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Eliciting Paternalistic Preferences: An Incentivised Experiment

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**Eliciting Paternalistic Preferences: An Incentivised
Experiment**

by

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2024

Eliciting Paternalistic Preferences: An Incentivised Experiment[†]

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Abstract

Individual paternalistic preferences are central to the question to what extent the state may intervene in the freedom of choice of its citizens. Albeit its practical and theoretical importance, there is yet no incentivised tool to elicit those preferences. In this paper, we present a simple and abstract experiment to elicit paternalistic preferences and also investigate its relationship with individual psychological constructs that are argued to correlate with paternalistic preferences. In line with previous empirical results, our experimental data suggest that paternalistic preferences are indeed heterogeneously distributed in our sample. Moreover, we identify outcome related and autonomy related motives as important factors of paternalistic preferences. More precisely, (especially young) individuals with a strong desire for autonomy are more likely to opt for an informed choice and individuals with a strong focus on the outcome are more likely to opt for an uninformed choice than giving up their autonomy.

Keywords: paternalistic preferences, revealed preferences approach, psychology of decision making, autonomous decision making, paternalism, libertarianism

JEL codes: C91, D91, H10

Declarations of interest: none

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1 Introduction

A fundamental debate in both politics and economics concerns with the extent a state may intervene in the decisions of its citizens (e.g. [Mill, 1859/2001](#); [Feinberg, 1971](#); [Rawls, 1971](#); [Nozick, 1974](#); [Hayek, 1978](#); [White, 2000](#); [Thaler and Sunstein, 2003](#); [Smiley, 1989](#); [Dworkin, 2020](#); [Konrad, 2023](#)). Libertarians such as Locke, Bentham or Mill argue that individuals have the best information about their own preferences and therefore, most decisions should be made by the individual rather than a state (cf. [Zwolinski \(n.d.\)](#), for an overview on libertarianism). Supporters of a stronger state, on the other hand, argue that individuals frequently make wrong decisions and state interventions are needed to impose rational decision making (e.g. [Feinberg, 1971](#); [O'Donoghue and Rabin, 2003](#); [Dworkin, 2020](#)). More recently, [Thaler and Sunstein \(2008\)](#) proposed an idea based on the use of those decision making flaws to *nudge* individuals to better decisions without restricting the individual's autonomy by manipulating solely the choice architecture of a decision, e.g. by setting a default or by making options more salient.

Central to the question of whether and to what extent the state may intervene in the freedom of choice of its citizens is what the citizens actually want. Most recently, the corona pandemic demonstrated impressively that this is by no means unambiguous. During the pandemic, the comprehensive restriction of the individual's usual freedom sparked an extensive and heated debate about their effectiveness and legitimacy suggesting that paternalistic preferences vary considerable within a population. An empirical study by [Naumann et al. \(2020\)](#) find that there was no general acceptance of interventions to combat the pandemic, as the acceptance was dependent on the specific measure and moreover had changed for certain measures over time. For example, 30% of the respondents supported tracking of mobile phones without consent for contact tracing and 90% supported prohibition of large gatherings. While the acceptance of both measures were stable over time and arguably conclusive, support for the closure of public facilities, e.g. schools, fell significantly from 90% to inconclusive 50% ([Naumann et al., 2020](#)) in just 2 months. Moreover, a study by [Graeber et al. \(2021\)](#) showed that individual acceptance with interventions do not have to coincide with the individuals own desired behavior. They found, for example, that before a vaccine was available, only just half of the German population would have supported mandatory vaccination whereas a considerable larger fraction would get vaccinated on their own behalves ([Graeber et al., 2021](#)). There may be various reasons why people are willing to surrender autonomy, e.g. security, convenience, avoidance of decisions, surrender of responsibility, and various reasons, why people want to retain autonomy, e.g. mistrust, personal responsibility or the will to be a responsible citizen. More general, however, it has been argued that there are two distinct motives that drive autonomous decision making: outcome related preferences and preferences for a self-determined decision (cf. [Nussbaum, 2000](#); see [Bartling et al. \(2014\)](#), [Lusk et al.](#)

(2014), Owens et al. (2014), Afzal et al. (2022) for experimental evidence).

Irrespective of the corona pandemic, eliciting paternalistic preferences is highly relevant for both justification and practicability of an intervention not only in politics but also in several other sciences such as economics, philosophy, law or psychology. Existing measures to elicit paternalistic preferences typically rely on questionnaires in which participants state their acceptance of certain measures and/or their personal view on the state’s scope of responsibilities (e.g. Pedersen et al., 2014; Konrad and Simon, 2023). Hence, respondents face no real consequences of their answers and the emotional arousal of lost autonomy might be diminished.

While revealed preferences might come closer to real preferences than stated preferences (Harrison, 2007; for further information on incentive compatibility see Sudgen (2005), Harrison (2007), Hensher (2010)), and also may trigger autonomy related emotions, there is yet, to the best of our knowledge, no experimental design which allows to elicit general paternalistic preferences.¹

To close this gap, we present an incentivised experiment to elicit general paternalistic preferences in an abstract way, i.e independent of paternalistic institution and specific measure². Inspired by the theoretical model on paternalistic preferences proposed by Konrad (2023), subjects in our experiment are induced with both idiosyncratic and systematic benefits and have to decide whether the decision over two abstract measures is made by themselves (libertarian regime) or for them (paternalistic regime). More precisely, only one measure is profitable (systematic payoff) and subjects are biased towards one of the two measures to a varying degree (idiosyncratic payoff). The regimes differ in respect to the likelihood of the systematic payoff. In the paternalistic regime, the systematic payoff is realised with a probability of 80%. In the libertarian regime, subjects have a 50% chance to gain the systematic payoff (uninformed libertarianism) but may buy perfect information at a cost of 20% of the systematic payoff (informed libertarianism). Hence, we capture payoff related motives (paternalism vs. uninformed libertarianism) as well as autonomy related motives (paternalism vs. informed libertarianism) that may drive paternalistic preferences (paternalism vs. libertarianism). For our validation study, we also varied the framing of the paternalistic decision maker. In one treatment, the paternalistic decision maker is specified as state (“The state decides for you”) while it

¹Existing studies using incentivised experiments to assess attitudes towards paternalism focus on interpersonal interactions such as the intervention in the decision making of other people (e.g. Jacobsson et al., 2007; Gangadharan et al., 2018; Pikulina and Tergiman, 2020; Ambuehl et al., 2021; Bartling et al., 2023) or the willingness to forgo agency to others (e.g. Fehr et al., 2013; Bartling et al., 2014; Lusk et al., 2014; Owens et al., 2014; Afzal et al., 2022; Dykstra et al., 2022).

²Brutger et al. (2023) present evidence that contextual details, such as environmental pollution, and information of actor identity, e.g. naming a particular politician, cause biases in experimental results. Tannenbaum et al. (2017) finds significant correlations between attitudes towards certain measures or policies and attitudes towards positions of parties or politicians. Therefore, avoidance of associations with recently discussed measures, e.g. measures to contain the corona virus, is crucial.

remains unspecified in another treatment (“Decision is made for you”). Hence, we also investigate whether the influence of both motives depends on the paternalistic institution. Note that the dependent variable in our study is the individual’s regime choice, i.e. a categorical variable, which differs from standard experimental research, e.g. contribution in trust games/public goods games or the elicitation of risk preferences. In our view, using a categorical variable is a valid approach for the purpose of our study as a state intervention, regardless of its severity, always interferes in the individual’s freedom of choice and consequently freedom of choice can only be maintained in the absence of state intervention, i.e. is binary. Therefore, we derive paternalistic preferences from the choice for or against the paternalistic regime.

Regarding results, first of all, we find that paternalistic preferences are indeed heterogeneous in both treatments (overall: paternalism: 27.27% ; uninformed libertarianism: 50.00%; informed libertarianism: 22.73%). Regarding the framing, the fraction of subjects choosing the paternalistic regime is roughly even between treatments (two-sided test of proportions, 26.32%; vs. 28.21%;, $p = 0.79$). A change from an unspecified framing of the institution to state framing, however, increases informed autonomous decision making (two-sided test of proportions, 30.77%; vs. 14.47%;, $p < 0.05$) and decreases uninformed autonomous decision making (two-sided test of proportions, 59.21%; vs. 41.03%;, $p < 0.05$).

