only faces one contingency namely 'being helped'; subjects never have to decide or even contemplate what they would have done had the paternalist not helped. Indeed, interference cannot be resisted if it has not taken place.

Salience of the strategy method was increased by the fact that the task appears difficult at first glance. The agent has experienced this difficulty herself in the initial stages of trying to solve the puzzle. From the agent's perspective, it is thus very plausible (but not certain) that the paternalist will interfere.

Third, the paternalist's decision to help follows the agent's decision whether to put effort into solving the logical puzzle. Suppose the paternalist could decide to help before the agent were given the opportunity to solve the puzzle. Then, even capable agents who are being helped may be discouraged and put in little or no effort to solve the puzzle. This would have resulted in very few or no agents who correctly solve the puzzle.

3 Predictions

A key statistic will be how many of the subjects in the role of agent resist interference. The share of resisting agents then needs to be compared to some suitable benchmark. First, we will establish this benchmark. Then, we show that under various classical as well as behavioral theories, subjects are predicted not to resist interference. Next, we bring forward three motives why subjects might resist interference and introduce three treatments to identify which motive might explain resistance.

3.1 Error rate: a benchmark for the resistance rate

If our null hypothesis is that interference is not resisted, a single case in which interference is resisted suffices to refute this null hypothesis. In other words, any resistance rate different from zero would be significant. Even though we aim to minimize error by giving clear instructions, checking understanding with control questions, and using transparent screen layouts, it seems heroic to assume that all subjects always fully understand the consequences of their actions and are free from mistakes. More plausibly, some share, say γ, of subjects err. One could then say that a significant share of agents resists interference if this share statistically differs from the error rate γ.

But what is an adequate value for γ? If we as authors set γ to a particular level, say 1%, we might expose ourselves to the criticism of having chosen this level after knowing the data. Rather than setting the value, we obtain an estimate from the data. Starting with the sessions in May 2016, we added a respective feature to our design. We give subjects the choice between two options that seemingly differ in terms of the denomination of coins in which they receive their payoff. The two payoff options are presented as two lists and are identical—only the ordering of entries in the list differs. The first option is for free, the second option is priced at 0.10 €. The costs and location on the screen are exactly identical to the choice of resisting interference (compare the screen shots in Figure 4 and Figure 5 in the appendix). Monetary benefits from the costly option are the same as in the case of resisting interference: there are none. If a subject chooses the costly second option, she would get the same payoff as under the first option minus the costs of 0.10 €. By examining the answers, we can thus determine how many subjects are willing

to ‘pay for nothing’, which gives us the desired estimate of an error rate.

The estimated error rate serves as an upper bound because it is likely to be inflated for several reasons. First, subjects have to take in more numbers on the decision screen than when deciding whether to resist. Second, the decision about the denomination of coins is at the end of the experiment, where subjects may be more tired and hence more error prone. Finally, while subjects were prepared for the consequences of the decision to resist interference in the instructions, the decision in which coins they want their payout comes as a surprise.

3.2 Theories predicting no resistance

In our experiment, a purely money-maximizing agent will not resist interference even if her solution to the logical puzzle is correct. Doing so would lead to monetary costs without generating a monetary benefit. Standard reciprocity theories (Rabin, 1993; Charness and Rabin, 2002; Dufwenberg and Kirchsteiger, 2004; Falk and Fischbacher, 2006) also predict no resistance because the agent’s resistance decision does not affect the paternalist’s payoff; the agent can thus not punish or reward the paternalist even if she wanted to. An agent with fairness preferences in the sense of Fehr and Schmidt (1999) does not resist interference either. Whether the agent resists or not, the paternalist always has a higher monetary payoff.

Moreover, the agent also has no incentive to resist interference in order to control the outcome. Unlike in the literature on maintaining real or illusory control, the agent preserves no decision right by resisting interference: resistance does not enlarge her strategy space. An agent with direct preferences to control the outcome thus also has no incentive to resist. All these arguments suggest the following

hypothesis.

Hypothesis 1a. *The resistance rate is smaller or equal to the error rate.*

3.3 Motives to resist and respective treatments

While most standard theories predict no resistance, there are also reasons why the agent may resist interference.

First, the agent may have a fundamental preference for having produced the bonus herself (authorship preference). For example, resisting and thereby reclaiming authorship may re-instate the meaning of the agent's effort in finding a solution. Frankl (1946, 1985) argues that humans seek meaning in what they do. Indeed, the lack of meaning may be demotivating (Ariely et al., 2008). If one's own solution to the puzzle is replaced by the paternalist's solution, the considerable effort that went into this solution becomes meaningless. By resisting, a subject reclaims authorship of the bonus in the sense that she would not have received this bonus in case her solution had been wrong. Arguably, this returns meaning to her effort.[6]

An agent may want also want to signal to the paternalist that she produced 'her own' bonus (authorship signal) or that she was capable of doing so (competence signal). Being regarded as 'independent' or competent may have beneficial effects in real-life. For example, one may be given more discretion or assigned to more interesting tasks. In the lab, however, anonymity eliminates this possibility. Still, psychologists like Maslow (1943) claim that there is a fundamental need for the esteem of others and Andreoni and Bernheim (2009) provide evidence that even

[6] An authorship preference may also be argued on the basis that "help offered by others may be detrimental to one's self-esteem and create a dependence" (Bénabou and Tirole, 2003, p. 492). More generally, reclaiming authorship opens scope for the agent to signal to her future self in the sense of (Bodner and Prelec, 2003).

under anonymity people care about how they are perceived—albeit with respect to their fairness.

In our R treatment, the paternalist only knows whether the agent resisted or not. In this treatment, any of the three motives may be present. If so, we expect to see resistance.

Hypothesis 1b. *The resistance rate in the R treatment is larger than the error rate.*

The incentive for the agent to use resistance as a costly way in order to signal competence is removed in our RC treatment, where the paternalist always learns whether or not the agent's solution to the puzzle was correct.

Hypothesis 2. *If subjects resist interference to signal their competence, the resistance rate is higher in the R than in the RC treatment.*

If the paternalist knows that the agent solved the puzzle correctly, the agent may still want to signal that she does not like interference. In the C treatment, we remove this motive by not informing the paternalist about whether the agent resisted. By design, the paternalist's payoff is independent from resistance, so he cannot infer from his payoff whether the agent rejected, either.

