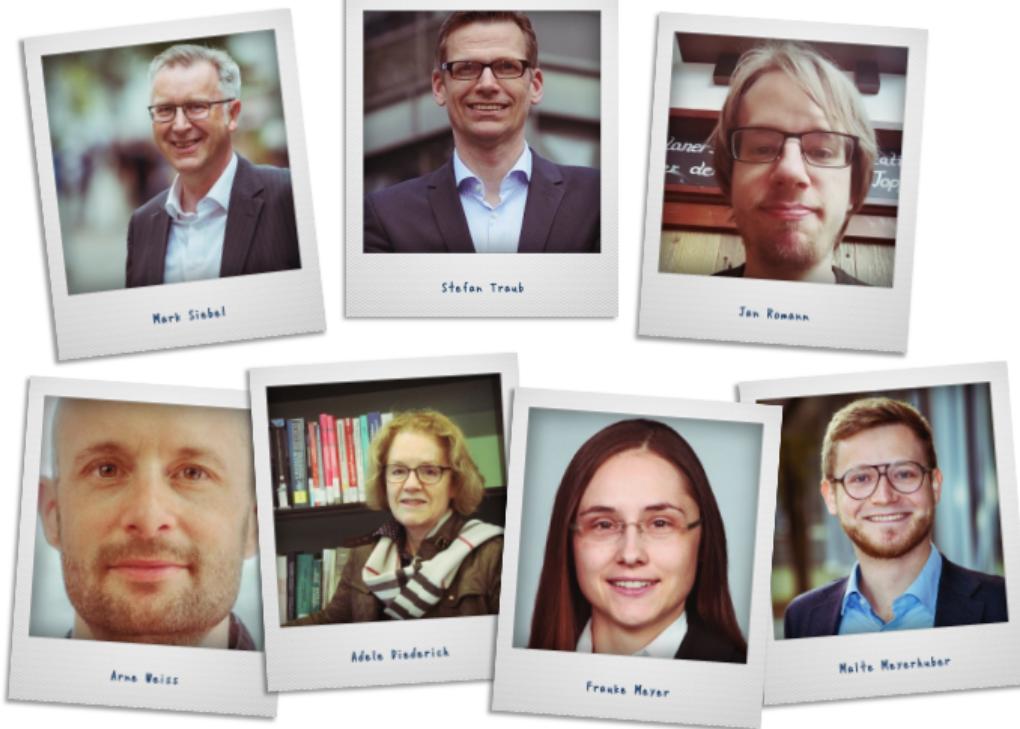


Empirical Studies on Questions of Need-Based Distributive Justice

Alexander Max Bauer

July 12, 2025





Roadmap

- 1 Need as Reference Point (Bauer et al. forthcoming)
- 2 Need and Accountability (Bauer et al. 2022, Bauer and Romann 2024)
- 3 Kinds of Needs (Bauer et al. 2023)
 - 3.1 Study 1
 - 3.2 Study 2
- 4 Summary of Key Results

1 Need as Reference Point

1 Need as Reference Point

Background

- People make gradual evaluations of the justice of distribution scenarios
- Is there a connection between the evaluation of justice and meeting needs? What role does a needs threshold play in this?

Thinking About Need
A Vignette Experiment on
Need-Based Distributive Justice

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Published in
The Journal of Economic Inequality

Abstract: We examine the role of need satisfaction in non-comparative justice ratings of endowments with goods. As normative approaches, we discuss utilitarianism and principles of need-based justice theory. Using a vignette experiment with 309 participants, we elicit the participants' justice ratings of endowments with living space and estimate their justice evaluation functions. We show that a need context influences the participants' prioritization of basic needs. Moreover, a needs threshold also changes the participants' justice evaluation functions significantly.

Keywords: Basic Needs, Justice Principles, Prioritization, Satisfaction, Utilitarianism, Vignette Experiment

JEL Classification: D3, D6, D8

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Bauer et al. forthcoming

1 Need as Reference Point

Design and Implementation

- WiSo Lab, University of Hamburg, September 2016
- $n = 116$
- Impartial observers
- Need and Control Group (*between subjects*)
- Global and Relative Evaluation Task (*within subjects*)
- 11 Cases

1 Need as Reference Point

Vignette (1/2)

"Please imagine the following:

In the region of Bergtal, a new village is going to be established. It is the task of the Public Housing Association of Bergtal to build housing.

