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An Experiment on Information and Need-based
Justice

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An Experiment on Information and Need-based Justice**

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Abstract

The need principle suggests that resources should be distributed according to individual needs that are recognized by society. Empirically, however, it is often difficult to apply the need principle, since individual needs may be heterogeneous and unknown to others. We study the effect of information about others' need levels on the allocation of an endowment in a network exchange experiment in the laboratory. Need levels are either transparent to all network members or opaque and only known to subjects themselves. We expect need levels and structural power to interact with the transparency of needs and jointly affect individual need satisfaction. The results suggest that subjects in the agreeing dyad can enforce their needs even when the information about needs is opaque, while the needs of the remaining, weak network member are more often satisfied when needs are transparent. However, the average payoff of subjects outside the dyad is higher when needs are opaque, because decision-makers reduce allocations to outsiders when they know that their needs are low. Therefore, our experiment reveals a potential downside of need-based justice: Need levels may be instrumentalized by decision-makers to justify lower and unequal allocation shares for structurally weak group members.

1. Introduction

Societies are confronted with distribution problems in manifold ways, which ultimately boil down to the problem of defining a criterion for the fair distribution of resources. Among these criteria, need-based justice constitutes one of the major principles of distributive justice (Traub & Kittel, 2020). According to the need principle, a distribution of resources is just if it satisfies the basic needs of its members (Konow, 2001). Rawls (1971), for example, argues in his theory of justice that the distribution of resources should be guided by what people need in their capacity as free members of a society. In a similar vein, several philosophers have sought to identify generally acceptable minimum levels with respect to various capabilities in human life that they consider necessary for human dignity (Nussbaum, 2011; Sen, 1985). While the exact nature of these capabilities is disputed on a normative level, the idea that “all should get above a certain threshold level of combined capability” (Nussbaum, 2011, 24) is hardly contested from the perspective of equal human dignity.

In order to put this maxim into practice it is necessary for decision makers to know the amount of a resource which others need for reaching the threshold. However, people are diverse and for that reason require different amounts of resources to satisfy their needs which are often not known to others. Rawls (2005, 184) posits that humans vary in at least four dimensions – moral and intellectual capacities and skills, physical capacities and skills, conceptions of the good, and tastes and preferences (also see, for example, Sen, 1990). Variations in these dimensions determine what people consider as their needs, which translates into different demands for resources, which we call need claims. To determine how much a person needs to ‘have enough’ one must ultimately assess the difference between the initial, individual capabilities and the socially defined ‘acceptable minimum’ capabilities. Yet, “[c]alculating the size of an equal share of something is generally much easier – a more straightforward and well-defined task – than determining how much a person needs of it in order to have enough” (Frankfurt, 2015, 15).

In short, applying the need principle in practice requires people to know the appropriate need claim, i.e. the amount of resources needed to lift initial capabilities to minimal capabilities. When this information is only available to the individual themselves, it gives rise to moral hazard problems and can hamper the application of the need principle. The literature has identified two main mechanisms for overcoming this obstacle and qualifying varying need claims. In small, integrated and cohesive groups such as families (Liebig & Sauer, 2016), people are well-informed about each other’s living conditions and are able to mutually evaluate respective needs, identify the threshold at which the need is satisfied and determine the amount of a resource that is required to satisfy the need. In larger, anonymous collectivities such as whole societies, access to social welfare and poverty relief programs is often made contingent on formal procedures that test individual claims against some exogenously determined reference level of need satisfaction (Van Oorschot, Roosma, Meuleman, & Reeskens, 2017). Both mechanisms aim to facilitate the *transparency* of needs. Nevertheless, in many cases it can remain difficult or even impossible to objectify individual need claims.

Hence, the transparency of individual need claims can play a key role in the distribution of resources according to the need principle. The need satisfaction of weak members of society, i.e. group members in weak structural positions who have little influence on distributive decisions or group members with relatively high need claims, might be especially contingent on the transparency of their need thresholds. The need principle is likely to have its full normative effect when need thresholds are transparent, thereby, helping to efficiently distribute finite resources. At the same time, transparency may also engender costs associated with exposing individual information (Etzioni, 2010). Making need claims fully transparent requires trust on the part of the needy, which might be abused for egoistic purposes by others.

In this paper, we aim to study the consequences of the transparency of individual need claims on distributive decisions. Following the threshold paradigm for laboratory experiments on need-based justice introduced in Kittel, Neuhofer, and Schwaninger (2020), we transfer the idea of thresholds for survival (Nussbaum, 2011) to the laboratory setting and randomly assign individual need thresholds in small networks. These thresholds must be satisfied during an initial network-bargaining stage before subjects proceed to a second stage in the experiment in which they can earn additional income.¹ The need thresholds reflect the difference between an individual's initial endowment and the individual's socially recognized minimum required for survival. In its general conception, the threshold is identical for all members of an equal society, that is, it should not vary over socio-economic, demographic or cultural dimensions. Yet, initial, individual endowments differ between members for various, e.g. biological, psychological, historical, reasons. The differences in initial endowments are difficult to measure objectively outside the laboratory and, as discussed above, are often only known to the individuals themselves. In this study we operationalize the difference in initial individual needs as a *difference of need thresholds* (referred to as 'need levels') to study the basic relation between transparency of need levels and distribution decisions.

Furthermore, we utilize the social exchange framework (Willer, 1999) to induce structural inequalities, beyond the heterogeneous need thresholds, which induce inequalities with respect to the individual need claims. The subjects interact in a so-called three-line network structure, which allows one subject, the broker, to form a dyad with one of two other subjects, who themselves cannot interact with each other. Forming a dyad allows the subjects to distribute the available resources among the three network members. Only one of the two other subjects can become a partner in the dyad, which makes the third subject the outsider of the dyad, whose payoff share is fully dependent on the agreeing dyad. Hence, the three-line network assigns different levels of structural power to influence the distribution of resources.