Hypothesis 3. *If subjects resist interference to signal authorship, the resistance rate is higher in the RC than in the C treatment.*

In the C treatment, the paternalist never learns whether the agent rejected help and the agent cannot use resistance as a signal. The C treatment is hence stripped off any of the external signaling motives that we have discussed above. What remains in this treatment is the procedural preference of having determined the outcome.

Hypothesis 4. *If subjects resist because they genuinely want to have produced the outcome (preference for authorship), the resistance rate in C treatment is higher than the error rate.*

Table 1 gives an overview over the treatments and the three types of motives.

paternalist receives ...		...information about resistance	
		YES	NO
... information about correctness: YES	YES	RC treatment: **authorship preference + authorship signal**	C treatment: **authorship preference**
... information about correctness: NO	NO	R treatment: **authoship preference + authorship signal + competence signal**	

Table 1: Motives in Treatments

4 Implementation and Descriptive Statistics

A total of 24 sessions was run in the BaER-Lab at the University of Paderborn in March (6 sessions) and May 2016 (6 sessions) and in April/May 2019 (12 sessions). Each session was devoted to one of the three treatments. Every treatment was run 8 times. A session took between 48-90 minutes including the time needed to pay the participants. The experiment was computerized via z-Tree (Fischbacher, 2007). All students were recruited from the same subject pool via ORSEE (Greiner, 2015) and each subject only participated in one session.

In total, 604 students took part in the experiment. As subjects were matched in pairs, 302 students acted in the role of an agent. Recall that our analysis focuses on subjects who correctly solved the puzzle. Excluding all observations in which the

subject failed to solve the puzzle leaves us with a total number of 225 observations: 71 subjects participated in the R treatment, 76 in the RC treatment, 78 in the C treatment.

During the experiment, subjects received their payoffs in Taler which were converted into € and paid out in cash immediately after each session, additional to a fixed show-up fee of 2.50 €. On average, participants received a total payoff of 11.91 €. Subjects were provided with a printed version of the instructions in German. Instructions consisted of a written part explaining the experiment in detail and a graphical part illustrating the sequence of the experiment in order to facilitate understanding (see Figures 6, 7 and 8 in the appendix). The instructions were identical for all subjects within each session. They differed across treatments and also reflected the changes in the design between 2016 and 2019 to which we will return below.

Prior to the experiment, participants answered comprehension questions. We took extra time and care to ensure that subjects fully understand the consequences of their choices. When subjects answered comprehension question wrongly, the screen of the respective subject was blocked. The subject then had to call the experimenter for unblocking the screen. At this opportunity, the experimenter reviewed the relevant material for the answer with the subject without suggesting an answer. The experimenter then unblocked the screen and left the subject alone for the decision. If the answer was wrong again, the procedure started from the beginning. Answering wrongly was thus unusually costly for subjects who were alerted to this procedure beforehand. This gives us more confidence that subjects thought hard about the control questions than usually. The experiment only started when all subjects had answered all these questions correctly.

At the end of every session, subjects answered questions about their socio-demographic characteristics and their behavior in the experiment. Participants came from different study backgrounds: approximately 40% were enrolled in the faculty of business administration and economics, 34% intended to get a teaching degree and the remaining participants studied other subjects, such as engineering, cultural sciences, computer sciences and natural sciences. Randomization seems to have worked well—see 2. The shares of correct solutions, economics students and females fluctuate within the limits of what would be expected; there are no significant differences using Fisher's exact test.

	C treatment	RC treatment	R treatment	Total
Observations	99	98	105	302
with correct solution	71 (71%)	76 (78%)	78 (74%)	225
Economics Students (in %)	43.66	43.22	30.77	39.11
Female Participants (in %)	67.61	59.21	57.69	61.33
Age	23.12	22.82	22.77	22.89
Payoff in €	12.03	11.85	11.85	11.91

Table 2: Summary Statistics

Reassuringly, the decision how to respond to interference is actually empirically salient: paternalists intervene in slightly more than half of the cases.[7]

The error benchmark "paying for nothing" was not elicited in March 2016 and is thus missing for the first 6 sessions. Between 2016 and 2019, the Baer-Lab passed new rules that required a higher average pay. In order to keep the share of variable pay constant, the adjustment was carried out by doubling the exchange rate from 1 Taler = 5 cents in 2016 to 1 Taler = 10 cents. More importantly, the 12 sessions in 2019 were used to elicit the subjects' willingness to pay for resistance. We offered subjects ten different prices and asked for each price whether they

[7]Interference varies across treatments but not significantly (41%-60%).

would resist; one of these was then selected randomly and paid out. The first price was presented on a separate screen, so that the all decision screens including this screen were identical to the setup in 2016. The nominal price for the first resistance decision was reduced from 2 to 1 Taler, so that the actual price of resistance on this screen remained at 10 cents across all sessions. A complete overview on how many cents subjects earned for which task can be found in Table 3.

		March 2016 6 sessions	May 2016 6 sessions	April/May 2019 12 sessions
Agent	Endowment	200	200	400
	Bonus	400	400	800
	Costs of error		10	10
	Costs of resisting (first screen)	10	10	10
	Costs of resisting (list)			120, 240, 360, 480, 600, 720, 840, 960, 1080
Paternalist	Endowment	500	500	1000
	Bonus	250	250	500
	Costs of help	50	50	100

Table 3: Payments Across Sessions (in Cents)

The steeper incentives in 2019 did not increase the number of subjects who correctly solved the puzzle (75% in 2016 and 73% in 2019). A plausible explanation is that while incentives might trigger more effort, the logical puzzle requires insight not effort. Paternalists, on the other hand, are significantly less likely to intervene when costs of doing so double; the share of interventions drops from 61% in 2016 to 43% in 2019 (p-value of one-sided Fisher's exact test: 0.001).

5 Results

First, we study whether people are willing to incur costs for rejecting paternalistic help. Later, we present evidence on the reasons for this behavior.