Regarding motives for paternalistic preferences, we find both evidence for an outcome and an autonomy effect in our experimental data. More precisely, regression analysis show that subjects with lower idiosyncratic benefits choose paternalism more often than uninformed libertarianism. This monetary effect, however, occurs only in *State* which we argue might be due to familiarity reasons. In both treatments, more risk averse subjects as well as subjects with a propensity for paternalism choose (effect weakened for older subjects) uninformed libertarianism over paternalism more often. Taken together, while individual characteristics, i.e. risk preferences and paternalism index, affect the overall decision of paternalism vs. uninformed libertarianism, the monetary effect occurs only in the *State* framing. The autonomy effect, by contrast, is independent of the framing of the institution and highly correlates with age. In both treatments, subjects with low receptivity of authority (psychological reactance) or a stronger belief in their own contribution to personal success (locus of control) are more likely to choose informed libertarianism than paternalism. Both effects are weakened with increasing age.

Finally, we want to emphasise that our analysis supports the view that both motives are distinct. We find neither the outcome effect, i.e. idiosyncratic benefit (monetary effect) or risk-preferences, being influential in paternalism vs. informed libertarianism nor psychological constructs, i.e. reactance and locus of control, being influential in paternalism vs. uninformed libertarianism.

The rest of the paper is structured as follows: In Section 2, we present a theoretical framework including the experimental implementation, a brief introduction of the psychological constructs, and an outline of the details of the experiment. Experimental results are presented in Section 3. A brief discussion in Section 4 is followed by concluding remarks in Section 5.

2 Theoretical Framework and Implementation

2.1 Theoretical Framework

Our experimental design is orientated on the theoretical analysis by Konrad (2023) on a society's choice between a libertarian or paternalistic regime as decided by a majority vote. The respective regime determines the choice between two projects for which each individual has preferences consisting of a systematic component, i.e. for all subjects identical benefits from the projects known initially only to the state, and an idiosyncratic component, i.e. individual benefit from the projects known to the individual.

The model consists of three stages: On the first stage, each individual can invest in education to become a capable decision-maker. On the second stage, individuals decide for either the libertarian or the paternalistic regime. On the final stage, the choice between the projects is made in the voted regime.

If a paternalistic regime is implemented, the choice between the two projects is solely based on the systematic benefit. If a libertarian system is implemented, individuals can pay a price that is dependent on the prior education decision to learn the systematic benefit. Hence, subjects decide based on their idiosyncratic benefit (without information) or both systematic and idiosyncratic benefit (with information).

The decision problem is solved via backwards induction and the optimal strategy depends on the idiosyncratic preferences that are classified as weak, medium and eccentric (strong). Individuals with weak preferences opt for a paternalistic regime, subjects with medium preferences educate themselves and opt for an informed decision in the libertarian regime and subjects with eccentric preferences opt for an uninformed decision in the libertarian regime. As a majority vote determines the regime, the outcome depends on the distribution of the idiosyncratic preferences and the education costs.

For the purpose of the experiment we use the basic structure of this model, albeit neglecting the first stage to avoid potential confounds, to investigate the choice between a libertarian and a paternalistic regime on an individual level. That is, each individual is induced with both systematic and idiosyncratic benefits and decides for a paternalistic, uninformed libertarian or informed libertarian regime in which the choice over two measures is made, cf. chapter 2.3. In the present task, only one measure is profitable (systematic payoff, 10 token) and subjects are biased towards one of the two measures

to a varying degree (idiosyncratic payoff, ranging from 1 to 11 token). For our purpose, we implement the three regimes as lotteries with different probabilities for the realisation of the systematic payoff. The paternalistic regime chooses the profitable project with 80% probability³, in the uninformed regime, subjects have a 50% chance to choose the profitable project and in the informed regime, the additional information allows subjects to choose the profitable project with certainty. Note that the expected payoff for paternalism and informed libertarianism is equal for idiosyncratic benefits between 1-10. Compared to uninformed libertarianism, this expected payoff exceeds the expected payoff for idiosyncratic benefits below 6, is equal for an idiosyncratic benefit of 6, and is lower for idiosyncratic benefits below 11 conditional on that the measure being chosen is the one that yields the idiosyncratic benefit. This allows us to further distinguish between outcome related preferences and preferences for a self-determined decision.⁴

2.2 Related Constructs

Previous research (e.g. [Debnam, 2017](#); [Debnam and Just, 2017](#); [Arad and Rubinstein, 2018](#); [Konrad and Simon, 2023](#); [Lassen and Mahler, 2023](#); [Sainz Villalba, 2023](#); [Schütze et al., 2023](#)) suggests that paternalistic preferences are related to psychological characteristics such as psychological reactance and locus of control. In the sequel, we briefly introduce both concepts as well as the Governmental Paternalism Index (cf. [Konrad and Simon, 2023](#)) which is closely related to our design.

Psychological reactance: Psychological reactance is described as “the motivational state that is hypothesized to occur when a freedom is eliminated or threatened with elimination” ([Brehm and Brehm, 2013](#), p. 37). To regain this freedom, individuals may tend to engage in the very behavior that has been restricted (e.g. [Mazis et al., 1973](#); [Pennebaker and Sanders, 1976](#); [Reich and Robertson, 1979](#)). This reaction has been found with paternalistic interventions, for example increased consumption of unhealthy food after an advertisement warning against it ([Debnam and Just, 2017](#)) or increased consumption of sugar-sweetened beverages after the introduction of a tax on it ([Debnam, 2017](#)). Thus, reactance is expected to correlate negatively with the receptivity to paternalistic interventions.

Locus of control: The locus of control measures the individual conviction that success can be influenced by own actions, i.e. internal locus of control, or that success is determined by others, chance and fate, i.e. external locus of control ([Rotter, 1966](#)). Both dimensions have been associated with paternalistic preferences. [Sainz Villalba \(2023\)](#) find that women with high internal locus of control support paternalistic interventions

³From a practical point of view, this lottery reflects the potential of a decision maker, such as the state, to intervene with the wrong choice.

⁴In the special case of an idiosyncratic benefit of 11, the paternalistic regime generates the lowest expected value as the idiosyncratic benefit exceeds the systematic benefit.

that affect others and reject them if they presumably concern themselves. [Lassen and Mahler \(2023\)](#) find that people who believe that success is the result of luck rather than hard work, i.e. a single question of the external locus of control, are more likely to be in favor of paternalistic interventions. Thus, individuals with high internal locus of control are expected to make decisions autonomously rather than handing them over.

Risk preferences: According to expected utility theory, individuals, when choosing between risky options, opt for the option with the largest expected utility. Expected utility of an option is determined by using an individual’s utility function to assign a utility value to each individual possible outcome and weighting this with the probabilities of occurrence ([O’Donoghue and Somerville, 2018](#)). In our experiment, the outcomes are dependent on the idiosyncratic benefits (see [Figure 1](#)). We use the utility function $U(x) = x^{1-r}$ with constant relative risk aversion ($r = 0$ represents risk neutrality, $r > 0$ risk aversion and $r < 0$ indicates risk seeking ([Holt and Laury, 2002](#))) to predict which option is chosen for different risk preferences.

Starting with individuals with low idiosyncratic benefits (< 6), risk neutral decision-makers choose paternalism or informed libertarianism. Risk averse individuals choose informed libertarianism, whereby the second best option is paternalism for weak risk aversion and uninformed libertarianism for strong risk aversion. Risk affine individuals choose paternalism, whereby the second best option is informed libertarianism for weak risk affinity and uninformed libertarianism for strong risk affinity. Continuing with individuals with high idiosyncratic benefits (≥ 6), uninformed libertarianism is the preferred option regardless of risk preferences, whereby the second best option is informed libertarianism for risk averse individuals and paternalism for risk affine individuals. Furthermore, individuals’ preference for uninformed libertarianism over the other options increases with increasing risk affinity. A special case occurs for risk neutral decision-makers with an idiosyncratic benefit of 6, as the expected utility is identical for all three options.