All households in this region want to live in the largest living space possible. The residents of the region have collectively decided on a minimum amount of living space, under which living a decent life in this community is not possible. Between the households in the region, there are no noteworthy differences and the minimum amounts are the same for each household: Each household should have 1000 regional—i. e., common to the region—area units of living space in order to be able to live a decent life. To have a living space with the equivalent area means for a household to live in close quarters, but it will be just enough to lead a decent life."

1 Need as Reference Point

Vignette (2/2)

"There are enough means to be able to build up to 2000 regional area units of living space for each household. The Regional Parliament decides how much living space will actually be built for the residents of the new village.

The decision has otherwise no noteworthy consequences. For the construction of living space, no additional area would be consumed. The new village will be built in the area of an old village that was abandoned after a fire destroyed the houses.

In its decision, the Regional Parliament wants to take into account how impartial people—like you—judge the justice of different scenarios. Your task is, therefore, to indicate for each scenario how just you hold the distribution of living space to be."

1 Need as Reference Point

Task (1/2)

The screenshot shows a survey interface with the title "Umfrage". The main content is a question asking respondents to indicate the percentage of their household's income they would give to a neighbor if asked to do so. Below the question is a summary table showing the distribution of responses across different income levels.

Kategorie	Anteil (%)
sehrM	100
leichtM	0

At the bottom of the page, there is a "Survey end" button.

Global Evaluation Task

1 Need as Reference Point

Task (2/2)

Umfrage

Umfrage vorlesen und Antworten abholen

Umfrage

Bitte geben Sie an, welche der nachfolgenden Szenarien Sie gerechter finden.

Den Text der Einleitung können Sie sich unten noch einmal vorlesen lassen.
Durch einen Klick auf „Weiter“ gelangen Sie zu der nächsten Seite. Sie können anschließend nicht mehr auf diese Seite zurückkehren.

Szenario 1
Das Regierungspaket hat entschieden, dass jeder Haushalt Folgendes bekommt:
braucht 1.000
bekommt 0

Szenario 2
Das Regierungspaket hat entschieden, dass jeder Haushalt Folgendes bekommt:
braucht 1.000
bekommt 200

Szenario 1
 Szenario 2
 Beide Szenarien sind gleich gerecht bezeichnet

Wählen Sie hier aus, um den Test der Zulässigkeit vorzeitig zu beenden.

Relative Evaluation Task (Part 1)

Umfrage

Umfrage vorlesen und Antworten abholen

Umfrage

Sie haben angegeben, dass Sie Szenario 1 gerechter finden. Geben Sie nun bitte an, wie viel gerechter Sie je gegenüber Szenario 2 finden.

Szenario 3
Das Regierungspaket hat entschieden, dass jeder Haushalt Folgendes bekommt:
braucht 1.000
bekommt 0

Szenario 2
Das Regierungspaket hat entschieden, dass jeder Haushalt Folgendes bekommt:
braucht 1.000
bekommt 200

Den Text der Einleitung können Sie sich unten noch einmal vorlesen lassen.
Durch einen Klick auf „Weiter“ gelangen Sie zu der nächsten Seite. Sie können anschließend nicht mehr auf diese Seite zurückkehren.

ganz
gleich/
gleich-
ungerichtet
sehr viel
geringer

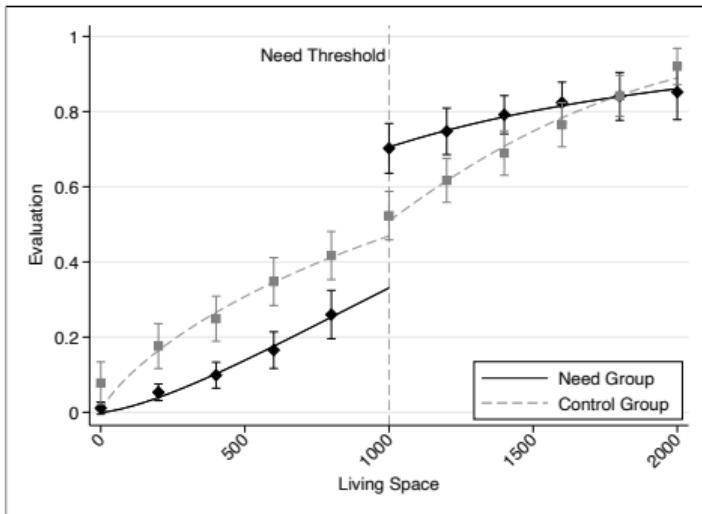
Wieviel gerechter finden Sie Szenario 1 gegenüber Szenario 2?