¹ This design would also be suited to studying problems related to equality of opportunity (Arneson, 2015; Cohen, 1989). Need-based justice and equality of opportunity describe the same phenomenon from two different perspectives. Whereas the former focuses on the conditions, the latter focuses on the consequences of satisfying some threshold.

Within this framework, we vary the information available about others' need levels between two treatments. Whereas in one treatment the need levels of all network members are *transparent*, that is they are public information or "common knowledge", they are *opaque* in the other treatment, that is, information about individual need thresholds is private. In the opaque treatment, subjects may infer their interaction partners' need levels from their allocation proposals, which are unreliable, however, because they may only be strategic. We compare distributive decisions with and without information about others' need thresholds and test the effect of transparent need levels on distributive outcomes. Furthermore, we examine the variation in the impact of transparent need thresholds on need satisfaction depending on the structural power and different need levels of the network members. We find that, overall, the rate of need satisfaction is significantly higher when thresholds are transparent than when they are opaque. Yet, when need thresholds are transparent, individuals with low need levels receive smaller – albeit need-satisfying – shares of the resource, whereas in the opaque condition the overall distribution moves towards equal sharing. A notable cumulation of disadvantages occurs when information is private and the outsider's need level exceeds the focal point of networkwide equality.

The remainder of the paper is structured as follows. In the second section we provide an overview of the related literature, and develop the analytical framework and our hypotheses. In section 3 we present the experimental design to test our hypotheses. In section 4 we discuss the findings, and section 5 provides a conclusion.

2. Satisfying Needs: The Problem of Transparency

While the need principle has an intuitive appeal in many contexts, a distribution according to needs is often ambiguous (Frankfurt, 2015). The reason for this is that needs are difficult to specify (Dean, 2010) in at least two ways. Firstly, which kind of needs should be socially recognized (Brock, 2013; Nussbaum, 2011; Reader, 2006)? For instance, one might ask whether a smartphone should be considered a necessity in the 21st century to fully participate in society, and whether this leads to a valid need-claim entailing that a just society has to provide smartphones to all its members according to the need principle. Since the social recognition of needs depends on social, economic, technological, cultural and historical contexts, it is impossible to provide a complete and perpetual list of needs, despite comprehensive efforts such as the United Nation's Human Development Index (UNDP, 2020) or reference budgets for minimum income standards (Deeming, 2020). Therefore, Nussbaum (2006) argues for a *context-specific* discussion of thresholds as a set of *capabilities*, in contrast to a universal list of goods or services.

A second major complexity of the need principle originates from the ambiguity of the amount needed, even when it is clear what is socially recognized. There are cases where we can objectively determine the needs of others. For example, when mobility is a recognized need, we can objectively measure the resources needed to enable people to walk. Most people do not need any resources and are able to walk on their own, some elderly people might need a

walking aid or a wheelchair and someone who lost a leg may need a prosthesis. In other words, people are in different original states and some need more of a resource or different means to reach a desired state and others need less to reach the same state. In this instance, decision-makers can distribute resources in a way that ensures that each person receives the necessary means to move. However, in most cases the exact need is known only to individuals themselves. Since people often have different needs to reach a goal, i.e. need different “things” to participate (Brock, 2013), possibilities to objectively define a need-based distribution are limited. For example, defining a general threshold for minimum nutritious intake does not tell us how much a specific person needs to eat to avoid feeling hungry. People are different and have different thresholds for satisfying the same needs, and these thresholds are often not transparent to others.

This second problem has received hardly any attention in the literature. To the best of our knowledge the impact of the transparency of needs on the satisfaction of needs has not been empirically studied so far. Yet, transparency of needs can have important theoretical and practical implications for the implementation of the need principle.

2.1 Transparency

Transparency in general is a highly debated topic in politics and societal processes alike, whereby most of the literature on transparency is focused on the macro and meso level of society (August & Osrecki, 2019, 2). The field is far from united in its assessment of the benefits and harms of transparency. Proponents of transparency highlight the potential of better (and more rational) decision making based on extensive information about the substance, conditions and implications of a decision. Building on Bentham’s ideas about transparent governance, which have been further developed in public choice theory, August and Osrecki (2019, 6) summarize the core benefits of transparency at the societal level as follows: “On the one hand, transparency would provide accountability, leading to the apt behaviour of elites. On the other hand, it would provide the members of society with the information necessary to make reasonable choices and create more rational decisions.” Opponents, in turn, caution against unintended side-effects and the “tyranny of transparency” (Strathern, 2000) hitting individuals and organizations alike in the form of over-bureaucratization and undermining important tasks of the state.²

Historically, the meaning of transparency has also been elaborated at the micro level of social interaction. In the Rousseauian tradition the term refers to “the ‘honesty’ and immediate accessibility of someone’s ‘true’ beliefs and essence”, although “with the experiences of totalitarianism that infused Western societies with a horrific image of transparent individuals [...] norms, practices, and structures of (inter-)personal observability are usually not framed in terms of transparency” (August & Osrecki, 2019, 23-24). At the micro level, transparency is thus a double-edged social mechanism, albeit with a different twist than at the macro level.

² For example, secret services conventionally cannot operate in the open without compromising themselves and others. Transparency may also endanger dissidents in autocratic political systems.

On the one hand, it is exactly the availability of reliable information about others' behaviour and the intentions underlying this behaviour that facilitates the development of mutual trust. Trust, in turn, fosters mutual solidarity and societal cohesion. On the other hand, transparency can be a means of control and repression that also undermines the development of trust, solidarity and social cohesion.

