

The influence of resource growth rates on cooperation in intergenerational dilemmas: A person-situation interaction

Pascal J. Kieslich & Mila A. Rüdiger – University of Mannheim, Germany



Theoretical background

Intergenerational dilemma

Situation with **conflict of interest** between present generation and future generations, e.g., concerning the use of common resources¹

- Long-term consequences affect only future generations
- Future generations cannot influence present generation

Growth rate

- Key property of **renewable resources**, as some resources grow slower than others and are particularly vulnerable to **overexploitation**
- To which extent are people sensitive to the growth rate in situations where resource development only affects next generation?

Individual differences

- People vary in the degree they cooperate with others²
- Variation explained by personality trait **Honesty-Humility (HH)**³: “tendency to be fair and genuine in dealing with others even one might exploit them without suffering retaliation”⁴

Methods & hypotheses

Hypotheses

- H1: Individuals generally show some concern for the benefit of future generations and extract less from resources with slower **growth rates**
- H2: Individuals high in **HH** extract less from a resource across all conditions
- H3: **Person-situation interaction**
People high in HH are more sensitive to the growth rate and show greater restraint for smaller growth rates

Paradigm, hypotheses and analyses pre-registered via Open Science Framework
<https://osf.io/p7rg5/>

Paradigm

- Adapted from Kieslich and Hilbig (in prep.)⁵
- Individuals extract sequentially from monetary resource (see Fig. 1)
- After each extraction remaining resource multiplied with growth rate
- Manipulation of size of growth rate: **slow** (1.25) vs. **medium** (2.00) vs. **fast** (5.00)
- Dependent variable: percent extracted

Web study

- $N = 746$ (71% female, 73% students)
- Incentivized (partly): for two randomly selected participants decision paid out
- Assessment of HH with HEXACO-60 questionnaire⁶ (Cronbach's $\alpha = .76$)
- Random assignment to **growth rate** condition and **generation sequence** (between subjects)

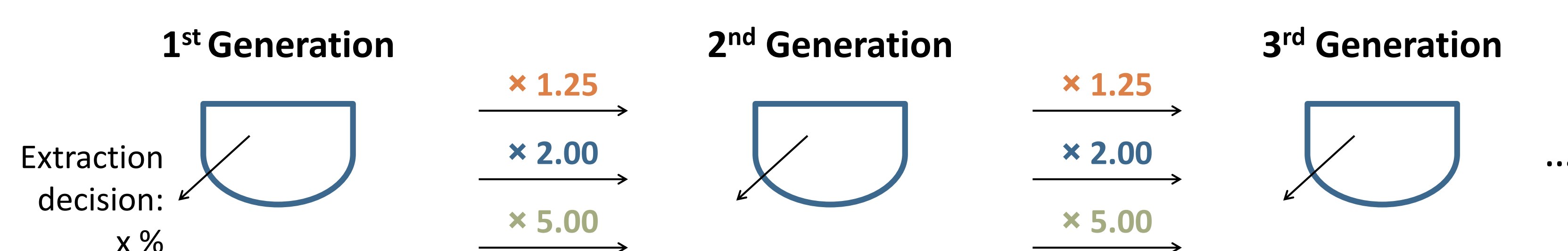


Fig. 1. Structure of current study. Participants are randomly assigned to a generation and growth rate.

Results

Linear model predicting extraction decision

- Main effect growth rate (see Fig. 2)
 $F(2,740) = 34.27, p < .001, f^2 = .093$
- Main effect of HH
 $F(1,740) = 74.31, p < .001, r = -.29$
- Interaction HH x growth rate (see Fig. 3)
 $F(2,740) = 5.34, p = .005, f^2 = .014$

Separate correlations for HH and decision

- in slow condition: $r = -.43, p < .001$
- in medium condition: $r = -.20, p = .001$
- in fast condition: $r = -.26, p < .001$