	C treatment	RC treatment	R treatment	Total
share of resistance	14.08% (10/71)	26.32% (20/76)	24.36% (19/78)	21.78% (49/225)

Table 4: Resistance Rates in Treatments

5.1 Resisting interference

Our analysis is based only on agents who solved the logical puzzle correctly. Among these, a sizable proportion resists interference. Pooling all treatments, about one fifth of subjects resist interference (49 out of 225)—see Table 4.[8] For 172 agents, we know whether they are willing to "pay for nothing" in addition to their resistance decision. In this group, the error rate is about 3.5%: 6 out of 136 subjects choose the costly payoff option which delivers no additional value—see Figure 2. This error rate is significantly different from the average resistance rate of 20.9% in this group (McNemar test; $p<0.001$).

That resistance decisions are not random is confirmed by a probit model. According to this model, the predicted share of resistance (pooled across treatments) is 23.60% and significantly different from zero (p-value below 0.001)—see Table 6 in the appendix.

[8]Incidentally, 10 out of 77 people with a wrong solution, still resist interference and then lose their bonus.

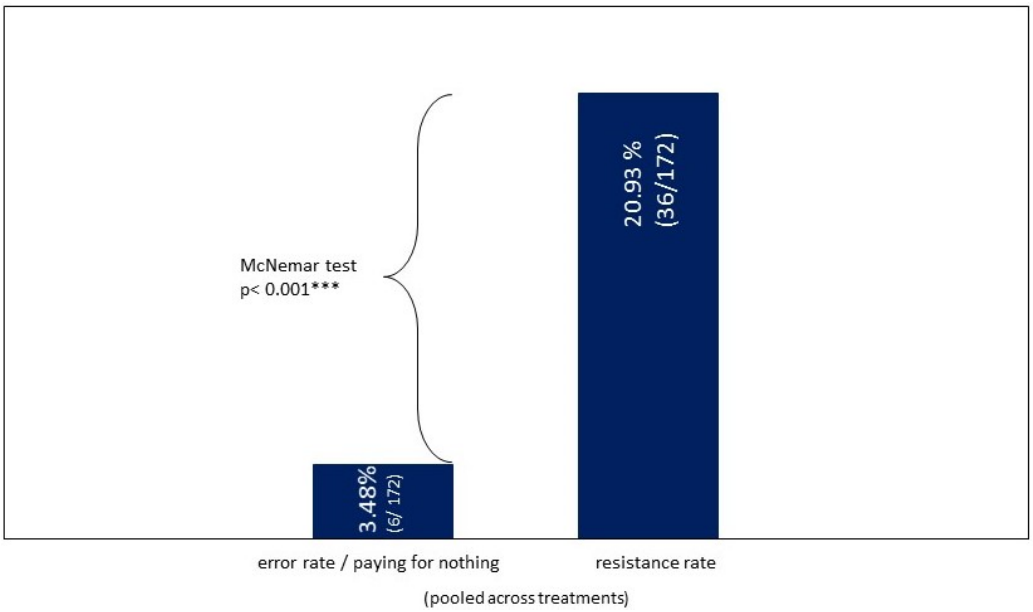


Figure 2: Comparing resistance with error benchmark

By pooling the data on all treatments, the previously run tests are rather conservative. If resistance were driven, for example, only by the desire to signal competence, then using also data from the C and RC treatment, where this motive cannot operate, would lead to a downwardly biased estimate of the share of resistance. In order to test whether any of the motives are present, one has to limit attention to the R treatment, where none of the motives is excluded by design. In the R treatment, resistance decision and the error benchmark are available for 53 subjects. Among these subjects, 22.64% resist and the error rate is 3.49%. Again, both rates differ significantly (McNemar test; p=0.007) confirming that resistance is not random.

Resistance rates are similar irrespective of whether the data was collected in 2016 or 2019. Testing for differences across the years with Fisher's exact test yields no statistically significant differences, neither within treatments or

aggregated across treatments.

For 180 subjects (all those who participated in any treatment in 2019), we elicited their willingness to pay for resistance. Focusing on subjects who resisted, more than 72% of them are willing to spend at least 12 Taler (=1.20€). The average willingness among them is 21 Taler (=2.10€) and thus above that for illusory control, its closest cousin.[9] The most often chosen option is 24 Taler (=2.40€).

In order to put these amounts into perspective notice that after the experiment, the student could have bought an ordinary coffee for 1€ at the university cafeteria as well as a freshly baked waffle for 1.20€. Alternatively, she could have ordered a freshly made cappuccino for 2.00€ at the more up-market specialist cafeteria. All these are arguably attractive options to students that they forgo by resisting.

Recall that apart from resisting and committing an error, agents can only affect their payoff by solving the puzzle. Solving the puzzle generates a bonus of 80 Taler. Among subjects who resists, there are hence more than 70% who are willing to spend 15% (=12 Taler) of their earnings in order to resist. The average willingness amounts to 26% of these earnings.

Result 1. *Resistance to interference occurs significantly more often than errors. Resisting subjects are willing to spend a substantial fraction of their earnings to resist.*

The psychological need to resist interference seems to outweigh the obvious material costs. Moreover, this need goes beyond the desire to affect the outcome or to reciprocate.

[9]The average willingness to pay is 0.80€ in (Sloof and von Siemens, 2017).

Note that the share of subjects resisting may be underestimated in all treatments for two reasons. First, resistance is elicited using the strategy method. The strategy method, however, might induce subjects to act less emotional and more rational. This would dampen the effect of psychological motives on decisions and lead subjects to choose the cheaper option. Second, the framing of the agent's decision to 'resist' may deter subjects who do not like to oppose and who would have 'resisted' had it been framed more neutrally.[10] If this were the case, the actual rate of resistance would be larger and the indication that one of these motives matters would have been even stronger.

5.2 Evidence on the motives to resist interference

In the R treatment, where all three motives may be present, 24.36% of subjects resist interference—see Figure 3. Taking away the agent's opportunity to signal that she was able to solve the puzzle does not reduce resistance. Indeed, the share of resistance increases to 26.32%—an increase that is not significant using the respective Fisher test.

Result 2. *Eliminating the need to signal competence, i.e., moving from the R to the RC treatment, does not significantly lower resistance.*

This suggests that people do not resist in order to signal their competence.

Removing from the agent the opportunity to signal to the paternalist that she has produced the bonus herself (by moving from the RC to the C treatment) decreases the share of resistance from 26.32% to 14.08%. This drop by 47% (or 12.24

[10]The wording might also invite resistance but only from people who want to resist, so it does not introduce a bias.