Governmental Paternalism Index: [Konrad and Simon \(2023\)](#) developed the Governmental Paternalism Index to elicit the willingness to give up individual autonomy in order to be protected by the state from self-harming behavior. The index is based on 11 statements including domain specific interventions (e.g. “The state should ban unhealthy food.”) as well as general questions about the role of the state (e.g. “The most important task of the state is to protect me comprehensively from dangers of any kind.” or “I would like to see the state relieve us citizens of more tasks and responsibilities.”). The authors find only weak correlations between the index and both locus of control and psychological reactance. [Konrad and Simon \(2023\)](#) argue that this weak connection is due to paternalistic preference being a “social trait” as it focuses on the relationship between state and individual rather than a “psychological trait”. In line with this results, we argue, that

the index focuses primarily on the outcome of an intervention (avoidance of harm) and less on the autonomy dimension.

2.3 Experimental Design

In the following, we describe our experiment on paternalistic preferences. Decisions were incentivised in that every 10th response was paid as stated⁵ with tokens being converted to Euro at a rate of 1 token corresponding to 1 Euro. This was part of the instructions and, hence, known to subjects. Subjects are informed that a project affecting them and their fellow human beings is being planned for which one of two measures (A or B) must be taken. One of the two measures (randomly determined) is profitable and results in a positive outcome of the project, the other measure gains nothing. No further information about the project or the measures was given. Payoffs consist of two parts. Subjects receive a systematic payoff of 10 token if the profitable measure is chosen. Subjects receive an additional idiosyncratic payoff ranging from 1 to 11 token (uniformly distributed across all subjects) if measure A is chosen regardless of its profitability. Figure 1 shows the decision structure of the experiment as well as respective payoffs. Subjects decide whether the decision will be made by themselves (libertarianism) or for them (paternalism). In libertarianism, subjects can learn the profitable measure prior to the decision at a cost of 2 token. With (Option: Informed Libertarianism) or without (Option: Uninformed Libertarianism) the information, subjects have to decide for a measure. In paternalism (Option: Paternalism), the profitable measure will be chosen with a probability of 80 % and there is no further decision to make. Treatments differ in whether the paternalism option is framed as unspecified (“Decision is made for you”) or as state intervention (“The state decides for you”).

2.4 Procedure

The experiment was conducted before a lecture at the University of Rostock in November 2023, with students being from Social Sciences and Sociology. Students were informed about the possibility to participate in a research study and otherwise offered to leave. The students who stayed were separated and asked to be quiet during the experiment; there were four researchers present during the experimental sessions to monitor the subjects.

Subjects received 3 pages of instructions and a closed envelope not to be opened until explicit calling. The first page consists of general information about the experiment including incentives, data security, personal information (age, gender) to answer, and were read out loud. A 10-sided dice was tossed in a dice cup to determine the subjects to

⁵Charness et al. (2016), reviewing a significant amount of papers, find that paying for only a subset of periods or individuals is at least as effective as the pay all approach.

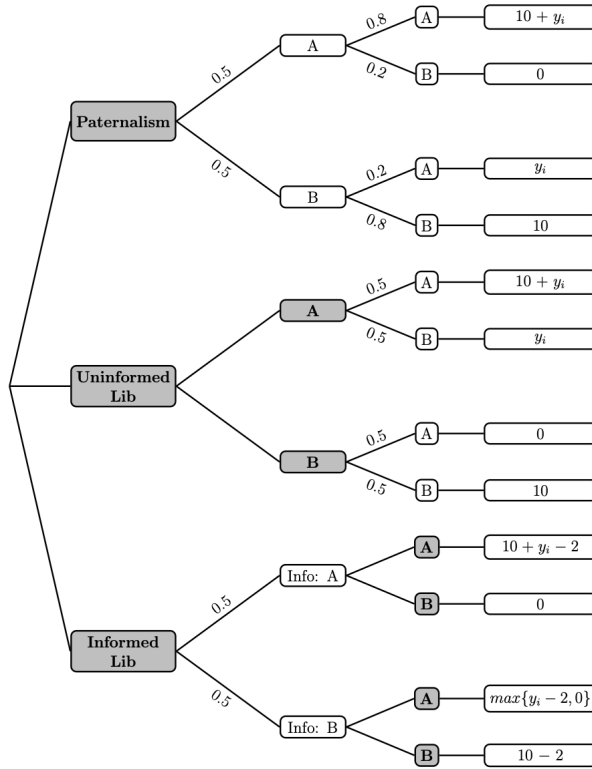


Figure 1: Decision structure: Grey nodes represent realised decisions of subjects based on previous available information and choices within the arc, white nodes represent information in the decision process or realisations of random elements. Final nodes are payoffs of the respective arc, where y_i is the idiosyncratic benefit of the subjects.

be paid. Instructions had a running ID of which the last digit matches the diced number in the event of payment.

The second page explains the decision task in two parts. The first part informs subjects about the project and the two possible measures and was read aloud. One experimenter tossed a coin with A and B on the sides to determine the profitable measure. The toss was made public in another dice cup so that the subjects could not see the result. Afterwards, subjects were asked to read the second part, which introduces the options and the respective rewards, privately. Questions were answered privately by the experimenters.

When no further questions arose, subjects were asked to decide on the third page. After a short period, the additional information on the profitable measure was given out privately on a small piece of paper to the relevant subjects. Sheets of other subjects were collected previously to ensure there is no free information. Once all sheets were collected, subjects were asked to fill out the questionnaire inside the envelope. Once all material was handed back, the profitable measure as well as the winning digits of the survey ID were announced. Payments were made in private after the lecture. Another dice was used for each subject to determine the outcome of the paternalistic option.

3 Results

In total, 157 subjects⁶ participated in the experiment (female: 52.60%, mean age: 20.35, std. dev. age: 2.29). Table 1 summarizes experimental conditions and descriptive results. Our decision variable has three categories, i.e. paternalism, uninformed libertarianism and informed libertarianism.

Overall, 27.27% of the subjects choose paternalism, 50.00% uninformed libertarianism and 22.73% informed libertarianism. Comparing between treatments, we find no difference in proportions of the paternalistic regime (two-sided test of proportions, 26.32 vs. 28.21, $p = 0.79$), but significantly more uninformed libertarianism in *Unspecified* than in *State* (two-sided test of proportions, 59.21 vs. 41.03, $p < 0.05$). Consequently, there is significantly more informed libertarianism in *State* than in *Unspecified* (two-sided test of proportions, 30.77 vs. 14.47, $p < 0.05$). Taken together, preferences are heterogeneous with a shift to informed libertarianism in *State* and to uninformed libertarianism in *Unspecified*.

In the sequel, we investigate experimental data with respect to an outcome effect in 3.1 and with respect to an autonomy effect in 3.2. To do so, we conduct several regression analysis including idiosyncratic benefits and personal characteristics⁷ with the paternalistic regime as reference category. Thus, we focus on the choice for or against the paternalistic regime with informed libertarianism vs. paternalism as proxy for autonomy preferences and uninformed libertarianism vs. paternalism as proxy for outcome related preferences.

3.1 Monetary Effect: Idiosyncratic Benefit

Starting with the outcome effect, we investigate the impact of the idiosyncratic benefits first, i.e. monetary effect. According to theoretical predictions expected value maximisers with low idiosyncratic benefits opt for paternalism or informed libertarianism and expected value maximisers with high idiosyncratic benefits for uninformed libertarianism (cf. chapter 2.1). To test those predictions, we split idiosyncratic benefits in a first step in high ($y_i \geq 6$) and low ($y_i < 6$). The resulting frequencies of regime choices by treatment are displayed in Table 1. While frequencies of regime choices of subjects with high and low idiosyncratic benefits do not differ in *Unspecified*, subjects in *State* with

⁶We excluded 3 subjects due to presumed comprehension problem that opted for informed libertarianism and decided for measure B even though measure A was the profitable one.