1 2 3 4 5 6 7 8 9 10 11

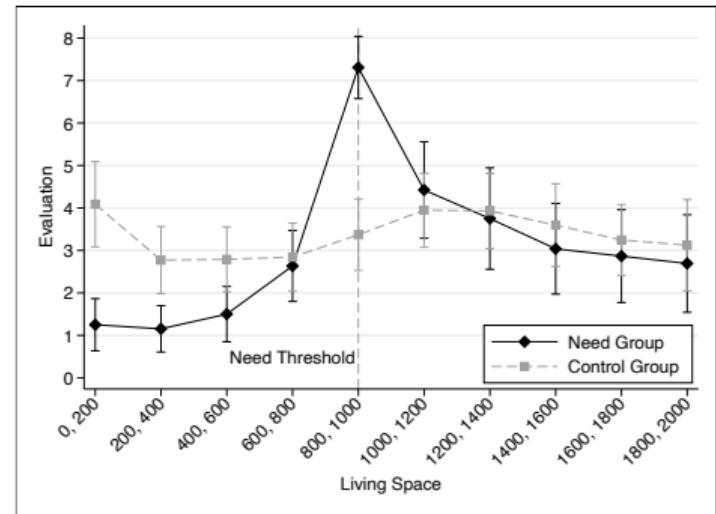
Relative Evaluation Task (Part 2)

1 Need as Reference Point

Results (1/2)



Global Evaluation Task



Relative Evaluation Task

1 Need as Reference Point

Results (2/2)

- Impartial observers make gradual justice evaluations
- Evaluations depend on supply situations
- Evaluations are influenced by information on need

2 Need and Accountability

2 Need and Accountability

Background

- Distribution decisions reveal distributional preferences
- People take various (normatively relevant) factors into account when making distribution decisions
- What role do differences in productivity, need, and accountability play in impartial distribution decisions?

Social Choice and Welfare (2022) 59:769–814
<http://doi.org/10.1007/s00351-022-01405-w>

ORIGINAL PAPER



Need, equity, and accountability
Evidence on third-party distribution decisions from a vignette study

Alexander Max Bauer^{1,2} · Frauke Meyer² · Jan Romann³ · Mark Siebel⁴ · Stefan Traub⁵

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Abstract
This paper presents the results of a vignette study with an online sample of the German adult population in which we analyze the interplay between need, equity, and accountability in third-party distribution decisions. We asked participants to divide firewood between two hypothetical persons who either differ in their need for heat or in their productivity in terms of their ability to chop wood. The study systematically varies the amount of wood each person needs as well as their productivity. We find that participants distribute significantly fewer logs or more logs to persons who are held accountable for their disadvantage. Independently of being held accountable or not, the needier person is partially compensated with a share of logs that exceeds her contribution, while the person who contributes less is given a share of logs smaller than her need share. Moreover, there is a domain effect in terms of participants being more sensitive to lower contributions than to greater need.

1 Introduction
This paper contributes to the growing empirical social choice literature which was initiated by the investigation of participants' individual and group distribution choices by Yano and Rue-Hiltl (2004) as well as Freibach et al. (1997a) (for overviews see, for example, Kenew 2003; Traub et al. 2005; Kenew 2009, as well

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Bauer et al. 2022

2 Need and Accountability

Design and Implementation (1/2)

- Respondi, online panel, September 2019
- $n = 200$ (stratified by gender, age, and net equivalent household income)
- Impartial decision-makers
- High and Low Accountability Group (*between subjects*)
- Need and Productivity Scenario (*within subjects*)
- 10 Cases

2 Need and Accountability

Vignette (High Responsibility Treatment, Productivity Scenario)

"Please imagine two persons, A and B, who do not know each other. Both heat their huts exclusively with firewood and have enough logs in stock to survive in winter. However, they need additional firewood in order not to feel cold in winter. The community allows the two persons to chop wood in the community forest for a certain period of time. A and B have little money and therefore have no other way to get firewood.

A and B both need x logs. If they get less than they need, it will get unreasonably cold in their huts. The less firewood they get, the colder their huts will be. The persons can use more firewood than they need to heat their huts up to pleasant temperatures or store it for subsequent winters.