2.2 *The need principle and transparency*

Recent experimental evidence suggests that subjects allocate resources according to the need principle when heterogeneous needs are transparent and subjects are sufficiently motivated by social value orientations (Kittel et al., 2020). Hence, subjects use randomly assigned needs, operationalized as a threshold for a specific aim, as focal points and distribute available resources in the laboratory accordingly. Needier subjects also receive larger shares of the resource in hypothetical situations (Gaertner & Schokkaert, 2012; Konow, 2001), thirstier subjects receive more water (Kause, Vitouch, & Glück, 2018) and cues informing decision-makers that recipients are "poor" increase monetary transfers (Brañas-Garza, 2006; Cappelen, Moene, Sørensen, & Tungodden, 2013; Holm & Engfeld, 2005; Smeets, Bauer, & Gneezy, 2015). Even in the absence of cues about the neediness of recipients, several studies find that subjects agree on distributions that maximize allocations but provide at least a minimum floor to each group member (Esarey, Salmon, & Barrilleaux, 2012; Kittel, Kanitsar, & Traub, 2017). This floor may be interpreted as a form of recognition of needs (Brock, 2013). However, while the latter studies underline the popularity of a uniform floor constraint, it remains unclear how people deal with heterogeneous needs to reach this floor and how important transparent information about the need levels is for their satisfaction.

In other domains such as the transparency of political processes, problems arise when information has strategic value and actors can benefit from information that is not transparent to others.³ In contrast, in the context of the need principle, the evidence cited above suggests that subjects benefit from transparently indicated needs. When the need principle has a normative effect on the distribution of benefits, the problem is not that actors try to hide their needs, but rather that they want to highlight their needs but might not be able to *sufficiently substantiate their claim* when they expect to receive need-based benefits.

Suppose, for example, decision makers must distribute limited resources among a group of people. If needs are not transparent to them they cannot know a priori how to distribute resources according to the needs of each member. One potential way out of this problem may

³ Transparency may also relate to *private information about the decision situation*: In decision contexts that involve risk regarding the outcome, information about the payoffs in a coordination game fosters coordination on the efficient equilibrium when the latter is risk-dominant (Anctil, Dickhaut, Johnson, & Kanodia, 2010). Other strands of the literature focus on *transparency in principal-agent relationships* (Prat, 2005) or on the *visibility of behavior to a third agent* (Fehrler & Hughes, 2018). In game theory, the publicity of information is discussed under the heading of common knowledge, which has been one of the basic assumptions in classical approaches, and the problem of asymmetric information has motivated the development of a class of models which describe how inferences about the state of the world can be made from others' behavior (Banks, 1991). In this paper, however, we are not interested in the strategic dimension of the publicity of information.

be to rely on people's individual need claims. This implies that the decision makers must trust recipients to provide this information truthfully. Trust, however, is difficult to build in this situation, because it can be easily exploited by recipients to increase their own benefits. In short, when needs cannot be objectively measured and verified by others, the distribution to each according to her or his needs is subject to the risk of excessive claims, which may lead to situations entailing common pool resource problems and potential depletion of the resource (Hardin, 1968; Ostrom, 1990).

2.3. Determinants of need satisfaction

The preceding section about the role of transparency for the applicability of the need principle suggests that transparency of need levels can be important for potential recipients of benefits. However, the level of importance can be qualified. First, some subjects in a society or group have more influence than others on the distribution of resources. When the decision is left to single decision-makers, who can freely distribute resources among themselves and others, these persons are clearly not dependent on the knowledge of others about their initial situation. For such persons it would be sufficient to know their own needs in order to satisfy them. Analogously, the dependency of a person's need satisfaction on the transparency of needs to others may depend on his or her decision-making power. Second, the transparency of needs may be less important for people with a low need claim relative to the available resources. In particular, subjects whose need claims are low in comparison to the need claims of other group members may be less dependent on the transparency of needs because their need claim is more relatable for the majority of people. Therefore, we identify three structural conditions that are expected to moderate the importance of transparency for the satisfaction of needs: The distribution of structural power between the nodes of the network structuring a group, the distribution of need claims relative to the available resources, and the distribution of need claims relative to each other.

In order to integrate and analyse the effect of structural power, we draw from Social Exchange Theory (SET) (Cook & Chesire, 2013; Emerson, 1972a, 1972b). SET predicts that people can use their structural power to impose self-serving allocations (Cook & Chesire, 2013; Neuhofer, Reindl, & Kittel, 2015; Willer & Emanuelson, 2008). For example, according to the network-control bargaining model (Braun & Gautschi, 2006), members in a three-line network will settle on 87 percent of the available resources for the broker, 13 percent for the partner and nothing for the outsider. Evidence from laboratory experiments support the expectation that individuals can use their structural advantages to increase their own payoffs in negatively connected negotiation networks – the most prominently examined form of exchange (Cook & Emerson, 1978; Molm, 2014; Molm & Cook, 1995). Introducing social values, however, shifts outcomes toward a more egalitarian distribution (Lewis & Willer, 2017; Schwaninger, Neuhofer, & Kittel, 2019; Willer, Gladstone, & Berigan, 2013). Nevertheless, we expect that the transparency of needs is more important for subjects with lower structural power.