⁷Reactance is measured with the questionnaire by Merz (1983). Locus of control is measured with the questionnaire by Nolte (1996) (cited in: Weinhardt and Schupp, 2014). Paternalistic preferences are elicited with the Governmental Paternalism Index developed by Konrad and Simon (2023). Furthermore, we elicit the Big 5 personality traits using the questionnaire from Rammstedt and John (2007). We also include the socio-demographic measures age, gender and political orientation. Lastly, we asked for life satisfaction (Schimmack et al., 2008) and risk preferences (Dohmen et al., 2011). For further information including factor analysis of locus of control and the Governmental Paternalism Index, see Appendix.

low idiosyncratic benefits choose paternalism more often (40.54% vs. 17.07%, two sided test of proportions $p < 0.05$) and also uninformed libertarianism (24.32 % vs. 56.10 %, two sided test of proportions $p < 0.01$) less often than subjects with high idiosyncratic benefits. Note that we find no significant difference in informed libertarianism (35.14% vs. 26.83%, two sided test of proportions $p = 0.43$).⁸ The relationship between regime choice and idiosyncratic benefits is visualised in Figure 2 for *Unspecified* and in Figure 3 for *State*, in which the cumulative distributions of the idiosyncratic benefits within the regime choices are plotted against a uniform distribution that indicates equal regime choices over all idiosyncratic benefits.

	N	Paternalism	Uninformed Lib.	Informed Lib.
Unspecified	76	26.32%	59.21%	14.47%
Low	33	24.24%	60.61%	15.15%
High	43	27.91%	58.14%	13.95%
Diff L/H	-10	3.66%	2.47%	1.12%
State	78	28.21%	41.03%	30.77%
Low	37	40.54%	24.32%	35.14%
High	41	17.07%	56.10%	26.83%
Diff L/H	-4	23.46%**	-31.77%***	8.31%
Overall	154	27.27%	50.00%	22.73%

Table 1: Percentage of subjects choosing the respective regime for low idiosyncratic benefits (< 6) and high idiosyncratic benefits (≥ 6) within each treatment; difference indicated by two-sided test of proportions. *** $p < 0.01$, ** $p < 0.05$. * $p < 0.1$.

These observations are confirmed by multinomial probit regression analysis with the idiosyncratic benefit included as metric variable and the paternalistic regime as reference category in Table 2. Consistent with the theoretical prediction, we find in Model 1 a significant positive influence of the idiosyncratic benefit. Hence, a higher idiosyncratic benefit increases the likelihood to choose uninformed libertarianism over paternalism. Consistent with Figure 2 and Figure 3, however, this effect occurs only in *State*, as indicated by a significant positive interaction between treatment and idiosyncratic benefit in Model 2. Moreover, the framing has an overall negative effect on the likelihood to choose uninformed libertarianism over paternalism. This observation remains robust when we control for age and gender in Model 3 and several personal characteristics including risk preferences, reactance, locus of control, the paternalism index and personality in Model 4. Note at this point, that we find no significant effect of the treatment or the idiosyncratic benefit in the choice of informed libertarianism vs. paternalism.

⁸These results are robust to exclusion of individuals with an idiosyncratic benefit of 6, where the expected payoff is equal over all regimes, and therefore, there should be no influence on the individual regime choice by the idiosyncratic benefit.

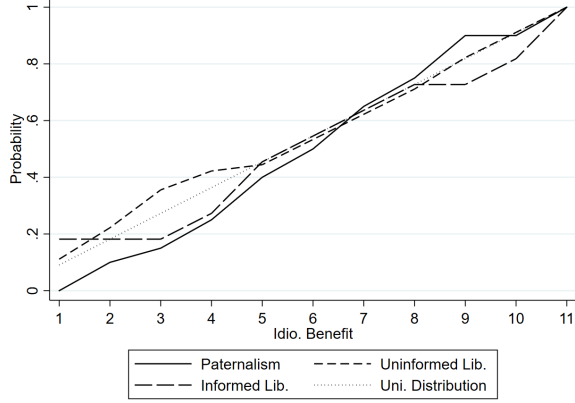


Figure 2: Unspecified treatment

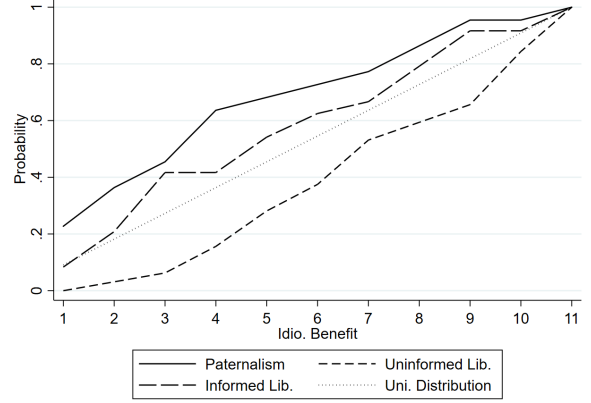


Figure 3: State treatment

Cumulative distribution of subjects choosing the respective regime by idiosyncratic benefit and treatment compared to a uniform distribution.

	(1)		(2)		(3)		(4)	
	Uninformed Lib.	Informed Lib.	Uninformed Lib.	Informed Lib.	Uninformed Lib.	Informed Lib.	Uninformed Lib.	Informed Lib.
T: State(=1)	-0.372 (0.310)	0.511 (0.346)	-2.294*** (0.655)	-0.036 (0.749)	-2.532*** (0.646)	-0.020 (0.760)	-2.895*** (0.796)	-0.086 (0.981)
Idio. Benefit	0.101** (0.048)	0.031 (0.055)	-0.047 (0.064)	-0.013 (0.083)	-0.060 (0.064)	-0.006 (0.083)	-0.049 (0.083)	-0.047 (0.117)
State × Idio. Value			0.320*** (0.100)	0.100 (0.115)	0.362*** (0.099)	0.092 (0.115)	0.438*** (0.122)	0.195 (0.145)
Female (=1)					-0.164 (0.319)	0.069 (0.358)	0.326 (0.440)	-0.054 (0.468)
Age					-0.120 (0.079)	0.050 (0.074)	-0.047 (0.090)	0.170* (0.090)
Risk Preference							0.238*** (0.091)	0.187* (0.104)
Reactance							0.172 (0.317)	0.805** (0.401)
Locus of Control							-0.183 (0.304)	-0.660** (0.326)
Pat. Index							0.069 (0.206)	-0.161 (0.234)
Political Orientation							0.356 (0.240)	0.364 (0.279)
Life Satisfaction							-0.037 (0.087)	0.050 (0.098)
Extraversion							-0.025 (0.219)	0.107 (0.292)
Agreeableness							-0.144 (0.236)	-0.568** (0.260)
Conscientiousness							0.250 (0.243)	0.612** (0.272)
Neuroticism							-0.094 (0.268)	0.125 (0.299)
Openness							0.159 (0.186)	0.382* (0.198)
Constant	0.068 (0.353)	-0.610 (0.393)	0.959** (0.449)	-0.341 (0.580)	3.543** (1.663)	-1.441 (1.642)	-1.240 (3.101)	-11.159*** (3.567)
N.Obs.	154		154		154		130	
Wald - χ^2	12.160		22.483		29.104		61.139	
Prob > χ^2	0.02		0.00		0.00		0.00	

Table 2: Estimates of multinomial probit regression models with robust standard errors of the categorical decision (Paternalism, Uninformed Libertarianism, Informed Libertarianism) with Paternalism as reference category. T: State and Female are dummy-variables. Age, Reactance, Paternalism Index, Risk Preferences, Locus of Control as well as the five personality dimensions are measured as metric variables. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

3.2 Autonomy Effect vs Outcome Effect

Next, we focus on the relationship between the regime choice and the psychological constructs. As described, we take reactance and locus of control as proxies for preferences regarding autonomous decision making and risk preferences as well as the paternalism index as preferences regarding the outcome (cf. chapter 2.2)

To do so, we again conducted several multinomial probit regressions with the paternalistic decision as reference category, in which we account for the aforementioned effects of the idiosyncratic benefit, cf. chapter 3.1. Overall, we find only risk preferences (Model 1) and reactance (uninformed libertarianism vs. paternalism: $b = 0.21$, $SE = 0.2679$, $z = 0.80$, $p = 0.42$, 95% CI: $[-0.31, 0.74]$; informed libertarianism vs. paternalism: $b = 0.70$, $SE = 0.2980$, $z = 2.36$, $p < 0.05$, 95% CI $[0.12, 1.29]$) to have a significant influence on the regime choice. Further analysis revealed, however, that the effect of all constructs but risk preferences highly depend on the subject's age. In the sequel, we therefore report results including this interaction; cf. Table 3. In Model 1-4, we investigate risk preferences, psychological reactance, locus of control, and the paternalism index separately. In Model 5, we control for all found effects.