A has chopped y logs and B has chopped z logs.

A continued to smoke heavily against the advice of their doctor and is suffering from a cardiovascular disease. That is why A has chopped less wood than B."

2 Need and Accountability

Design and Implementation (2/2)

Case	1	2	3	4	5
Need Scenario					
Need A	1.800	1.400	1.000	700	600
Productivity A	1.000	1.000	1.000	1.000	1.000
Need B	1.200	800	400	200	100
Productivity B	1.000	1.000	1.000	1.000	1.000
Productivity Scenario					
Need A	1.000	1.000	1.000	1.000	1.000
Productivity A	1.200	800	400	200	100
Need B	1.000	1.000	1.000	1.000	1.000
Productivity B	1.800	1.400	1.000	700	600
Parameterization					

2 Need and Accountability

Task

Bitte stellen Sie sich zwei Personen, Meyer und Schmidt vor, die sich nicht kennen. Beide heizen ausschließlich mit Holz und haben genug Holz auf Lager, um im Winter zu überleben. Jedoch benötigen sie zusätzliches Holz, um im Winter nicht zu frieren. Die zuständige Gemeinde ermöglicht den beiden Personen, in einem bestimmten Zeitraum im gemeindeeigenen Wald für den kommenden Winter Holz zu schlagen. Meyer und Schmidt verfügen über wenig Geld und haben daher keine andere Möglichkeit, sich Holz zu besorgen.

Meyer und Schmidt brauchen beide jeweils 1000 Scheite Holz. Wenn sie weniger erhalten als sie brauchen, wird es in ihren Hütten unzumutbar kalt. Je weniger Holz sie erhalten, desto kälter wird es. Holzmengen, die über die Bedarfe hinausgehen, können die Personen für das Heizen auf angenehme Temperaturen oder als Vorrat für spätere Winter nutzen.

Meyer hat 800 und Schmidt 1400 Scheite Holz geschlagen.

Meyer leidet an einer angeborenen Herz-Kreislauferkrankheit. Deswegen hat Meyer weniger Holz geschlagen als Schmidt.

Beide Personen haben also zusammengerechnet 2200 Scheite Holz geschlagen. In der Tabelle sehen Sie, wie viel Holz die Personen geschlagen haben und wie viel Holz sie jeweils brauchen. Bitte nehmen Sie in den freien Feldern diejenige Verteilung auf beide Personen vor, die aus Ihrer Sicht am gerechtensten ist. Bitte verteilen Sie alle 2200 Scheite Holz, d. h. 100 %, auf beide Personen.

Es sind noch 2200 Scheite Holz verfügbar.

Person	hat geschlagen (Scheite Holz)	braucht (Scheite Holz)	soll bekommen (Scheite Holz)	Prozentuale Verteilung
Meyer	800	1000	<input type="text"/>	—
Schmidt	1400	1000	<input type="text"/>	—
Gesamt	2200	2000	0	—

Distribution Task
(Low Responsibility Treatment, Productivity Scenario)

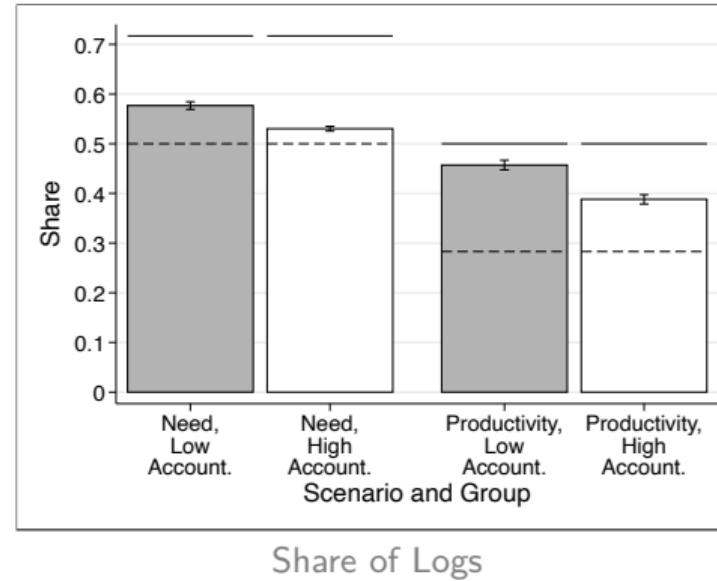
2 Need and Accountability

Results (1/3)

$$\text{Share of Logs} = \frac{\gamma_A}{\Gamma}$$

2 Need and Accountability

Results (2/3)