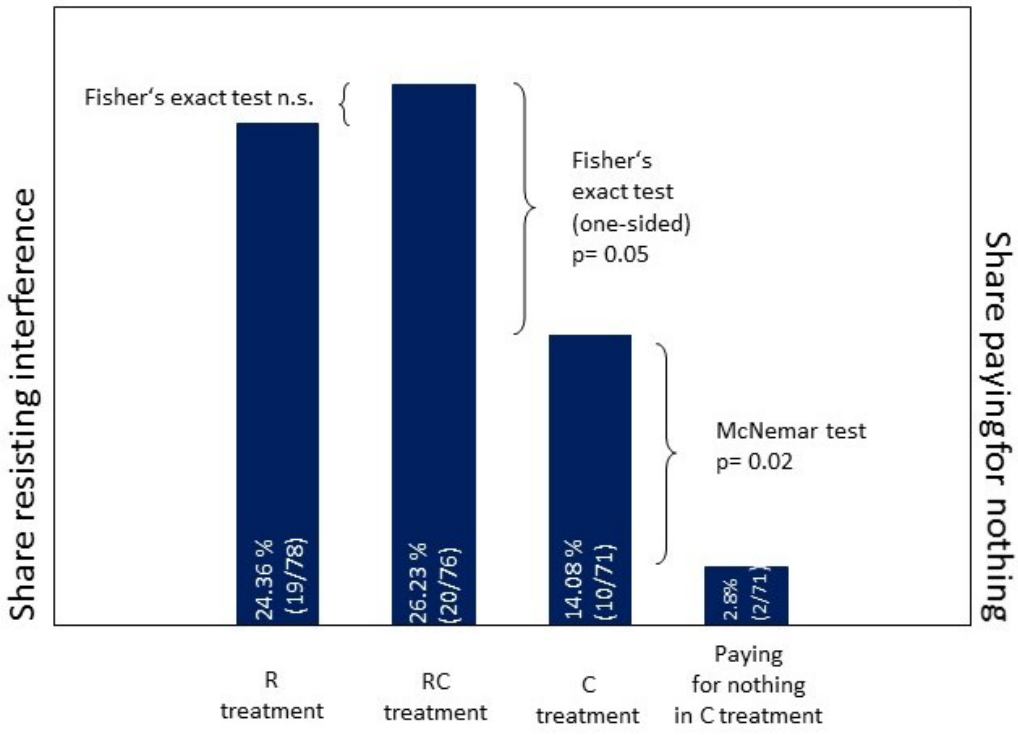


Figure 3: Resistance Rates in Treatments

percentage points) is significant (p-value for the one-sided Fisher's exact test is 0.05).[11] Linear regression and probit results confirm the significant effect —see Table 5 and 6.

Table 5: Dependent Variable: Decision to resist interference

Linear probability model	**(1)**	**(2)**
R treatment	.1027**	.0952*
	(.0493)	(.0536)
RC treatment	.1223**	.1235**
	(.0530)	(.0558)
C treatment (reference group)		
female		−.0172
		(.0808)
economics student		−.0715
		(.0701)
constant	.1408***	.1604*
	(.0215)	(.0783)
N. obs.	225	225
R^2	.0164	.0243

Notes: Linear probability estimates. Robust standard errors (clustered at session level) are in parentheses. *economics student* is equal 1 for a student studying at the faculty of business administration and economics, and zero else.
* significant at p<0.10; ** significant at p<0.05; *** significant at p<0.01

Result 3. *Eliminating the opportunity to signal authorship, i.e., moving from the RC to the C treatment, significantly reduces resistance.*

Finally, in our sparsest setting, where resistance cannot affect the paternalist's image of the agent because he does not learn whether help was rejected (C treatment), 14.08% of agents still resist interference.

There are 71 subjects in the C treatment for which we have information on resistance as well as whether they choose to spend money for nothing. If the resistance decision would be erroneous, we would expect subjects to equally err in

[11]The one-sided test is used because there is a priori no reason to consider the alternative that resistance is smaller than in the C treatment. The respective two-sided test would have been weakly significant (p-value for the two-sided Fisher's exact test is 0.1).

both groups. Among the 10 subjects who resist, however, none is willing to pay for nothing, whereas among the 61 subjects who accept interference, two are willing to pay for nothing. This difference is significance (p-value for McNemar test 0.02).

While the McNemar test uses the benchmark from within the treatment, we can also compare the share of resistance in the C-treatment of 14.08% to that of people who are willing to pay nothing in the other treatments, 3.96% (4 out of 101). Testing the null hypothesis that resistance is erroneously against the alternative that it happens more often yields a significant result (p-value of Fisher's one-sided exact test is 0.018).[12]

In the linear probability model, the reference group is a male non-economist in the C-treatment. Accordingly, the constant reflects the share of resistance in this group. This is highly significantly (p-value 0.001)—see specification (1) in Table 5. Effect sizes remain when including controls, while standard errors become larger—see specification (2).

The p-values in the linear probability model are only indicative because resistance cannot take on negative values. Predicting the share of resistance in the C treatment for the same reference group with a probit model, on the other hand, yields 15.73% and confirms that this share is significantly different from zero (the p-value is 0.017)—see Table 6 in the appendix.

Result 4. *In the C treatment, resistance to interference occurs significantly more often than errors.*

People thus seem to be willing to reject interference even if nobody learns this.

[12]The one-sided test was used since we did not expect the rate in the C treatment to be smaller than the error rate. The two-sided Fisher's exact test would also have been significant with a p-value of 0.023. The share of resistance in the C treatment is also significantly different when from the overall share of 'error' among paternalists and agents (4.55%) using a binomial test (p-value 0.001).

This is consistent with a genuine preference for authorship.

6 Conclusion

Our results provide clean evidence for the claim among community planners, organizational behaviorists, and management scholars that not only outcomes but processes matter. In our bare-bones design, resisting is costly, has no material benefit, does not improve the material situation in relation to others, or allow individuals to change the outcome. Still, every fifth subject resists interference. The desire to resist seems economically important. On average, subjects who want to resist are valuing resistance at a quarter of their main source of income in the experiment (the bonus for solving the puzzle). If a decision maker implements some policy with the best intention, she might thus face resistance if she focuses solely on the consequences of this policy but neglects the process.