Risk preferences: More risk affine subjects are more likely to choose uninformed libertarianism over paternalism. No significant effect for informed libertarianism vs. paternalism (Model 1).

Psychological reactance: More reactant subjects are more likely to choose informed libertarianism over paternalism, whereby this effect is weakened for older subjects. No significant effect for uninformed libertarianism vs. paternalism (Model 2).

Locus of Control: Locus of control without controlling for other constructs has no significant effect on either the decision (Model 3).

Paternalism index: Subjects with a higher propensity for paternalism are more likely to choose the paternalistic regime over both libertarian regimes, whereby this effect is weakened for older people (Model 4).

Full model: If we control simultaneously for the mentioned effects in Model 5, the effects of risk preferences and psychological reactance remain robust while the paternalism index is relevant for uninformed libertarianism. Furthermore, subjects with higher scores of locus of control are more likely to choose an informed libertarian regime, but again, less so for older subjects.

All results remain robust when we control for personality, life-satisfaction, political orientation and gender. Note that we find more open and more conscious people are more likely to choose informed libertarianism over paternalism.

	(1)		(2)		(3)		(4)		(5)	
	Uninformed Lib.	Informed Lib.	Uninformed Lib.	Informed Lib.	Uninformed Lib.	Informed Lib.	Uninformed Lib.	Informed Lib.	Uninformed Lib.	Informed Lib.
T: State(=1)	-3.042*** (0.694)	-0.215 (0.773)	-2.499*** (0.677)	-0.117 (0.876)	-2.556*** (0.712)	0.364 (0.855)	-2.579*** (0.705)	-0.223 (0.767)	-3.128*** (0.776)	-0.290 (1.041)
Idio. Benefit	-0.050 (0.066)	-0.009 (0.085)	-0.044 (0.067)	-0.040 (0.103)	-0.043 (0.068)	0.036 (0.096)	-0.048 (0.071)	-0.036 (0.086)	-0.054 (0.077)	-0.039 (0.120)
State × Idio. Value	0.420*** (0.109)	0.117 (0.120)	0.367*** (0.103)	0.102 (0.137)	0.366*** (0.109)	0.057 (0.130)	0.368*** (0.108)	0.133 (0.119)	0.426*** (0.122)	0.157 (0.157)
Age	-0.116 (0.084)	0.047 (0.077)	0.340 (0.482)	1.809*** (0.517)	-0.040 (0.093)	0.149 (0.091)	-0.101 (0.077)	0.063 (0.076)	0.238 (0.573)	2.409*** (0.718)
Risk Preference	0.239*** (0.074)	0.110 (0.074)							0.257*** (0.082)	0.098 (0.092)
Reactance			2.971 (2.927)	11.194*** (3.272)					1.633 (3.372)	14.336*** (4.458)
Reactance × Age			-0.136 (0.145)	-0.508*** (0.157)					-0.072 (0.169)	-0.661*** (0.216)
Locus of Control					2.513 (1.715)	2.850 (2.086)			2.740 (1.734)	5.194** (2.284)
Locus of Control × Age					-0.118 (0.085)	-0.154 (0.099)			-0.137 (0.085)	-0.268** (0.109)
Pat. Index							-3.760** (1.730)	-3.336* (1.805)	-3.510** (1.782)	-2.091 (2.212)
Pat. Index × Age							0.182** (0.082)	0.156* (0.084)	0.176** (0.085)	0.098 (0.103)
Constant	2.162 (1.802)	-1.806 (1.742)	-6.672 (9.727)	-39.904*** (10.769)	1.730 (1.869)	-3.803* (2.006)	2.941* (1.651)	-1.515 (1.695)	-5.506 (11.382)	-52.848*** (14.929)
N.Obs.	153		145		147		148		137	
Wald- χ^2	35.129		48.487		34.164		35.079		67.088	
Prob > χ^2	0.00		0.00		0.00		0.00		0.00	

Table 3: Estimates of multinomial probit regression models with robust standard errors of the categorical decision (Paternalism, Uninformed Libertarianism, Informed Libertarianism) with Paternalism reference category. T: State is a dummy-variable. Age, Reactance, Paternalism Index, Risk Preferences, and Locus of Control are measured as metric variables. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

4 Discussion

In the sequel, we briefly summarize and discuss our experimental results. First of all, our experiment suggests that paternalistic preferences are indeed heterogeneous within our sample. Furthermore, we find evidence that both outcome related preferences and preferences for a self-determined decision are relevant in the choice to surrender autonomy.

Outcome effect

We interpret outcome related effects as characteristics that directly influence the payoff of the experiment, that are in our case the idiosyncratic benefits (monetary effect) and risk preferences. As expected, outcome related preferences are reflected in the choice of paternalism vs. uninformed libertarianism. Starting with the former, we find differences between treatments. In *State*, subjects with lower idiosyncratic benefits are more likely to choose the paternalistic regime over the uninformed libertarian regime. In *Unspecified* we find no such effect. Hence, the monetary effect depends on the institution to which the choice is handed over, which we argue might be due to reasons of familiarity. In Germany, where the experiment was conducted, trust in the government and its institutions is relatively high (OECD, 2021) and the state might be perceived as trustworthy in terms of administrating small amounts of money. An unspecified institution, by contrast, offers

no indication for trust.⁹ Risk preferences, in contrast to the monetary effect, are relevant in both treatments and are independent of the idiosyncratic benefit. More risk affine subjects are more likely to choose uninformed by themselves than handing the decision over to another institution. This finding is in line with our theoretical prediction of regime choice for individuals with high idiosyncratic benefits, but conflicts with the prediction for individuals with low idiosyncratic benefits, as the latter should prefer paternalism with increasing risk affinity (cf. chapter 2.2). One explanation for this discrepancy might be that risk affine individuals may focus on the maximum payoff, rather than the expected utility, that has the higher probability (and higher variance in the outcomes) in uninformed libertarian regime than in the paternalistic regime. Taking together, idiosyncratic benefits and risk preferences significantly predict uninformed autonomous decision making vs. paternalistic decision making but not informed autonomous decision making vs. paternalistic decision making. Hence, we take this as evidence that one dimension of paternalistic preferences is outcome related. The decision for or against a paternalistic intervention for some people might be driven (primarily) by expectations and desires about the result of the intervention. For individuals with strong outcome related preferences, the goal of the intervention rather than the intervention itself might be decisive, e.g. the use of a tax, the health consequences of a food ban or the future personal income of a pension plan.

Finally, we also investigated the relationship between our experiment and the Governmental Paternalism Index developed by [Konrad and Simon \(2023\)](#). Subjects with a more positive attitude towards paternalism are more likely to choose the paternalistic regime over the uninformed libertarian regimes, whereby this effect is weakened for older people. The age effect is in line with the finding of [Konrad and Simon \(2023\)](#) that middle aged subjects, i.e. our upper end of the sample, are more positive towards paternalistic interventions. The association with the informed libertarianism is weak and vanishes when controlling for reactance (cf. table 3). Therefore, the paternalism index seems to primarily address outcome related preferences rather than autonomous preferences. This seems plausible, as the index focuses on the trade-off between autonomy and the avoidance of harm, i.e. the outcome of interventions. This is supported by the fact, that the authors find no influence of reactance and locus of control on the stated paternalistic preferences in their study (cf. [Konrad and Simon, 2023](#)).

Autonomy effect

We interpret the autonomy effect as the desire to make a self-determined decision. We used psychological reactance and locus of control as constructs the literature assumes to correlate with paternalistic preferences to investigate this effect. As expected, the data

⁹Note that the presented experiment is designed to vary the framing of the institutions easily.

shows a significant influence of psychological reactance and the locus of control on the choice between informed libertarianism and paternalism. More reactant subjects and subjects that are more convinced of their own contribution to success (stronger internal control¹⁰) are more likely to choose informed by themselves than giving up the decision. The autonomy effect, however, is highly dependent on age in a way that the regime choice of older subjects is less affected by the desire for an autonomous decision. Note at this point, that we find this association with age, albeit using a student sample with relatively little variance in age. This is in line with the observed tendency of younger subjects having a stronger desire for autonomous and informed decision making in other studies (for autonomous decision making e.g. [Ende et al., 1989](#); for information seeking e.g. [Stegina and Occhipinti, 2002](#); cf. [Mather, 2006](#) for an overview on age differences in decision making). Last, we checked for correlations with personality and find more open (described as curious and exploratory ([McCrae and Costa, 2008](#), p. 274)) and more conscientious (described as reliable, responsible and thorough ([Schmeisser et al., 2021](#), p. 2)) people tend to decide informed on their own instead of handing over the decision, which fits nicely in the definition of the respective dimensions.