The second structural factor determining the application of the need principle is the distribution of need thresholds. When individual need thresholds are relatively high compared

to the available resources or compared to the average need level in the society, others are less likely to fulfill those needs because people dislike disadvantageous inequality (Kittel et al., 2020). Evidence from laboratory experiments also shows that subjects rarely allocate more than an equal allocation of an endowment when incentives, such as earned endowments, are not given to depart from this distribution (Cooper & Kagel, 2016; Konow & Schwettmann, 2016, 86). Social preference models explaining these results assume that observing others receiving a larger share of a resource than oneself induces stronger negative feelings than observing others receiving less than oneself (Fehr & Schmidt, 2006). Accordingly, the willingness to satisfy others' needs depends on their need levels relative to the subject's own allocation. Equal distribution is a prominent *focal point* in this respect: When the satisfaction of others' needs requires a larger allocation to them than to oneself, the willingness to agree to such a distribution will be negatively affected by envy (Kittel et al., 2020). Consequently, the probability that needs are satisfied declines with an increasing need threshold, particularly when it exceeds the equal allocation.

Arguably, the negative effect of need thresholds above the focal point of equality increases even more when thresholds are not transparent. According to the model of frame selection (Esser & Kroneberg, 2015) people use situational frames and action scripts to reduce the complexity of social reality and then choose behaviour from a set considered appropriate in this context. Hence, observable, heterogeneous need thresholds may serve as focal points for allocations that deviate from equality. Absent transparency of needs these cues are missing and uncertainty about others' needs can create "moral wiggle room" for self-regarding behaviour (Dana, Weber, & Xi Kuang, 2007). The absence of information is used to justify other, potentially self-serving, distributive outcomes. Furthermore, people are different and taking the position of another person is challenging. In particular, it may be difficult to imagine that someone else requires more resources to satisfy a specific need than oneself if the need threshold is not observable. Moreover, inequality-averse actors may disregard needs in favor of equality of outcomes. Strict adherence to such a myopic equality principle will not satisfy the need thresholds of others if these exceed the equal distribution. In the absence of evidence of objective need thresholds, there is no convincing justification to deviate from equality. Therefore, we expect that non-transparent (opaque) need thresholds reduce allocations to subjects with high need thresholds.

In sum, this leaves us with three hypotheses about the effects of transparent needs – one about the main average effect and two about structural conditions that moderate this effect. In the following section we outline our strategy to test these hypotheses.

H1: Need thresholds are more likely to be satisfied in the transparency condition than in the opacity condition.

H2: The negative effect of opacity of need thresholds on the satisfaction of needs is stronger in weak bargaining positions.

H3: *The higher the need threshold, the larger the negative effect of opacity of need thresholds on the satisfaction of needs.*

3. Experimental Design

We utilize the experimental threshold paradigm developed in Kittel et al. (2020) to study the basic relationship between the transparency of heterogenous needs and need satisfaction. To examine the effect of information about individual need thresholds of network members on distributive outcomes, the experiment employs two between-subject treatments: In the transparency (T) treatment information about all need levels is publicly available. In the opacity (O) treatment information about need levels is private.

Figure 1 displays the procedure and treatment variations of the experiment. In total, participants interacted in seven periods. Each period varies the need threshold levels. A period consists of two stages. In stage 1, subjects bargain over the distribution of a collective endowment provided by the experimenters. Subjects have heterogenous thresholds that they have to satisfy in order to be admitted to stage 2. In stage 2, subjects can earn additional payoffs by performing a set of real-effort tasks to generate earned endowments.⁴ This payoff is added to the profits obtained in stage 1. Subjects whose threshold is not satisfied are offered the opportunity to perform the tasks administered in stage 2 in order to remain busy but they cannot generate additional payoffs from this activity.

Figure 1. Flow-chart of experimental design

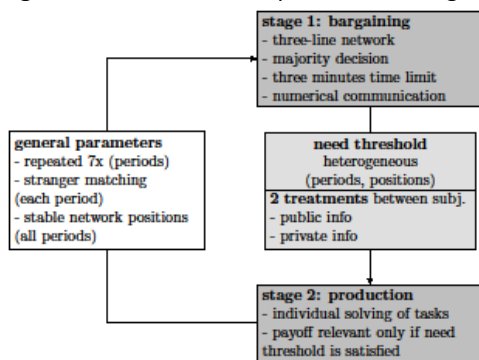
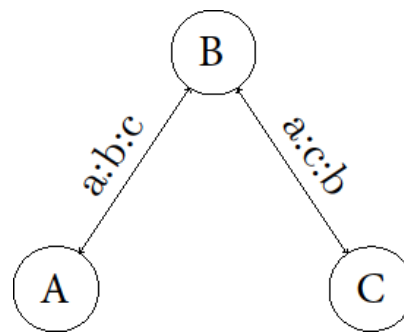


Figure 2. Three-line network (Stage 1)



3.1 Dyadic network bargaining

Each experimental session consists of 24 subjects. At the beginning of each period, participants are randomly assigned to groups of three to form a three-line network (Figure 2). The three-line network implies that not all positions can send offers to each other. One subject (B) is connected to two other subjects (A and C), who are not connected to each other, resulting in the 3-line network form A-B-C (Willer, 1999). Due to the structure of the network, bargaining position B is more powerful than A and C, since B is necessary to form a dyad.

⁴ We use common/standard [choose one] tasks for generating earned endowments in laboratory experiments, such as math problems, trivia questions and simple counting of displayed objects.

Therefore, we refer to subject B as the *strong network member* and to subjects A and C as the two *weak network members*. This bargaining structure generates the distinct game theoretic prediction that strong network members should obtain the majority share of the payoff (Braun & Gautschi, 2006) and allows us to distinguish between the two subjects that form the agreeing dyad based on their structural position. In a dyad, subject B is the *strong dyad member*. The partner of subject B in the agreement, either subject A or C, is the *weak dyad member*. The remaining third subject is the *outsider*.