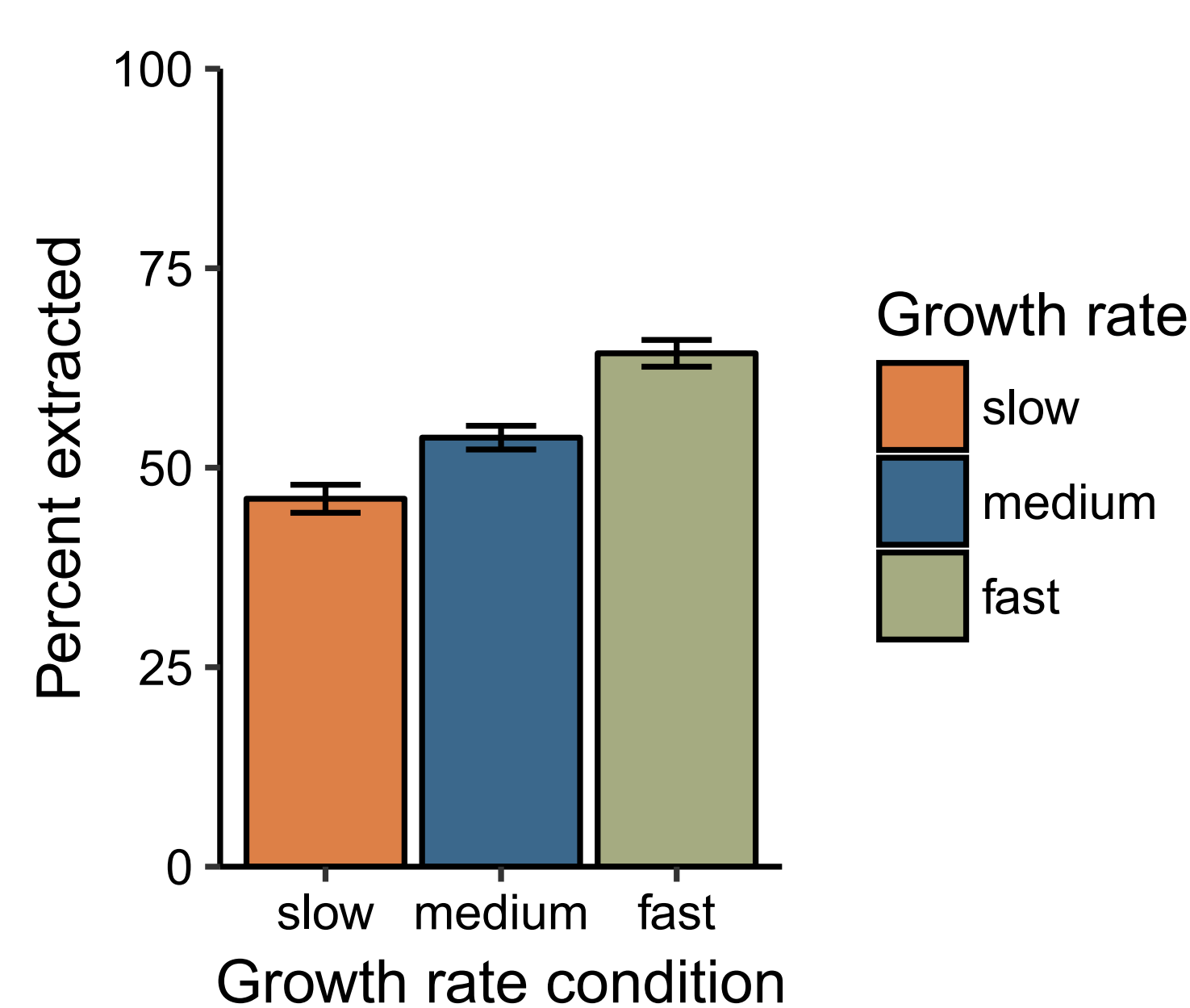


Fig. 2. Mean extraction decision per condition. Error bars represent 1 SEM.