2 Need and Accountability

Results (3/3)

- Impartial decision-makers take need, productivity, and accountability into account
- Even in cases of low productivity, need is partially compensated
- Willingness to compensate decreases when low productivity or high need is self-inflicted

2 Need and Accountability

Replication

- Respondi, online panel, November 2020
- $n = 400$ (stratified as above)
- High and Low Accountability Group (*within subject*)
- Oversupply and Undersupply Scenario (*within subject*)
- 10 (different) Cases

1
Equal Deeds, Different Needs
Need, Accountability, and Resource Availability
in Third-Party Distribution Decisions
Alexander Max Bauer and Jan Romann

I. Introduction

Recently, the eyes of the world have turned to Russia and Ukraine. And to the global oil and gas market. In the wake of the war, prices have surged, and joint European action has been proclaimed, with Commission President Ursula von der Leyen stating that “[w]e must become independent from Russian oil, coal and gas. We simply cannot rely on a supplier who explicitly threatens us with energy supply disruptions. We must diversify our energy prices, diversify our gas supply for next winter and accelerate the clean energy transition” (European Commission 2022, par. 3). With or without secured supplies, the next winter is coming. And some people suddenly find themselves wondering: “What would I do if I couldn’t afford heating during winter?”

In the vignette study presented below, we look at two hypothetical persons, both facing a shortage and in need of cutting some wood. In this situation, they get the opportunity to chop their own firewood. Both manage to chop an equal amount of wood. Our subjects’ task, then, is to redistribute this wood among both persons in a way they deem to be most just. They can give each person exactly what they have chopped, resulting in an equal share. But: While both persons have chopped equally much, there are factors present that might lead subjects to distribute the wood unequally; nevertheless, this is both a common and interesting finding (i.e., they can need the wood for different purposes), which may seem to be differently important: Should a person who needs the wood to survive get more than a person who needs the wood to make art in their studio? And if one person needs more than the other, should it make a difference

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Bauer and Romann 2024

3 Kinds of Needs

3 Kinds of Needs

Background

- Philosophical and psychological literature distinguishes between different kinds of needs
- What role do different kinds of needs play for impartial observers (Study 1) and decision-makers (Study 2)?

PLOS ONE

RESEARCH ARTICLE

Winter is coming: How laypeople think about different kinds of needs

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* These authors contributed equally to this work.

<https://doi.org/10.1371/journal.pone.0260523>



Abstract

Needs play a key role in many fields of social sciences and humanities, ranging from economic theory of distributional justice to conceptions of the welfare state. Over time, different conceptions of what counts as a need (e.g., what is considered a reasonably relevant need) have been proposed. Many of them include (in one way or the other) needs for survival, health, and well-being. In this study, we investigate how laypeople think about different kinds of needs and evaluate it in terms of their significance for distributive justice. To begin closing this gap, we investigate the role of the four aforementioned kinds of needs for impartial observers. We did so in two empirical studies. The first study asks participants to evaluate the importance of different kinds of needs for impartial observers. The second study asks participants to imagine they have to make a distributional decision. Results further support the hypothesis that people consider different kinds of needs differently. Participants also report that they would like to make more consistent decisions in the first study and, additionally, reveal that participants benefit to make coherent allocations in the second study.

Introduction

Imagine you were living in a cottage located exclusively by themselves. Spring has given way to summer, summer has given way to autumn – and temperatures are starting to fall. What do you do? You might start to feel cold, and you might start to feel uncomfortable. You might even feel that you would get on cold in your bed if you would probably spend the night there.

In this case, your physical integrity – something that pretty much all audience can agree counts as a basic need – is severely threatened. Such needs have played a role in philosophy since antiquity (see, e.g., [1]), who interpreted Aristotle's reflections on distribution in his *Nicomachean Ethics* as a defense of the concept of basic needs. In the Christian tradition, the concept of basic needs is described (see [2], p. 1412) and [3], p. 1032); and they have exerted a huge influence on the history of thought (Christianity, e.g., see [4]). In the last century, particularly after World War II, and especially in the United States, the concept of basic needs became increasingly popular among other fields, found new interest in the topic (for perspectives from philosophy,

PLOS ONE | <https://doi.org/10.1371/journal.pone.0260523> November 27, 2023

1/16

Bauer et al. 2023

3.1 Study 1

3.1 Study 1

Design and Implementation

- Respondi, online panel, February 2021
- $n = 100$ (stratified as above)
- Impartial observers
- 4 Kinds of Needs (*within subjects*)
- 4 Cases

3.1 Study 1

Vignette (1/5)

"Please imagine four people with the names A, B, C, and D. All are in need for wood. They need the wood for different reasons. On this page, we present to you the different reasons for which A, B, C, and D need the wood. On the following pages, you will be asked how important it is that the respective person's need is met."