In the first stage, subjects bargain over the distribution of 24 points among the three members of the network. The points have two values to the participants. On the one hand, they are converted into money and paid in cash to the subjects at the end of the experiment. On the other hand, they determine whether the subject can earn additional money in the second stage, which we will explain in more detail below.

The three network members bargain in dyads about the distribution of payoffs. When a dyad agrees on a distribution of the 24 points amongst the three network members, this distribution is implemented (see the Instructions in the Appendix for a screenshot of this stage). The network members communicate bilaterally by sending numerical distribution offers via the computer interface. In other words, subjects can only propose and receive offers that are less than 24 points, whereby any distribution in non-negative integers is admissible, but cannot be communicated verbally.⁵ In each period, subjects can send as many offers and counteroffers as they choose. In this sense, the bargaining protocol is not strictly structured. An agreement is reached when the recipient of a proposal accepts this offer by clicking on the “accept” button. Subjects must reach an agreement within three minutes, or else all three network members receive zero points. After an agreement, all network members are informed about the bargaining outcome and stage 1 ends.

Participants are randomly and anonymously re-matched to new networks in each period to avoid the development of personal reputation and longer-term partnerships. Bargaining positions, however, stay constant throughout a session: Subjects who are randomly selected into bargaining position B in the first period remain in this position for the entire session to avoid the development of reciprocity or insurance motives between subjects.

3.2 Need levels

Need levels are numerical thresholds assigned to every subject in each period. The thresholds indicate the minimal payoff share needed from the distribution task to receive payments from the real-effort task (stage 2). In treatment T, the need thresholds of all subjects in the network are public information and displayed on the computer screen. In treatment O, this information is private such that subjects can only see their own threshold displayed.

⁵ We prevent other forms of communication in order to control for individual attributes, such as verbal arguing and bargaining skills or personal affection, which might affect the outcome.

Table 1. Need thresholds across positions and periods

Period	Experiment 1 (Vienna)						Experiment 2 (Hamburg)						
	Need thresholds						Need thresholds						
	A	B	C	Σ	Diff	N (network)	A	B	C	Σ	Diff	N (network)	
1.	0	5	9	14	9	32+32	1	5	1	7	4	32+32	
2.	9	1	5	15	8	32+32	9	5	5	19	4	32+32	
3.	1	5	12	18	11	32+32	5	5	12	22	7	32+32	
4.	5	9	1	15	8	32+32	5	5	1	11	4	32+32	
5.	0	0	0	0	0	32+32	12	5	12	29	7	32+32	
6.	9	5	1	15	8	32+32	9	5	9	23	4	32+32	
7.	5	5	5	15	0	32+32	5	5	5	15	0	32+32	
Total number of network-level observations:						224+224							224+224

Note: In total, 384 subjects (192 subjects per city) participated, which equals 64 observations, i.e. 32 observations in treatment O and 32 in treatment T, on the network level per period in each city.

The distribution of the thresholds and their levels vary between periods. Table 1 displays the distribution in each period. The two otherwise identical experiments feature different threshold combinations.⁶ In experiment 1 the need thresholds vary across all network members and the sum of thresholds is held constant at 15 points in four of the seven periods. In two additional periods, the threshold of one weak network member is varied to create scenarios with more unequal threshold distributions. In Experiment 2 the threshold of position B is held at a constant level of 5 points and the thresholds of positions A and C vary incrementally.⁷ When analyzing the results, we exclude period 5 of experiments 1 and 2. In experiment 1, the need thresholds in period 5 are all equal to 0 and the thresholds are always satisfied. In period 5 of experiment 2, the sum of thresholds exceeds 24 points and it is not possible to satisfy all need thresholds. These situations are included in the experiment to explore further dynamics beyond the scope of the present paper.

To summarize, the experiment varies the main treatment between subjects and thresholds within subjects as an additional factor. The main treatment focuses on the difference between bargaining outcomes with and without information about the need thresholds of the other network members. Need thresholds were varied across periods to test interaction effects between network position and need level. At the end of each experiment, one out of the seven periods is randomly selected for the payout.

3.3 Social Value Orientations and Justice Attitudes

Prior to the bargaining experiment we measure the participants' social value orientations (Murphy, Ackermann, & Handgraaf, 2011). We do not inform subjects about the results from this task until the very end of the experiment to minimize potential priming effects on the

⁶ We do not randomize the threshold combinations between the sessions since the number of sessions would have been insufficient for a successful randomization, and instead choose a constant sequence.

⁷ Prior to the first period, all subjects participate in a practice period that is not relevant for payoffs to familiarize themselves with the setup.

bargaining game.⁸ After the main experiment participants complete a questionnaire including order-related justice attitudes items from the Basic Social Justice Orientations (BSJO) scale (Hülle, Liebig, & May, 2017) and sociodemographic variables.

3.4 Procedure

We conducted sixteen sessions evenly weighted between all treatments, each consisting of 24 subjects, resulting in a sample of 384 subjects. The experiment is programmed in z-Tree (Fischbacher, 2007). We ran experiment 1 in Vienna at the laboratory of the Vienna Center of Experimental Economics (VCEE) in November 2017. Since we exhausted the subject pool in Vienna with similar experiments, we ran a second set of sessions (referred to as experiment 2) at the WISO laboratory of the University of Hamburg in March 2018.⁹ An experimental session lasted about 1 hour and 40 minutes and the participants earned EUR 22.05 on average, ranging from EUR 8.00 to EUR 40.00.