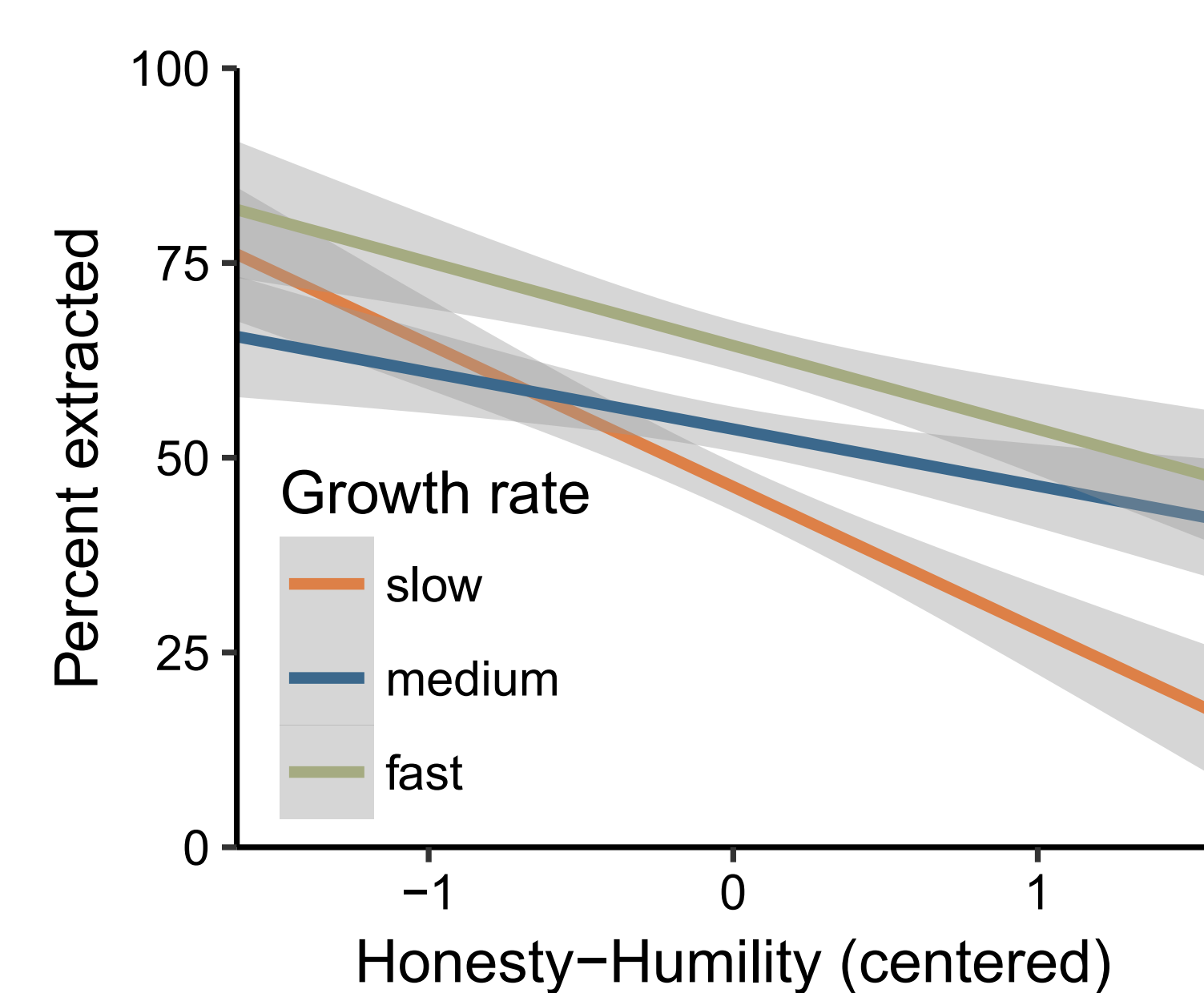


Fig. 3. Predicted decision depending on HH and growth rate. Confidence bands represent 95 % CI.

Discussion & implications

Summary

- People generally show some concern for future generations and resource growth rates
- Person-situation interaction: dispositional cooperators (people high in HH) are most sensitive to growth rates and reduce extraction for resources with small growth rates

Implications for policy making

- Many people do restrain their resource usage to some extent in situations where resources are slow to replenish themselves – especially if this property is explicitly communicated as in the current study
- Policy makers should develop interventions that target specific groups of individuals who generally display uncooperative behavior across situations – as especially this group of individuals is responsible for the decline of common resources over time

References

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