

Are vulnerable people more susceptible to nudges?

An experiment on the interaction of cognitive scarcity and defaults in a public goods game

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Motivation

- Nudges are gaining prominence as public policy tools that systematically, efficiently, and effectively influence behavior without changing economic incentives or the option set [7].
- From a perspective of bounded rationality, the role of behavioral biases and heuristics in modeling decision making evolved from limits to cognitive capacity, willpower, and self-interest [5].
- Many nudges exploit heuristics and biases. Consequently, individual differences in cognitive capacity could cause varying susceptibility to being influenced by nudges.
- Our lab experiment, as opposed to [1, 3], provides a confirmatory test of a proposed causal effect and extends the evidence provided by [2] to the domain of public goods, in which the default effect is of specific importance, because individual costs potentially accompany social benefits.

Example

“Simple interventions“ like defaults, help in filling out forms, planning prompts, or reminders should support people low on cognitive and economic resources [4]. For someone with ample cognitive resources it might be easy to spot that a defaulted green energy tariff might reduce her individual CO_2 footprint - something from which everyone profits - but also results in relatively higher personal energy costs. She might therefore decide to deviate from the default. Someone with less cognitive resources - distracted by other tasks and thoughts - might stick to the default in order to simplify the decision, leaving her with more resources for other tasks or thoughts.

“Sometimes people cannot easily choose (because they lack bandwidth or expertise) [...]; they consider default rules to be a blessing”.

[6], p. 62

Experiment

- Multiple rounds of a finite, *non-linear* public goods game with a VCM, and fixed groups of four (see Table 1).
- 3x2 full factorial design, manipulating the individual default value and cognitive capacity.
- Before and during each of the 10 rounds, subjects encounter two tasks - a *memorization task* and a *contribution task* - in which the manipulations are implemented.

Choice Options

Table 1: Choice Options in the PGG

	Option						
	1	2	3	4	5	6	7
	d_H	PO	NE	d_L			
Private	0	105	210	305	350	370	390
Shared	600	500	400	300	200	100	0

d_H : high default; d_L : low default. PO = Pareto optimum, NE = Nash Equilibrium (Interactive plot: <http://bit.ly/2Kq2eZf>).

Conclusion

- Based on our findings, policymakers would not have to fear that subjects with different cognitive resources would be affected differently by default values, irrespective of being pro-social or pro-self.
- Further research could explore other factors potentially causing heterogeneous nudge-effects, e.g. economic scarcity and social connectedness.

Supplementary Material

- Publicly available at <http://bit.ly/31mrbtW>.

Central Result

Based on 476 independent observations, there is no evidence that the effect of the default on contributions is stronger for subjects under high cognitive scarcity compared to subjects under low cognitive scarcity.

References

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- [3] M. Gärtnner. The prosociality of intuitive decisions depends on the status quo. *Journal of Behavioral and Experimental Economics*, 74:127–138, 2018.
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- [5] H. A. Simon. Theories of bounded rationality. *Decision and Organization*, 1(1):161–176, 1972.
- [6] C. R. Sunstein. Misconceptions about nudges. *Journal of Behavioral Economics for Policy*, 2(1):61–67, 2018.
- [7] R. Thaler and C. R. Sunstein. *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press, New Haven, CN, 2008.

Default Choices

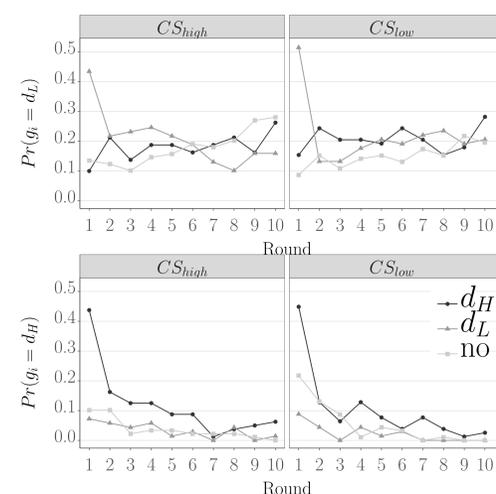


Figure 1: Fraction choosing defaulted value.

Conditional Marginal Effects

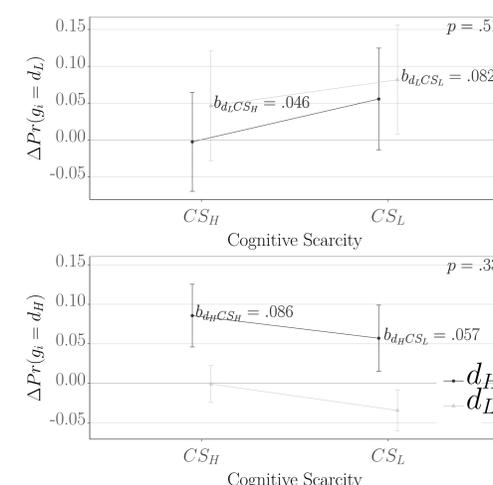


Figure 2: Default effect conditional on cognitive scarcity.

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