4. Results

Altogether, 83.4 percent of all need thresholds are satisfied in treatment T and 78.2 percent of all need thresholds are satisfied in treatment O. Relative to the outcome that would be observed if the members of the agreeing dyad were solely motivated by self-interest, namely, a need satisfaction rate of 66.7 percent, these results point to the presence of substantial social value orientations in both treatments (increase of need satisfaction by 16.7 and 11.5 percentage points, respectively). Compared to opaque thresholds, the transparent need thresholds raise the average need satisfaction rate by 5.2 percentage points. A Mann-Whitney-U test on the session level, the independent unit of the observations, supports H1 that need thresholds are more often satisfied when information is public than when it is private (one-sided, $p < 0.01$). The effect is robust across experiment 1 (+4.8 percentage points, $p = 0.02$) and experiment 2 (+5.5 percentage points, $p = 0.06$), but the statistical power decreases due to the smaller number of independent observations.¹⁰ The following analysis shows that the influence of transparency on need satisfaction is considerably larger in specific instances.

4.1 The negative effect of increasing need thresholds

Figure 3 shows the need satisfaction rates across the four implemented threshold levels. As in previous studies, the individual need satisfaction rate (NSR-I) decreases as the thresholds increase. The strongest decrease in the individual need satisfaction rate is observed when the threshold surpasses eight points (one third of the available resource), which amounts to an

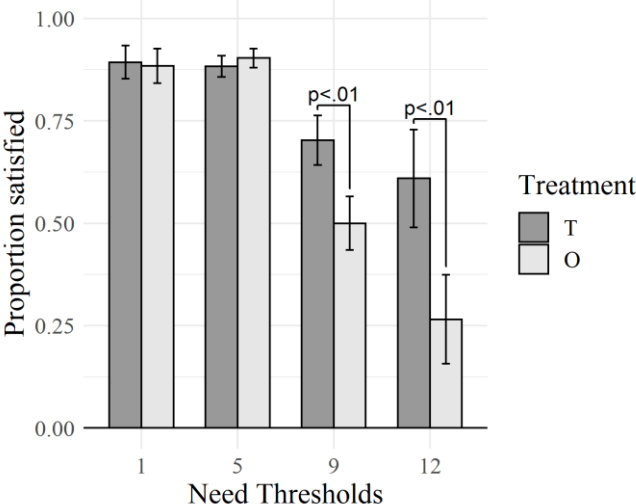
⁸ An alternative would be to administer the social value orientations measure at the end of the experiment. However, this sequence can influence the results of the measure significantly, while the influence of an other-regarding measure on the bargaining outcomes remains insignificant when the experiment reveals the outcome of the measures only at the end of the experiment (Schwaninger, 2021).

⁹ Table A1 in the Supplementary Materials provides an overview of the demographic data of the subjects in the sample. VCEE uses ORSEE (Greiner, 2015) and the WISO laboratory uses hroot (Bock, Baetge, & Nicklisch, 2014) to recruit participants.

¹⁰ Tables A2-A7 in the Supplementary Materials show the results broken down for each scenario.

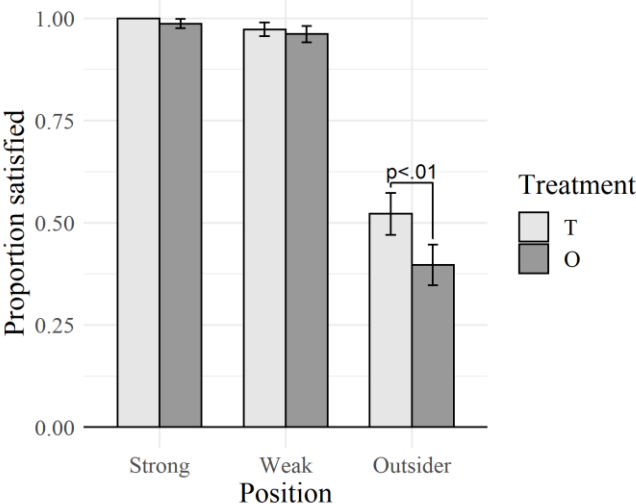
equal share of the available payoff. Furthermore, NSR-I decreases at a steeper rate when the information about the need thresholds is private. In comparison, there is a difference of 20.3 percentage points for a threshold of 9 (test of equal proportions, henceforth prop. test, $p < 0.01$) and a difference of 34.4 percentage points for a threshold of 12 (prop. test, $p < 0.01$).¹¹ These results support H2 that the negative effect of private information about needs is stronger for higher threshold levels. To specify, the difference between treatment T and treatment O in the individual need satisfaction rate is only observable for need thresholds above the equal share of payoffs.

Figure 3. Need satisfaction across threshold levels, all players



'p' refers to the p-value of a test of equal proportions.

Figure 4. Need satisfaction across bargaining positions



'p' refers to the p-value of a test of equal proportions.

¹¹ All tests remain robust when we aggregate the data on the session level and then perform Mann-Whitney-U tests, albeit the statistical significance is generally a little lower due to the lower number of observations.