3.1 Study 1

Vignette (2/5)

"A needs the wood to make sure to survive the coming winter. If A receives less than he needs, it will be so cold in his hut that he is very likely to become life-threateningly ill. The less wood he receives, the higher the probability that he will become life-threateningly ill."

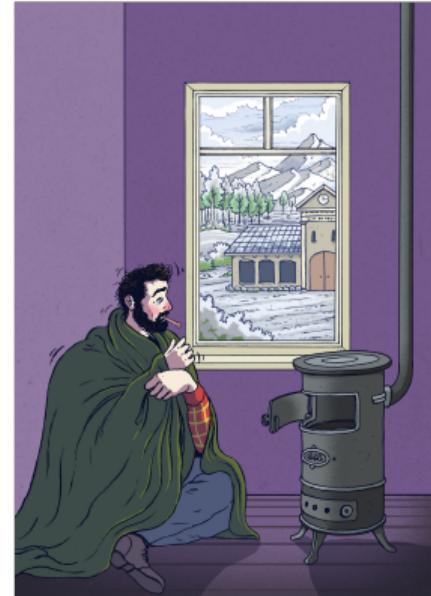


Illustration Survival

3.1 Study 1

Vignette (3/5)

"B needs the wood in order not to freeze in the coming winter. The members of the community to which B belongs agree that one cannot live in dignity if one has to freeze. If B receives less than he needs, it becomes unacceptably cold in his hut. The less wood he receives, the more often he will freeze."



Illustration Decency

3.1 Study 1

Vignette (4/5)

"C needs the wood to be able to participate regularly in the social life of his community in the coming winter. It is common practice to meet at the community center and everyone brings wood with which to heat it. If C receives less than he needs, he will not be able to participate regularly in the social life. The less wood he receives, the less often he will be able to come to meetings at the community center."



Illustration *Belonging*

3.1 Study 1

Vignette (5/5)

"D needs the wood to be able to use his studio regularly in the coming winter. He creates art there in his spare time. If D receives less than he needs, he will not be able to use his studio regularly. The less wood he receives, the less often he will be able to create art in his studio."



Illustration *Autonomy*

3.1 Study 1

Task

Bitte geben Sie an, für wie wichtig Sie die folgende Art von Bedarf halten, die Weber mithilfe von Feuerholz decken kann.



Weber benötigt das Holz, um nicht lebensbedrohlich zu erkranken.

Wie sehr braucht Weber das Holz in diesem Fall? Bitte geben Sie Ihre Antwort auf der folgenden Skala von 1 ("Braucht das Holz überhaupt nicht") bis 7 ("Braucht das Holz unbedingt").

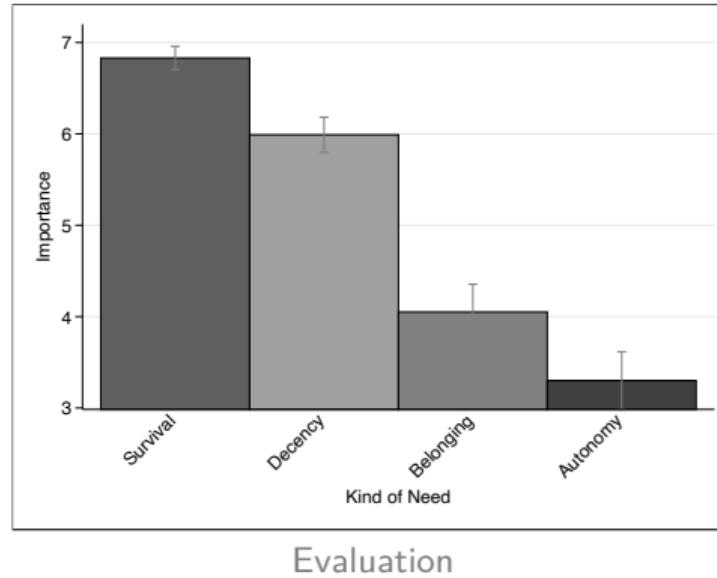
1 – Braucht das Holz überhaupt nicht
 2
 3
 4
 5
 6
 7 – Braucht das Holz unbedingt
 Keine Antwort/weiß nicht