Examining possible motives for resistance in our experiment, we find that the desire to show others that one could have produced the outcome does not seem to play a role. While recognition of competence may matter outside the lab, it does not in our data. A sizable number of subjects resists although the interfering party (paternalist) never learns about this. Subjects appear to have a genuine preference for authorship: they want to have 'their say' in the outcome even if they cannot change it. Subjects also seem to care for signaling authorship: they want the paternalist to know that they have determined the outcome themselves.

Our results suggest that resistance might be avoided in both cases by being less patronizing and instead of solely relying on the benefits of a policy for people, including these people in its implementation.

References

Andreoni, James and B. Douglas Bernheim, "Social Image and the 50-50 Norm: A Theoretical and Experimental Analysis of Audience Effects," *Econometrica*, 09 2009, *77* (5), 1607–1636.

Ariely, Dan, Emir Kamenica, and Drazen Prelec, "Man's search for meaning: The case of Legos," *Journal of Economic Behavior & Organization*, 2008, *67* (3-4), 671 – 677.

Avey, James B, Bruce J Avolio, Craig D Crossley, and Fred Luthans, "Psychological ownership: Theoretical extensions, measurement and relation to work outcomes," *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 2009, *30* (2), 173–191.

Bartling, Björn, Ernst Fehr, and Holger Herz, "The intrinsic value of decision rights," *Econometrica*, 2014, *82* (6), 2005–2039.

Bénabou, Roland and Jean Tirole, "Intrinsic and Extrinsic Motivation," *Review of Economic Studies*, 2003, *70*, 489–520.

Bobadilla-Suarez, Sebastian, Cass R Sunstein, and Tali Sharot, "The intrinsic value of choice: The propensity to under-delegate in the face of potential gains and losses," *Journal of risk and uncertainty*, 2017, *54* (3), 187–202.

Bodner, Ronit and Drazen Prelec, "Self-signaling and diagnostic utility in everyday decision making," *The psychology of economic decisions*, 2003, *1*, 105–26.

Charness, Gary and Matthew Rabin, "Understanding social preferences with simple tests," *The Quarterly Journal of Economics*, 2002, *117* (3), 817–869.

Deci, Edward L., "Effects of Externally Mediated Rewards on Intrinsic Motivation.," *Journal of Personality and Social Psychology*, April 1971, *18* (1), 105 – 115.

Deci, Edward L and Richard M Ryan, "The general causality orientations scale: Self-determination in personality," *Journal of research in personality*, 1985, *19* (2), 109–134.

Dietvorst, Berkeley J, Joseph P Simmons, and Cade Massey, "Overcoming algorithm aversion: People will use imperfect algorithms if they can (even slightly) modify them," *Management Science*, 2016, *64* (3), 1155–1170.

Dominguez-Martinez, Silvia, Randolph Sloof, and Ferdinand A von Siemens, "Monitored by your friends, not your foes: Strategic ignorance and the delegation of real authority," *Games and Economic Behavior*, 2014, *85*, 289–305.

Dufwenberg, Martin and Georg Kirchsteiger, "A theory of sequential reciprocity," *Games and Economic Behavior*, May 2004, *47* (2), 268–298.

Falk, Armin and Urs Fischbacher, "A theory of reciprocity," *Games and Economic Behavior*, February 2006, *54* (2), 293–315.

Fehr, Ernst and Klaus M. Schmidt, "A Theory Of Fairness, Competition, And Cooperation," *The Quarterly Journal of Economics*, August 1999, *114* (3), 817–868.

_ , **Holger Herz, and Tom Wilkening**, "The lure of authority: Motivation and incentive effects of power," *American Economic Review*, 2013, *103* (4), 1325–59.

Fischbacher, Urs, "Zurich Toolbox for Research in Economic Experiments," *Experimental Economics*, 2007, *10* (2), 171–178.

Frankl, Viktor E, *Ein Psycholog erlebt das Konzentrationslager*, Wien: Verlag fi¿$\frac{1}{2}$r Jugend und Volk, 1946.

_ , *Man's search for meaning*, first published in 1946 as 'ein psycholog erlebt das konzentrationslager' ed., Simon and Schuster, 1985.

Greiner, Ben, "Subject pool recruitment procedures: Organizing experiments with ORSEE," *Journal of the Economic Science Association*, 2015, *1* (1), 114–125.

Lachapelle, Paul, "A sense of ownership in community development: Understanding the potential for participation in community planning efforts," *Community development*, 2008, *39* (2), 52–59.

Maslow, Abraham H, "A theory of human motivation.," *Psychological review*, 1943, *50* (4), 370.

Neri, Claudia and Hendrik Rommeswinkel, "Freedom, Power and Interference: An Experiment on Decision Rights," Technical Report 2014.

Owens, David, Zachary Grossman, and Ryan Fackler, "The control premium: A preference for payoff autonomy," *American Economic Journal: Microeconomics*, 2014, *6* (4), 138–61.

Pierce, Jon L, Tatiana Kostova, and Kurt T Dirks, "Toward a theory of psychological ownership in organizations," *Academy of management review*, 2001, *26* (2), 298–310.

Rabin, Matthew, "Incorporating Fairness into Game Theory and Economics," *American Economic Review*, December 1993, *83* (5), 1281–1302.

Sloof, Randolph and Ferdinand A von Siemens, "Illusion of Control and the Pursuit of Authority," *Experimental Economics*, 2017, *20* (3), 556–573.

_ **and** _ , "Effective leadership and the allocation and exercise of power in organizations," *The Leadership Quarterly*, 2019.

Appendix

Logical puzzle

Please, read through the complete problem before trying to solve it.

The dice line

Five ordinary dice are lined up. (The numbers on two opposing sides of an ordinary die sum up to seven.)

The first die faces the tabletop with the number 1.
The second die has twice as many points on the upper side as the third die.
The third die faces the tabletop with the number 4.
On the upper side of the fourth die a number is shown that is equal to the number on the upper side of the second die reduced by the number shown on the upper side of the third die.
The fifth die faces up with the number that the first die faces the tabletop.

What is the number of the fifth die facing up?