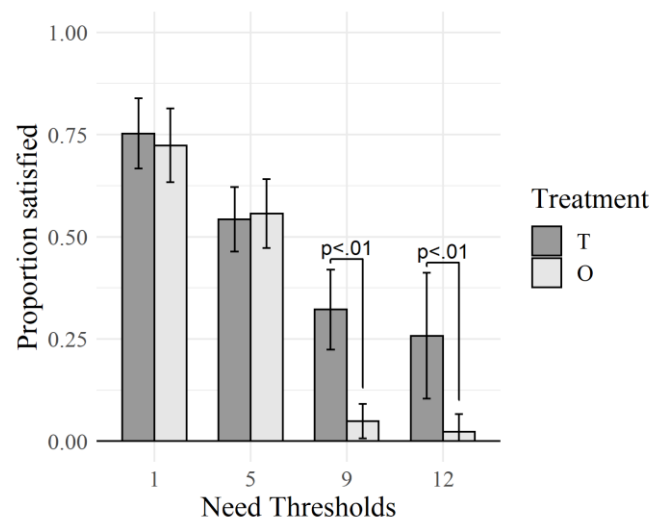
4.2. The negative effect of structurally weaker network positions

Figure 4 shows the variation of the need satisfaction rate across bargaining positions. NSR-I is significantly lower for the outsider position than dyad members. In addition to this effect, the NSR-I of the outsider drops by 12.5 percentage points in treatment O compared to treatment T (prop. test, $p < 0.01$). This result supports hypothesis H2. However, information about need thresholds has no effect on the NSR-I of dyad members. In other words, subjects tend to only agree to a distribution of resources when their own need thresholds are met (Kittel et al., 2020).

4.3 Accumulation of disadvantages?

Similar to Figure 3 but for outsiders only, Figure 5 shows the satisfaction of need thresholds across the four positive threshold levels. It indicates that need satisfaction of the outsider also decreases significantly between a need threshold of 1 and 5 in treatment T (prop. test, $p < 0.01$) and O (prop. test, $p = 0.02$). Furthermore, high need thresholds of outsiders in treatment O are hardly ever satisfied, whereas the agreeing dyad also satisfies need thresholds above the equal share in more than 25 percent of the cases in treatment T. Supporting H3, it is thus the combination of structural disadvantages that drives the differences between the transparent and opaque treatments.

Figure 5. Need satisfaction across threshold levels, outsiders



'p' refers to the p-value of a test of equal proportions.

This observation leads to the question of whether subjects with higher needs are less likely to enter the dyad altogether. In treatment T this is not the case. Subjects in the weak bargaining position are not more likely to form the dyad if their need threshold is lower than that of the subject occupying the other weak position (prop. test, $p = 0.22$). However, in treatment O, the subject with the higher need threshold is significantly less likely to enter the dyad when his/her threshold lies above the equal split. In this case, the weak network member with the higher need threshold forms the coalition in only 40.6 percent of the observations, which is significantly less than 50 percent (prop. test, $p = 0.01$) and also significantly less likely than in

treatment T (prop. test, $p < 0.01$). Thus, the main treatment effect can partly be explained by the fact that weak subjects with high thresholds are outcompeted in treatment O by weak subjects with lower thresholds. We attribute this advantage to the less demanding proposal that this subject can make because of her lower threshold.

4.4 Multiple Regression Results

To further investigate the factors that influence the likelihood of outsider's need satisfaction, we ran several logit regression models. The dependent variable indicates whether the need threshold of the outsider is satisfied or not. The independent variables include a treatment dummy for treatment O, dummy variables for the threshold levels, the threshold levels of the dyad members and an interaction between the treatment and the threshold levels. This interaction tests H3 that the effect of transparent need thresholds increases with rising need thresholds. The control variables include the social value orientations of the network members to account for the fact that the outcomes can also be affected by individual differences in other-regarding behavior, the period of the bargaining game to account for learning effects, session fixed effects to account for composition effects including in which city the experiment has been conducted and inter-individual dependence of repeated decisions by the same person.

Table 2 shows the results of this specification. In regression I, we see that the likelihood of need satisfaction for the outsider is significantly lower in treatment O. Likewise, the probability of the outsider's need satisfaction decreases with her threshold level. Additionally, the need threshold of the weak dyad member has a negative effect on the need satisfaction rate of the outsider. When it is equal to twelve (i.e., half of the total endowment), the likelihood of need satisfaction of the outsider decreases significantly.¹² In regression II, we added the control variables for the social value orientations. The results show that the likelihood of need satisfaction for the outsider increases with the social value orientations of the agreeing dyad. Finally, in regression III, we include the interaction between treatment T and the need threshold of the outsider. The results imply that private information about the need thresholds only affects the need satisfaction rate of the outsider when the outsider's threshold is above the equal three-way split of eight points. Otherwise, all effects remain robust. This result supports hypothesis 2 that the lack of transparent needs affects the weakest members of the group the most.

¹² We also tested whether the distribution of need thresholds has an additional effect on the need satisfaction of the outsider, but this is not the case when we control for the individual need thresholds ($p = 0.42$).

Table 2. Likelihood that the need threshold of the outsider is satisfied

	DV: Need satisfaction		
	I	II	III
Treatment O	-0.559*** (0.176)	-0.535*** (0.187)	0.178 (0.269)
Need threshold of the outsider of the coalition (ref. = 5)			
Threshold = 1	1.065*** (0.224)	0.879*** (0.278)	1.016*** (0.359)
Threshold = 9	-2.033*** (0.269)	-2.301*** (0.286)	-1.362*** (0.342)
Threshold = 12	-2.235*** (0.401)	-2.785*** (0.469)	-1.781*** (0.542)
Need Threshold of the weak coalition member (ref. = 5)			
Threshold = 0	0.679 (0.509)	-0.080 (0.747)	-0.204 (0.802)
Threshold = 1	0.262 (0.236)	0.113 (0.300)	0.037 (0.309)
Threshold = 9	0.216 (0.244)	0.170 (0.266)	0.148 (0.274)
Threshold = 12	-0.976*** (0.336)	-1.366*** (0.417)	-1.363*** (0.423)
Need Threshold of the strong coalition member (ref. = 5)			
Threshold = 1	0.545 (0.363)	-0.026 (0.560)	-0.177 (0.576)
Threshold = 9	0.188 (0.346)	0.030 (0.390)	0.018 (0.393)
SVO of the strong member of the coalition		0.053*** (0.007)	0.054*** (0.008)
SVO of the weak member of the coalition		0.016** (0.008)	0.016** (0.008)
SVO of the outsider of the coalition		-0.006 (0.007)	-0.005 (0.007)
Period		-0.120 (0.082)	-0.148* (0.085)
Treatment O x Need Threshold 1			-0.416 (0.453)
Treatment O x Need Threshold 9			-2.552*** (0.601)
Treatment O x Need Threshold 12			-3.032*** (1.146)
Constant	0.377 (0.401)	0.066 (0.751)	-0.135 (0.783)
Observations	741	741	741
Log Likelihood	-394.452	-362.020	-347.395
Akaike Inf. Crit.	840.903	784.041	760.791