[Weiter](#)

Evaluation Task Survival

3.1 Study 1

Results (1/2)



3.1 Study 1

Results (2/2)

- Impartial observers assign different levels of importance to different kinds of needs
- Survival > Decency > Belonging > Autonomy

3.2 Study 2

3.2 Study 2

Design and Implementation (1/2)

- Respondi, online panel, April 2021
- $n = 200$ (stratified as above)
- Impartial decision-makers
- 4 Kinds of Needs (*within subjects*)
- 2×7 Cases (*within subjects*)
 - 6 Mixed Cases
 - 1 Paired Case
- 2 Productivity Scenarios (*within subjects*)
 - Equal Productivity Scenario ($A = B = 500$, $A + B = 1.000$)
 - Unequal Productivity Scenario ($A = 200$, $B = 800$, $A + B = 1.000$)
- Enablement and Avoidance Formulation (*between subjects*)

3.2 Study 2

Design and Implementation (2/2)

	Case					
	1	2	3	4	5	6
A	Survival	Survival	Survival	Decency	Decency	Belonging
B	Decency	Belonging	Autonomy	Belonging	Autonomy	Autonomy
Mixed Cases						

3.2 Study 2

Vignette (1/3)

“Please imagine two people with the names A and B. A and B do not know each other. Both are in need of wood. The community of A and B allows them to chop wood in the community forest for a certain period of time. Both have little money and therefore have no other way to get wood.

On the coming pages, we will present you with a total of 14 cases where A and B need the wood for different reasons. On each page, we will tell you what A needs the wood for and what B needs the wood for. You will then be asked to divide the wood as fairly as possible between A and B.”

3.2 Study 2

Vignette (2/3)

"Please note that you have to make the following trade-off: The more wood you give to one person, the less you can give to the other. It is not possible to completely meet the needs of both people at the same time. In each of the 14 cases, the available amount of wood will only be enough to completely cover the needs of one of the two people; the other person would then go away empty-handed.

We now present to you the four different reasons for which A and B may need the wood. These four reasons have to do with the coming winter. Since you need to distribute the wood in advance without knowing exactly how cold the winter will be, we describe the expected effects of the winter on the people as more or less likely.

Please read the descriptions of the four reasons carefully."

3.2 Study 2

Vignette (3/3)

- Same illustrations as in Study 1
- Slightly altered descriptions compared to Study 1

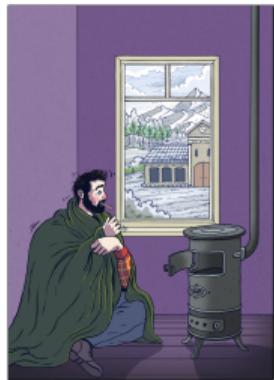


Illustration
Survival



Illustration
Decency



Illustration
Belonging



Illustration
Autonomy

3.2 Study 2

Task

Szenario 2, Situation 2

Schneider hat 800 und Meyer hat 200 Holzscheite geschlagen. Beide Personen haben also zusammengerechnet 1000 Holzscheite geschlagen. Bitte nehmen Sie in den freien Feldern unten diejenige Verteilung auf beide Personen vor, die aus Ihrer Sicht am gerechtesten ist.



The image contains two side-by-side illustrations. On the left, Schneider, a man with a beard wearing a plaid shirt and overalls, stands by a red wall looking out a window at a snowy landscape. A small wood stove sits on the floor next to him. On the right, Meyer, another man with a beard wearing a plaid shirt, sits on a chair by a blue wall looking out a window at the same snowy landscape. A small wood stove sits on the floor next to him.

Schneider benötigt das Holz, um im Winter nicht vom sozialen Leben ausgeschlossen zu sein.

Schneider soll _____ Holzscheite erhalten.

Meyer benötigt das Holz, um im Winter nicht zu frieren.

Meyer soll _____ Holzscheite erhalten.