Taking together, both psychological constructs significantly predict informed autonomous decision making vs. paternalistic decision making but not uninformed autonomous decision making vs. paternalistic decision making. We take this as evidence, that another dimension of paternalistic preferences arises from the desire for autonomous decision making. For individuals with a strong desire for autonomy, the intervention itself, e.g. the obligation to pay taxes, avoid food or save money, rather than the goal of the intervention might be decisive.

Limitations

Our study has several limitation. First of all, our sample is small and consists of young, highly educated subjects. Hence, more data is required to generalise the observed age effect of locus of control, reactance and the paternalism index. Moreover, we argued that the monetary effect occurs only in *State* due to reasons of familiarity and trust. As we conducted only 2 treatments, *State* and *Unspecified*, further experiments in other countries and more frames are needed to test this argumentation and investigate the relationship between framing and paternalistic decision making. Trust in the state in established democracies has also been shown to increase with the level of education (see [Mayne and Hakhverdian, 2017](#) for an overview of study results). As our sample is highly educated, more data is needed to investigate robustness of the effect. Another limitation refers to the price of the perfect information in the libertarian regime. In line with the model of [Konrad \(2023\)](#), we expect the regime choice to be highly dependent on cost

¹⁰This effect becomes visible only if controlling for reactance suggesting both dimensions are distinct.

function. Hence, more variations are needed to generalise the results.

5 Concluding Remarks

In this study, we present a flexible experiment to elicit paternalistic preferences in a clean environment. In our sample, we find that paternalistic preferences are heterogeneously distributed and that both outcome related and autonomy related motives are factors of paternalistic preferences. More specifically, outcome related preferences predict the decision between deciding autonomously and uninformed vs. handing over the decision and autonomy related preferences predict the decision between deciding autonomously and informed vs. handing over the decision. Also we find a significant influence of age, suggesting that (especially) autonomy preferences play an important role for younger individuals in the regime choice. While our study is methodically relevant, as it offers an incentivised experimental design to elicit paternalistic preferences, we hesitate to generalise our experimental results due to the small student sample. If replicated, however, our results are also highly relevant from a practical point of view. First of all, they might help to understand why paternalistic interventions are perceived differently within a population. Furthermore, we find that individuals with strong desires for autonomy opt more often for informed autonomy and individuals with strong focus on the outcome for uninformed autonomy, compared with surrendering autonomy. This insight is relevant (especially for politics, economics and psychology), as it allows to make predictions about specific interventions as well as to customise interventions. Lastly, results may help to justify specific paternalistic state interventions in which the personal (monetary) involvement in it is small.

References

- Afzal, U., d'Adda, G., Fafchamps, M., & Said, F. (2022). Intrahousehold Consumption Allocation and Demand for Agency: A Triple Experimental Investigation, *American Economic Journal: Applied Economics*, 14(3), pp. 400-444.
- Ambuehl, S., Bernheim, B. D., & Ockenfels, A. (2021). What Motivates Paternalism? An Experimental Study. *American Economic Review*, 111(3), pp. 787-830.
- Arad, A., & Rubinstein, A. (2018). The People's Perspective on Libertarian-Paternalistic Policies. *Journal of Law and Economics*, 61(2), pp. 311-333.
- Bartling, B., Cappelen, A. W., Hermes, H., Skivenes, M., & Tungodden, B. (2023). Free to Fail? Paternalistic Preferences in the United States. *NHH Dept. of Economics Discussion Paper*, 09/2023, Available at SSRN: <https://ssrn.com/abstract=4454985> or <http://dx.doi.org/10.2139/ssrn.4454985>.
- Bartling, B., Fehr, E., & Herz, H. (2014). The Intrinsic Value of Decision Rights. *Econometrica*, 82(6), pp. 2005-2039.
- Brehm, S. S., & Brehm, J. W. (2013). *Psychological Reactance: A Theory of Freedom and Control*. Academic Press.
- Brutger, R., Kertzer, J. D., Renshon, J., Tingley, D., & Weiss, C. M. (2023). Abstraction and Detail in Experimental Design. *American Journal of Political Science*, 67(4), pp. 979-995.
- Caliendo, M., Cobb-Clark, D. A., Obst, C., Seitz, H., & Uhlendorff, A. (2022). Locus of Control and Investment in Training. *Journal of Human Resources*, 57(4), pp. 1311-1349.
- Charness, G., Gneezy, U., & Halladay, B. (2016). Experimental methods: Pay one or pay all. *Journal of Economic Behavior & Organization*, 131, pp. 141-150.
- Cobb-Clark, D. A., Kassenboehmer, S. C., & Sinning, M. G. (2016). Locus of control and savings. *Journal of Banking & Finance*, 73, pp. 113-130.
- Debnam, J. (2017). Selection Effects and Heterogeneous Demand Responses to the Berkeley Soda Tax Vote. *American Journal of Agricultural Economics*, 99(5), pp. 1172-1187.
- Debnam, J. & Just, D. R. (2017): Endogenous Responses to Paternalism: Examining Psychological Reactance in the Lab and the Field. *Working Paper*, Retrieved: February 29, 2024, <https://files.webservices.illinois.edu/7370/jakinadebnamjmp.pdf>.

- Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J., & Wagner, G. G. (2011). Individual Risk Attitudes: Measurement, Determinants, and Behavioral Consequences. *Journal of the European Economic Association*, 9(3), pp. 522-550.
- Dworkin, G. (2020). "Paternalism". *The Stanford Encyclopedia of Philosophy* (Fall 2020 Edition), Edward N. Zalta (Ed.), <https://plato.stanford.edu/archives/fall2020/entries/paternalism/>.
- Dykstra, H., Exley, C. L., & Niederle, M. (2022). When Do Individuals Give Up Agency? The Role of Decision Avoidance, Retrieved: February 29, 2024, https://www.hbs.edu/ris/Publication%20Files/DykstraExleyNiederle_Oct2022_58a4444b-d720-484d-b97f-37f13b21866a.pdf.
- Ende, J., Kazis, L., Ash, A., & Moskowitz, M. A. (1989). Measuring Patients' Desire for Autonomy: Decision Making and Information-seeking Preferences among Medical Patients, *Journal of General Internal Medicine*, 4, pp. 23-30.
- Fehr, E., Herz, H., & Wilkening, T. (2013). The Lure of Authority: Motivation and Incentive Effects of Power. *American Economic Review*, 103(4), pp. 1325-1359.
- Feinberg, J. (1971). Legal Paternalism. *Canadian Journal of Philosophy*, 1(1), pp. 105-124.
- Gangadharan, L., Grossman, P. J., Jones, K., & Leister, C. M. (2018). Paternalistic giving: Restricting recipient choice. *Journal of Economic Behavior & Organization*, 151, pp. 143-170.
- Graeber, D., Schmidt-Petri, C., & Schröder, C. (2021). Attitudes on voluntary and mandatory vaccination against COVID-19: Evidence from Germany. *PloS ONE*, 16(5): e0248372, <https://doi.org/10.1371/journal.pone.0248372>.
- Harrison, G. W. (2007). Making Choice Studies Incentive Compatible. In B. J. Kanninen (Ed.), *Valuing Environmental Amenities Using Stated Choice Studies* (pp. 67-110). Springer.
- Hayek, F. A. (1978). *Law, Legislation, and Liberty*, Volume 1. University of Chicago Press.
- Hensher, D. A. (2010). Hypothetical bias, choice experiments and willingness to pay. *Transportation Research Part B: Methodological*, 44(6), pp. 735-752.
- Holt, C. A., & Laury, S. K. (2002). Risk aversion and incentive effects. *American Economic Review*, 92(5), pp. 1644-1655.