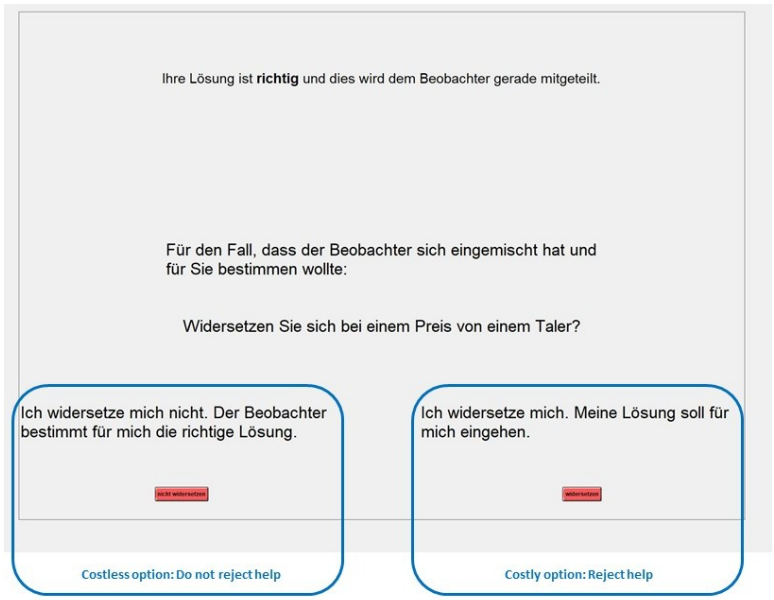


Figure 4: Screen shot of the agent's resistance decision

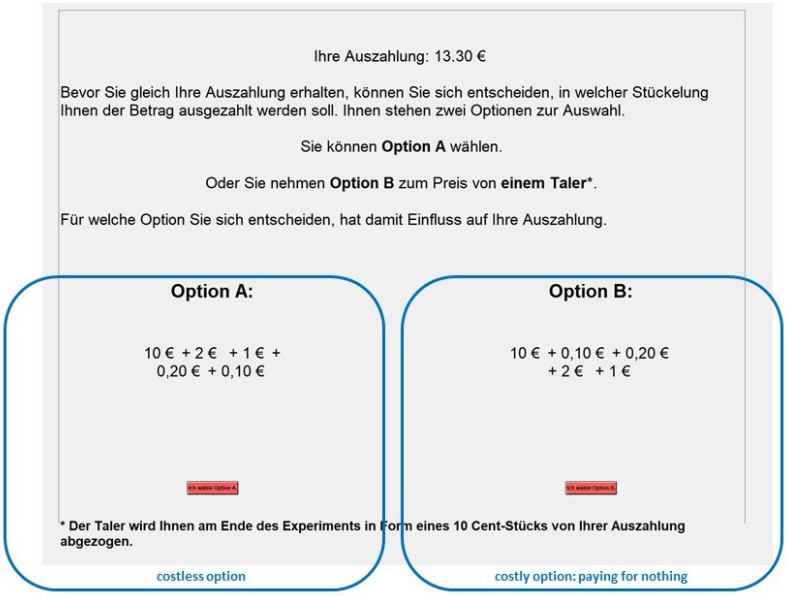
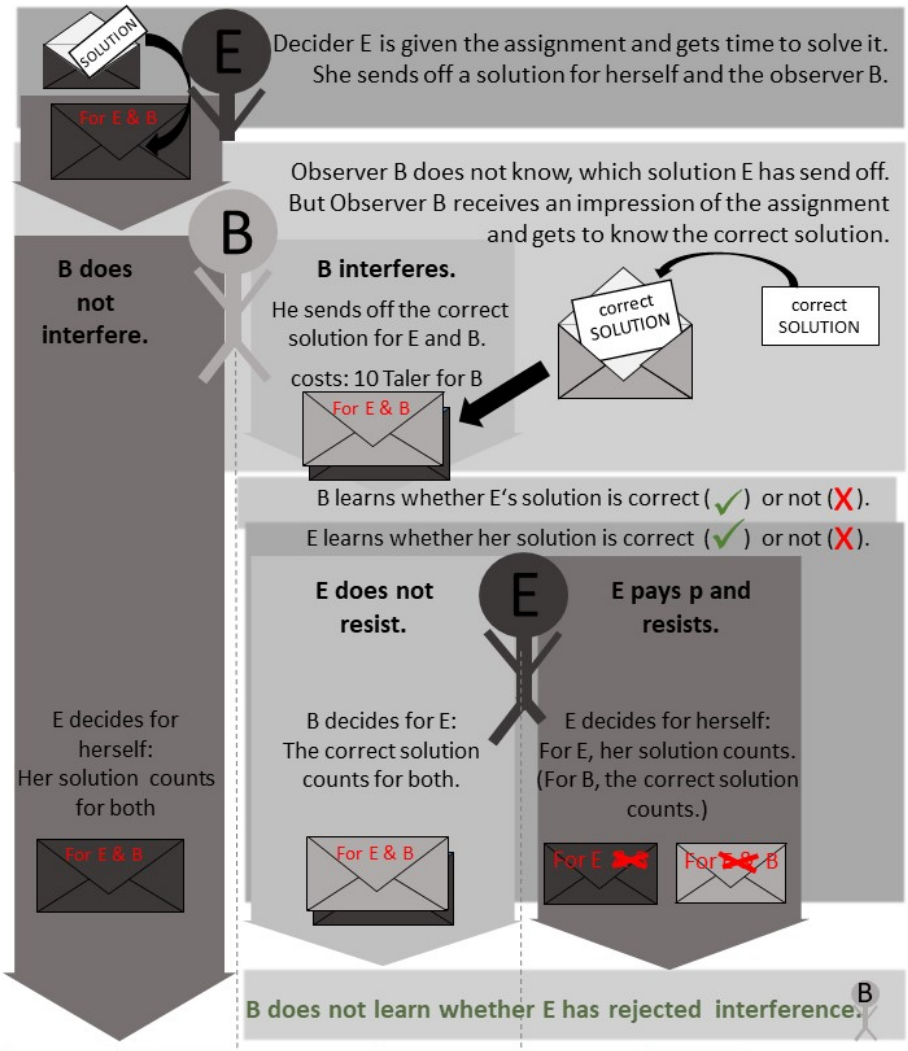
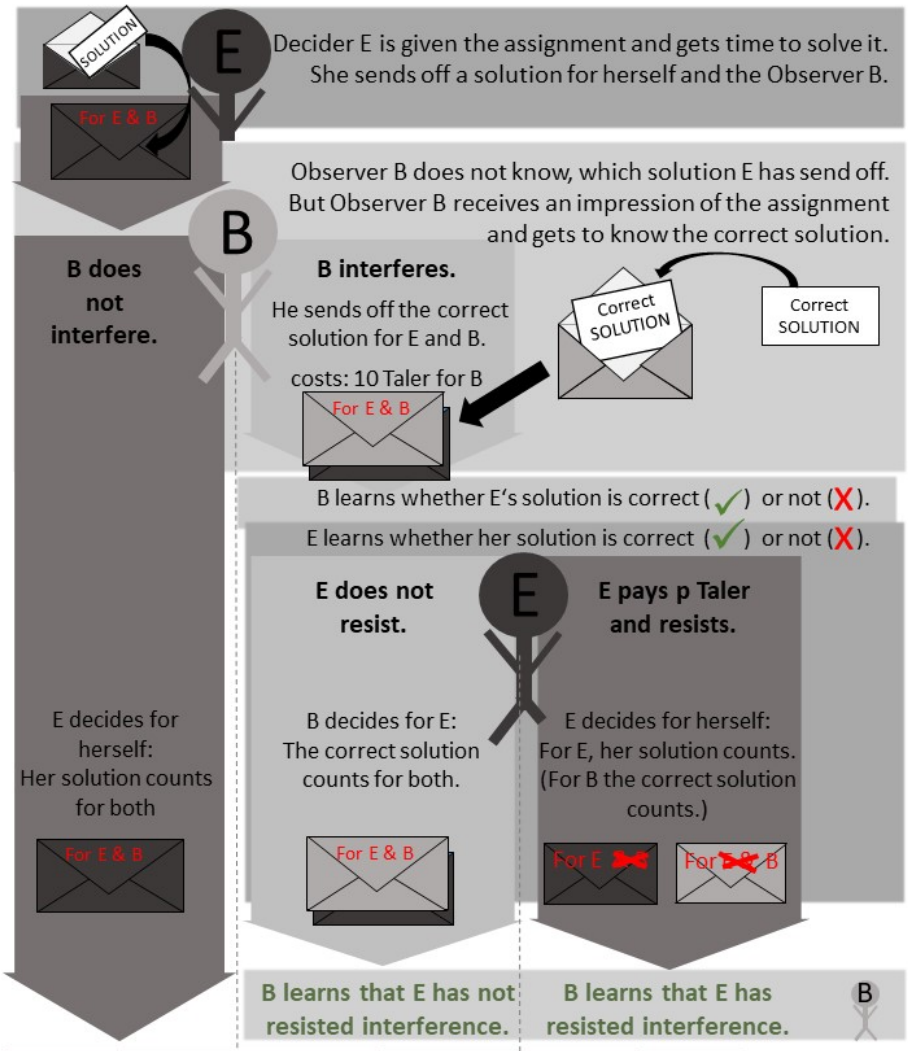