[Weiter](#)

Distribution Task *Belonging – Decency*

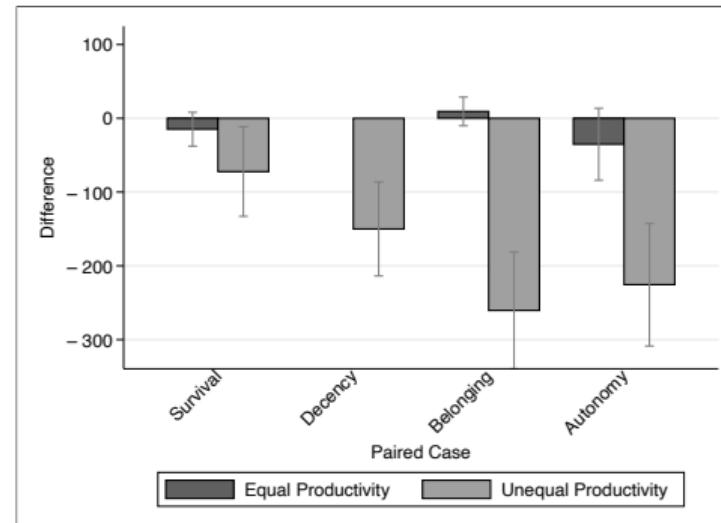
3.2 Study 2

Results (1/4)

$$\Delta_{\alpha,\beta} = \gamma_A - \gamma_B$$

3.2 Study 2

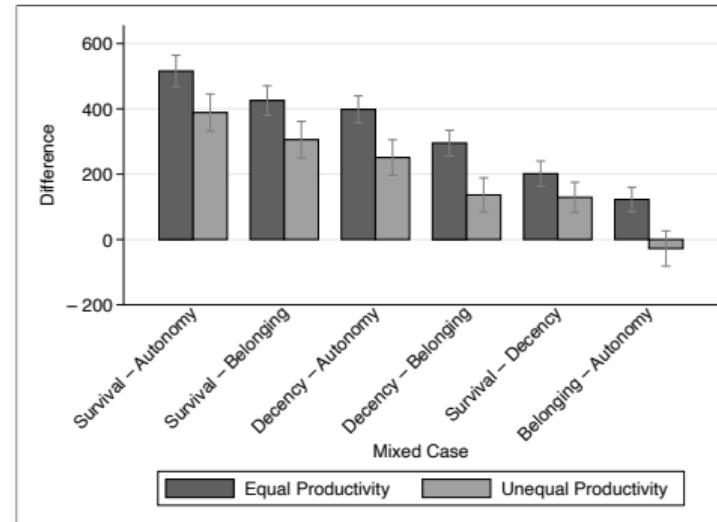
Results (2/4)



Differences of Paired Cases

3.2 Study 2

Results (3/4)



Differences of Mixed Cases

3.2 Study 2

Results (4/4)

- Impartial **decision-makers** assign different levels of importance to different kinds of needs
- Survival > Decency > Belonging > Autonomy
- Decisions are influenced by productivity

4 Summary of Key Results

4 Summary of Key Results

Need as Reference Point

- (1) Impartial observers make gradual justice evaluations
- (2) Evaluations depend on supply situations
- (3) Evaluations are influenced by information on need

4 Summary of Key Results

Need and Accountability

- (4) Impartial decision-makers take need, productivity, and accountability into account
- (5) Even in cases of low productivity, need is partially compensated
- (6) Willingness to compensate decreases when low productivity or high need is self-inflicted

4 Summary of Key Results

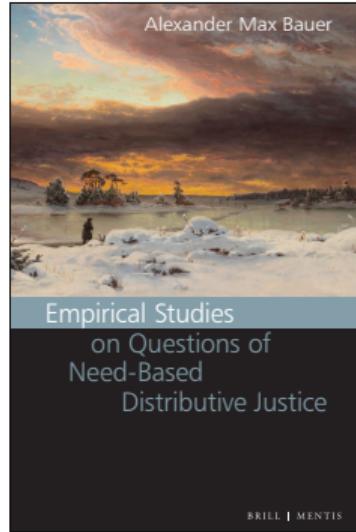
Kinds of Needs

- (7) Impartial observers and decision-makers assign different levels of importance to different kinds of needs
- (8) Survival > Decency > Belonging > Autonomy

If You Want to Dive Deeper...



Bauer and Siebel 2024



Bauer forthcoming

Thank you for
your attention!



Literature

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