- Jacobsson, F., Johannesson, M., & Borgquist, L. (2007). Is Altruism Paternalistic?. *The Economic Journal*, 117(520), pp. 761-781.
- Konrad, K. A. (2023). The Political Economy of Paternalism. *Working Paper of the Max Planck Institute for Tax Law and Public Finance*, 2023-02, Available at SSRN: <https://ssrn.com/abstract=4351518> or <http://dx.doi.org/10.2139/ssrn.4351518>.
- Konrad, K. A., & Simon, S. A. (2023). Paternalism Attitudes and the Happiness Value of Fundamental Freedoms. *Working Paper of the Max Planck Institute for Tax Law and Public Finance*, 2023-11, Available at SSRN: <https://ssrn.com/abstract=3816728> or <http://dx.doi.org/10.2139/ssrn.3816728>.
- Lassen, D. D., & Mahler, D. (2023). Free to choose or free to lose? Understanding individual attitudes toward paternalism. *Behavioural Public Policy*, 7(3), pp. 721-743.
- Lusk, J. L., Marette, S., & Norwood, F. B. (2014). The Paternalist Meets His Match. *Applied Economic Perspectives and Policy*, 36(1), pp. 61-108.
- Mather M. (2006). A Review of Decision-Making Processes: Weighing the Risks and Benefits of Aging. In: National Research Council (US) Committee on Aging Frontiers in Social Psychology, Personality, and Adult Developmental Psychology; L. L. Carstensen, & C. R. Hartel (Eds.), *When I'm 64* (pp. 145-173). National Academies Press (US); 2006. Available from: <https://www.ncbi.nlm.nih.gov/sites/books/NBK83778/>.
- Mayne, Q., & Hakhverdian, A. (2017). Education, socialization, and political trust. In S. Zmerli, T. W. G. van der Meer (Eds.), *Handbook on Political Trust* (pp. 176-196). Edward Elgar Publishing Limited.
- Mazis, M. B., Settle, R. B., & Leslie, D. C. (1973). Elimination of Phosphate Detergents and Psychological Reactance. *Journal of Marketing Research*, 10(4), pp. 390-395.
- McCrae, R. R., & Costa, P. T. (2008). Empirical and Theoretical Status of the Five-Factor Model of Personality Traits. *The SAGE handbook of personality theory and assessment*, 1, pp. 273-294.
- Merz, J. (1983). Fragebogen zur Messung der psychologischen Reaktanz [A questionnaire for the measurement of psychological reactance]. *Diagnostica*, 29(1), pp. 75-82.
- Mill, J. S. (1859/2001). *On liberty*. Batoche Books.
- Naumann, E., Möhring, K., Reifenscheid, M., Wenz, A., Rettig, T., Lehrer, R., Krieger, U., Juhl, S., Friedel, S., Fikel, M., Cornesse, C., & Blom, A. G. (2020). COVID-19 policies in Germany and their social, political, and psychological consequences. *European Policy Analysis*, 6(2), pp. 191-202.

- Nolte, H. (1996). *Personal communications to prof. dr. wagner regarding a new revised locus of control scale for the SOEP.*
- Nozick, R. (1974). *Anarchy, State, and Utopia.* Blackwell Books.
- Nussbaum, M. C. (2000). *Women and human development: The capabilities approach* (Vol. 3). Cambridge University Press.
- O'Donoghue, T., & Rabin, M. (2003). Studying Optimal Paternalism, Illustrated by a Model of Sin Taxes. *American Economic Review*, 93(2), pp. 186-191.
- O'Donoghue, T., & Somerville, J. (2018). Modeling Risk Aversion in Economics. *Journal of Economic Perspectives*, 32(2), pp. 91-114.
- OECD (2021). Government at a Glance. *OECD Publishing*, <https://doi.org/10.1787/1c258f55-en>.
- Owens, D., Grossman, Z., & Fackler, R. (2014). The Control Premium: A Preference for Payoff Autonomy. *American Economic Journal: Microeconomics*, 6(4), pp. 138-161.
- Pedersen, S. K., Koch, A. K., & Nafziger, J. (2014). Who Wants Paternalism?. *Bulletin of Economic Research*, 66(S1), pp. 147-166.
- Pennebaker, J. W., & Sanders, D. Y. (1976). American Graffiti: Effects of Authority and Reactance Arousal. *Personality and Social Psychology Bulletin*, 2(3), pp. 264-267.
- Pikulina, E. S. & Tergiman, C. (2020). Preferences for power. *Journal of Public Economics*, 185, 104713, <https://doi.org/10.1016/j.jpubeco.2020.104173>.
- Rammstedt, B., & John, O. P. (2007). Measuring personality in one minute or less: A 10-item short version of the Big Five Inventory in English and German. *Journal of Research in Personality*, 41(1), pp. 203-212.
- Rawls, J. (1971). *A Theory of Justice: Original Edition.* Harvard University Press.
- Reich, J. W., & Robertson, J. L. (1979). Reactance and Norm Appeal in Anti-Littering Messages. *Journal of Applied Social Psychology*, 9(1), pp. 91-101.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, 80(1), pp. 1-28.
- Sainz Villalba, C. (2023). Paternalism Preferences: Differences Across Genders. *Working Paper of the Max Planck Institute for Tax Law and Public Finance*, 2023-03, Available at SSRN: <https://ssrn.com/abstract=4371751> or <http://dx.doi.org/10.2139/ssrn.4371751>.

- Schimmack, U., Schupp, J., & Wagner, G. G. (2008). The Influence of Environment and Personality on the Affective and Cognitive Component of Subjective Well-being. *Social indicators research*, 89, pp. 41-60.
- Schmeisser, Y., Renström, E. A., & Bäck, H. (2021). Who Follows the Rules During a Crisis?—Personality Traits and Trust as Predictors of Compliance with Containment Recommendations During the COVID-19 Pandemic. *Frontiers in Political Science*, 3, <https://doi.org/10.3389/fpos.2021.739616>.
- Schütze, T., Spitzer, C. & Wichardt, P. C. (2023). Nudging: An Experiment on Transparency, Controlling for Reactance and Decision Time. *CESifo Working Paper*, 10599, Available at SSRN: <https://ssrn.com/abstract=4538047> or <http://dx.doi.org/10.2139/ssrn.4538047>.
- Smiley, M. (1989). Paternalism and democracy. *The Journal of Value Inquiry*, 23, pp. 299-318.
- Steginga, S. K., & Occhipinti, S. (2002). Decision Making About Treatment of Hypothetical Prostate Cancer: Is Deferring a Decision an Expert-Opinion Heuristic?. *Journal of Psychosocial Oncology*, 20(3), pp. 69-84.
- Sugden, R. (2005). Anomalies and Stated Preference Techniques: A Framework for a Discussion of Coping Strategies. *Environmental and Resource Economics*, 32, pp. 1–12.
- Tannenbaum, D., Fox, C. R., & Rogers, T. (2017). On the misplaced politics of behavioural policy interventions. *Nature Human Behaviour*, 1(7), 0130, <https://doi.org/10.1038/s41562-017-0130>.
- Thaler, R. H., & Sunstein, C. R. (2003). Libertarian Paternalism. *American Economic Review*, 93(2), pp. 175-179.
- Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press.
- Weinhardt, M., & Schupp, J. (2014). Multi-Itemskalen im SOEP Jugendfragebogen. *SOEP Survey Papers*, No. 234, <http://hdl.handle.net/10419/106410>.
- White, J. A. (2000). *Democracy, Justice, and the Welfare State: Reconstructing Public Care*. Pennsylvania State University Press.
- Zwolinski, M. (n.d.). Libertarianism. *The Internet Encyclopedia of Philosophy*, ISSN 2161-0002, Retrieved: February 8, 2024, <https://iep.utm.edu/libertar/>.