Figure 5: Screen shot of the error benchmark 'paying for nothing'



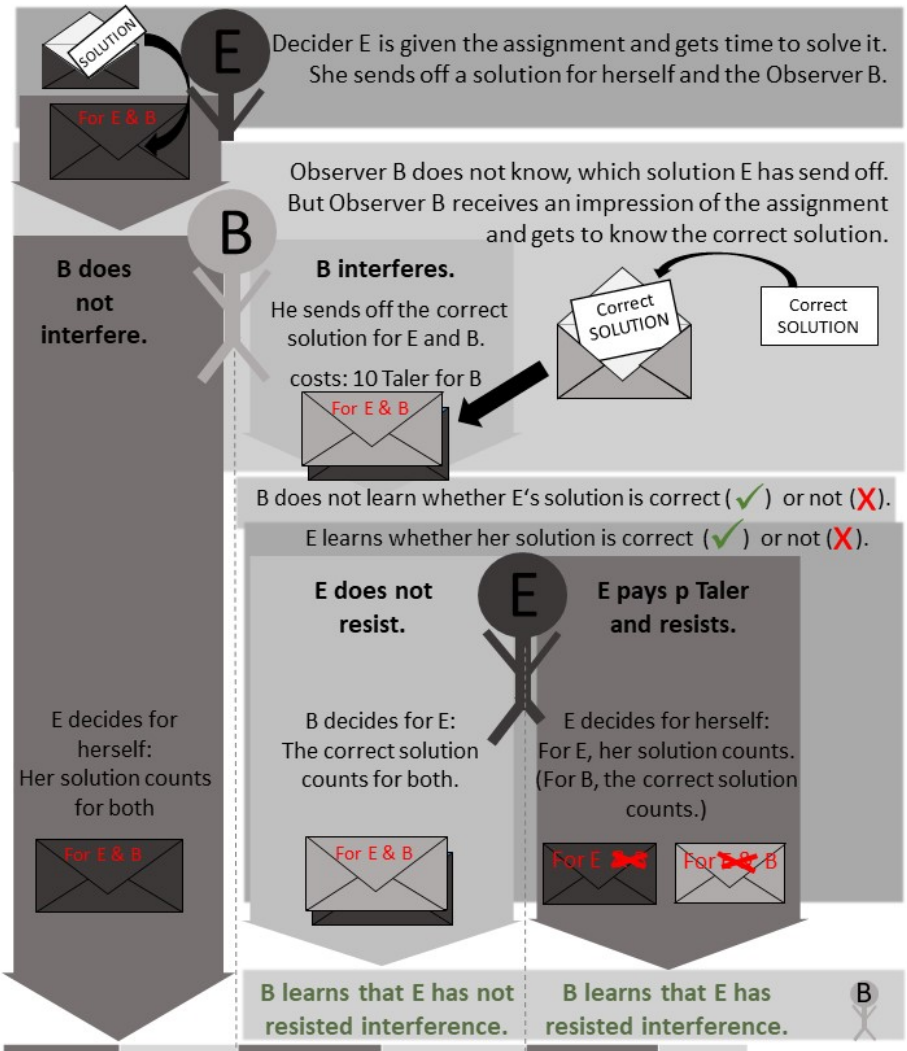
Account E		Account B		Account E	Account B	Account E		Account B	(Values in Talern)
✓	X	✓	X			✓	X		Solution E correct?
40	40	100	100	40	100	40	40	100	Initial balance
					-10			-10	Helping
						-p	-p		Resistance
+80		+50		+80	+50	+80		+50	Solution bonus
120	**40**	**150**	**100**	**120**	**140**	**120-p**	**40-p**	**140**	**Final Balance**

Figure 6: Explanatory chart for subjects in the C treatment
This is the English translation of the version used in 2019. The E stands for 'Entscheider' (=decider) and the B for 'Beobachter' (=observer).