A Appendix

A.1 Factor Analysis - Locus of Control

In order to aggregate our questions on locus of control into a single value, we carried out a factor analysis in line with [Caliendo et al. \(2022\)](#) and [Cobb-Clark et al. \(2016\)](#). The statements on locus of control ask about both external and internal control beliefs. In order to determine which statements indicate an internal/external locus of control, a factor analysis of the 10 statements is first conducted. One factor has an eigenvalue greater than 1. Since the cumulative explanatory power of the first two factors is greater than 1, we consider both factors. We find 8 items with factor loadings greater than $|0.4|$, two of them (item 1 and 6) have a negative sign interpretable as internal control beliefs. The answers given by the participants on a 7-point Likert scale are reversed for the items (items 2, 3, 5, 7, 8, 10) with positive loading on factor 1 and a new factor analysis is carried out with the 8 (items 4 and 9 are neglected) items. We find one factor with an eigenvalue greater than 1 and the factor loadings have the expected signs. Using the estimated weightings of the 8 statements, a single value locus of control is determined for each participant, with a higher value indicating a stronger internal control conviction. Figure 5 shows a histogram of the resulting factor for locus of control.

	Eigenvalue	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10
Factor 1	1.82040	-0.4027	0.4981	0.5108	0.0703	0.5527	-0.0731	0.4526	0.5262	0.1883	0.5624
Factor 2	0.75552	0.5665	0.3923	-0.0942	0.0952	0.1523	0.4655	0.1304	-0.0630	-0.0422	0.0108

Table 4: Eigenvalues and factor loadings of all items - locus of control questionnaire

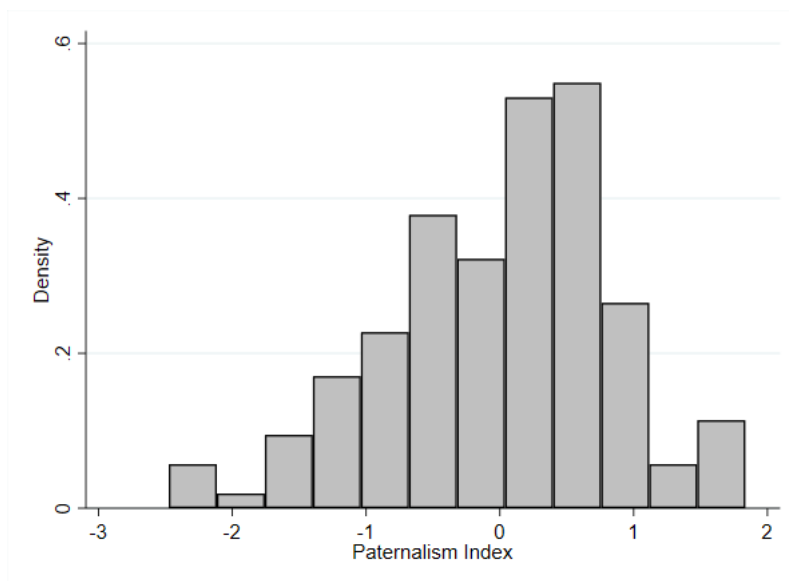


Figure 5: Histogram: Locus of Control

A.2 Factor Analysis - Governmental Paternalism Index

For our analysis, we used the Governmental Paternalism Index by [Konrad and Simon \(2023\)](#). The index is based on 11 statements on paternalistic government interventions, which participants could disagree or agree with on a 5-point Likert scale. Figure 6 shows the percentages of the various answer options for the individual questions. In order to aggregate the 11 responses into one index, we carried out a factor analysis analogous to [Konrad and Simon \(2023\)](#). We obtained one factor with an eigenvalue greater than 1, which we retained. The factor loadings have the expected signs. Table 5 shows the results of our factor analysis. Using the estimated weighting of the 11 statements, a single Governmental Paternalism Index is calculated for each participant. Figure 7 shows a histogram of the resulting Index.

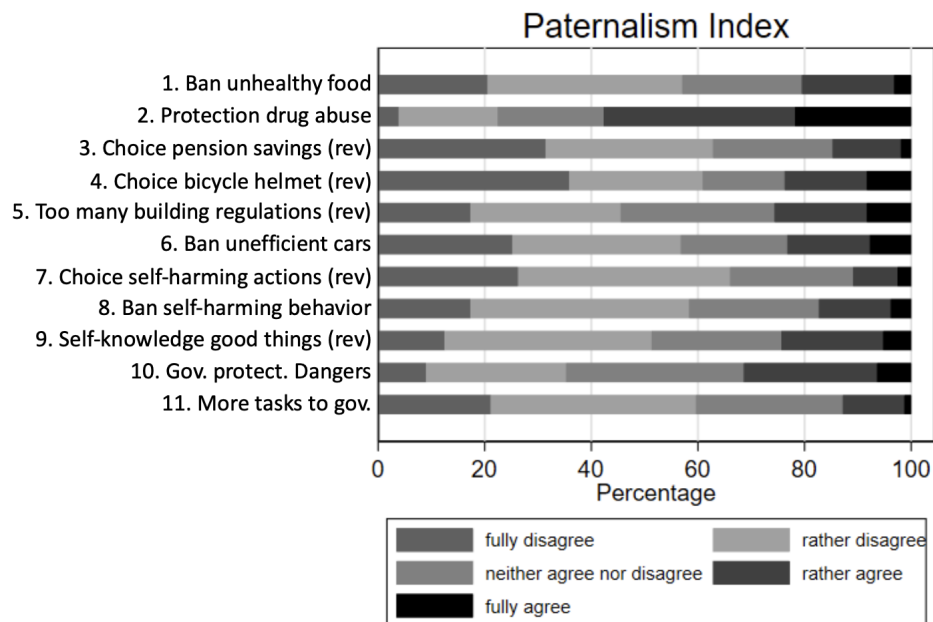


Figure 6: Governmental Paternalism Index - Percentages of the various answer options for the individual questions.

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Eigenvalue	2.01525	0.82534	0.33218	0.23027	0.11419

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Item 1	0.3487	-0.0826	0.1409	0.2237	-0.0925
Item 2	0.4905	-0.1265	-0.1337	0.1352	0.1173
Item 3	0.0282	0.5033	0.1201	-0.1883	0.0181
Item 4	0.3762	0.4217	0.0135	-0.0840	0.0084
Item 5	-0.0028	0.2961	-0.1580	0.1261	0.2067
Item 6	0.3954	0.2190	0.1058	0.1688	0.0539
Item 7	0.7053	0.0467	-0.1960	-0.0949	-0.0493
Item 8	0.7306	-0.1210	-0.1468	-0.1326	-0.0726
Item 9	0.1936	0.3163	0.1085	0.1891	-0.1484
Item 10	0.4626	-0.3394	0.2013	-0.0399	0.0973
Item 11	0.2677	-0.0618	0.3625	-0.1053	0.0816

Table 5: Eigenvalues and factor loadings of all items - Governmental Paternalism Index

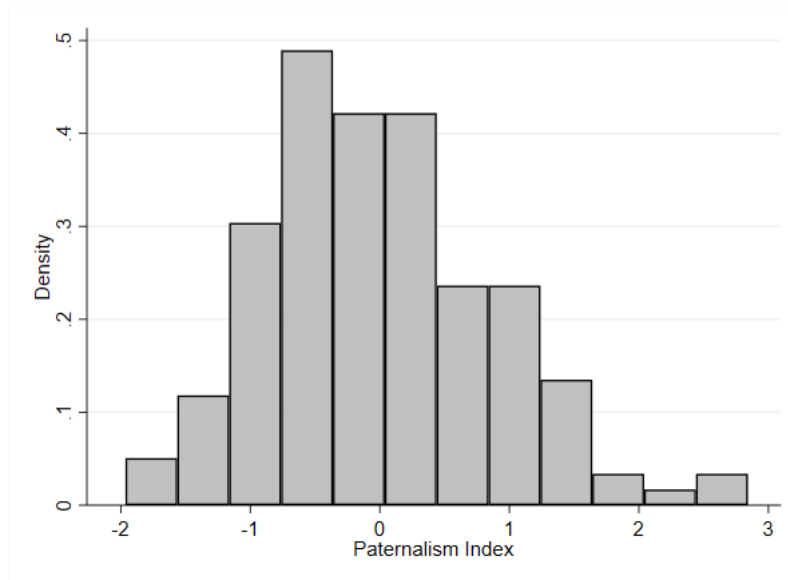


Figure 7: Histogram: Governmental Paternalism Index