Account E		Account B		Account E	Account B	Account E		Account B	(Values in Talern)
✓	X	✓	X			✓	X		Solution E correct?
40	40	100	100	40	100	40	40	100	Initial balance
					-10			-10	Helping
						-p	-p		Resistance
+80		+50		+80	+50	+80		+50	Solution bonus
120	**40**	**150**	**100**	**120**	**140**	**120-p**	**40-p**	**140**	**Final Balance**

Figure 7: Explanatory chart for subjects in the RC treatment
This is the English translation of the version used in 2019. The E stands for 'Entscheider' (=decider) and the B for 'Beobachter' (=observer).



Account E ✓	Account E X	Account B ✓	Account B X	Account E	Account B	Account E ✓	Account E X	Account B	(Values in Talern)
									Solution E correct?
40	40	100	100	40	100	40	40	100	Initial balance
					-10			-10	Helping
						-p	-p		Resistance
+80		+50		+80	+50	+80		+50	Solution bonus
120	**40**	**150**	**100**	**120**	**140**	**120-p**	**40-p**	**140**	**Final Balance**

Figure 8: Explanatory chart for subjects in the R Treatment
This is the English translation of the version used in 2019. The E stands for 'Entscheider' (=decider) and the B for 'Beobachter' (=observer).

General Explanatory Notes for Participants

You are now participating in an economic experiment. These instructions are the same for all participants, please read them carefully. We will explain to you everthying that you need for the experiment. If you have any questions, please raise your hand. Your questions will then be answered at your place. Apart from this no communication is allowed during the experiment.

You will receive a show-up fee of 2.50€ for participating in this experiment. In addition, you can earn Taler during the experiment, which will be paid into your account. This account will be converted into Euro and paid out. The exchange rate is:

1 Taler = 10 Cent

The converted income will be paid out after the experiment together with the show up fee.

Structure of the Experiment

1. You and a randomly assigned participant are forming a group. You will not learn with whom you are in the same group. In each group, there are two roles: a decision maker (**E**) and an observer (**B**). The decision maker E initially has **40 Taler** on the account and the observer B **100 Taler**.
2. You learn whether you are the decision maker E or observer B.
3. The decision maker E solves a problem and submits a solution for himself and B.
4. Before the submitted solution is received, the observer B will be shown the problem and the correct solution. B does not learn, which solution E has sent.
    a. The observer can **let the decision maker do as he likes**. Then the decision of the decision maker is going to be received for both.
    b. The observer can **interfere with the decision maker** at the price of 10 Taler. Then the solution of the decision maker will be replaced by the correct solution.
5. [R treatment:] Only the decision maker learns, whether the solution which he submitted is correct. The observer does not learn this.
   [RC and C treatment:] Observer and decision maker learn whether the solution submitted by E is correct.
6. The decision maker E does not know whether B has interfered with him but has to come to a decision for the case that the observer interfered with him.
    a. E can **accept the interference**. Then, the observer decides and the correct solution is received for both.
    b. E can **resist the interference** at a price of p Taler.* Then, the decision maker decides for himself: For E his own solution is used and for B the correct solution.

* To do so, the decision maker will for 10 different prices announce whether he is willing to pay this price in order to resist or whether he wants to accept. One of these prices is then selected randomly. The decision of the decision maker for this price is then valid and, if necessary, also the respective price.

[R and RC treatment:] The observer will be informed whether the decision maker has opposed the interference.
[C treatment:] The observer will not be informed whether the decision maker has opposed the interference.

Figure 9: Instructions for all treatments (2019), first page (translated from German): differences between treatments in squared brackets

Payoff for decision maker E

The decision maker has a starting balance of **40 Taler**. In addition, the decision maker receives **80 Taler** if the received solution is correct.

The correct solution may be received in three different cases…
…if B has not interfered with him and E has submitted the corrected solution,
…if B has interfered with him and E has not opposed this interference or
…if B has interfered with him, E opposed this inteference and the solution send by E is correct.

In the case that B has interfered with E and E has opposed this interference, **p Taler** will be deducted from E's account.

Payoff for the observer B

The observer has a starting balance of **100 Taler**. In addition, the observer receives **50 Taler** if for him the correct solution has been received. The correct solution is received for him…
…if B has not interfered and E has submitted the correct solution or
…if B has interfered with E.

If B has interfered with E, **10 Taler** will be deduced from his account.

All decisions and the payoff consequences are also depicted in the distributed chart.

What happens after the experiment

i. You answer some demographic questions as well as questions related to the experiment.
ii. You wait at your place until your seat number is called.
iii. You are called and receive your payoff.

Please note:

- During the whole experiment and communication with other participants is prohibited.
- All phones have to be switched off during the entire experiment.
- If you have any questions, please remain seated and raise your arm. Please ask questions sucht that no other participant can hear your question.
- All decisions are anonymous, i.e., no other participant will learn who made which decision.
- Also the payoff will be paid out anonymously, i.e., no participant learns the payoff of another participant.
- Please remain seated at the end oft he experiment. You will be called for payoff using your seat number.

Good luck and thanks for participating in this experiment!

Figure 10: Instructions for all treatments (2019), second page (translated from German)

Table 6: Average margins for resistance decision based on Probit

	Margin	**Standard Error**	**p-Value**
all treatments (pooled)	.2178	.02368	0.000
C treatment	.1434	.02442	0.000
RC treatment	.2672	.0465	0.000
$R^2 = .0243$	Number of observations: 225		

Notes: A probit regression with controls for gender and study area was run on all subjects in the role of agent who correctly solved the puzzle to predict average marginal effects. Robust standard errors (clustered at session level) calculated with delta method are in the second column.