Logistic regression with fixed effects on session level. *** p < .01, ** p < .05, * p < .10.

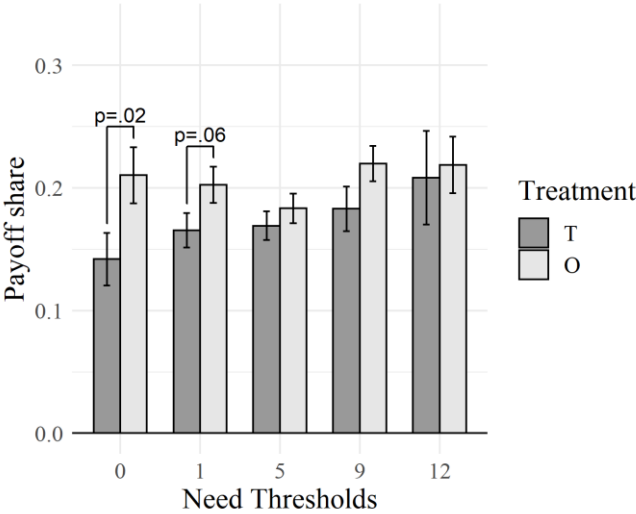
The regression results suggest that the strong network members have a particularly strong influence on the distribution of the resources. To cross-validate the external validity of our

results, we use this information to compare the behavior in the bargaining game with a survey measure for the support of the need principle. For each strong network member, we calculate the share of agreements in which they satisfied the need thresholds of all group members. The correlation between the share of need thresholds strong members satisfy and their self-reported attitudes toward the need principle (BSJO scale, (Hülle et al., 2017) is 0.22 ($n = 64$, $p = 0.07$) for treatment T and 0.11 ($n = 64$, $p = 0.40$) for treatment O. This means that subjects who are more likely to satisfy need thresholds in the bargaining game are also more likely to support the need principle in the post-experimental survey. However, the correlation is only significant when the need thresholds are transparent.

4.4 Transparent needs and the payoff of the outsider

Do outsiders also earn more when their need threshold is public information? When we add the payoffs from the network bargaining game and the real-effort task, there are no significant differences between treatments (prop. test, $p = 0.67$). This is surprising. Since the need thresholds of outsiders are more often satisfied in treatment T, outsiders also earn on average more payoffs from the real-effort tasks in T than in treatment O (prop. test, $p < 0.01$). Hence, we would expect outsiders to obtain higher profits in T than in O in the entire experiment.

Figure 6. Outsiders’ payoffs across threshold levels



‘p’ refers to the p-value of a one-sided Mann-Whitney test.

This observation demands an explanation. Apparently, outsiders receive higher payoff shares from the coalition in treatment O (prop. test, $p < 0.01$). Figure 6 shows how the bargaining payoffs of the outsiders are distributed across the need thresholds. Even though outsiders always earn more in treatment O, the difference is only statistically significant when the need threshold is equal to zero or one. Hence, when need thresholds are low and information about them is publicly available in treatment T, the coalition members apparently use this information to justify lower allocations to the outsider. In treatment O, the dyad is more likely to agree on an equal distribution, which increases the average payoffs of the outsiders. In sum,

outsiders earn less from the real-effort task but more from the bargaining game in treatment O, which overall equalizes the payoff compared to treatment T.

7. Conclusion

In this paper, we studied the effect of transparent need thresholds on the prevalence of the need principle in the laboratory. We observe a significant effect of the transparency of need thresholds on the recognition of need claims. Need thresholds legitimize distributions that depart from the equal split of resources. However, when need thresholds are higher than the equal split, outsiders only have a chance to receive an amount that satisfies their need claims when these claims are transparent, i.e. verifiable by “objective” facts. In contrast, when unverifiable need claims are low, the even split is more attractive for agreeing dyads scoring high on social value orientations, thus resulting in higher payoffs for the outsider. However, there is a dark side to transparency: When others’ observable needs are low, it becomes easier to legitimize an unequal allocation of resources. The results provide empirical evidence that the need principle can override the equality principle and, thus, be instrumentalized against a minority.¹³

The empirical evidence presented in this paper relates to two important theoretical and practical questions. First, the verifiability of need claims is an important condition for the probability of need claim satisfaction. *Clear and objective information about the state of a person’s needs is indispensable for satisfying those needs, and, thus, for need-based justice.* Second, self-serving decision-makers can refer to low needs to legitimize low transfers to structurally weak group members.

Therefore, the findings suggest that transparency is no universal “cure”, as has been remarked repeatedly in transparency research (Cucciniello, Porumbescu, & Grimmelikhuijsen, 2017). Although transparency is typically considered beneficial, more fine-grained analyses suggest that this assessment should be more nuanced (Etzioni, 2010). Indeed, “[p]ublic information has attributes that make it a double-edged instrument. On the one hand, it conveys information on the underlying fundamentals, but it also serves as a focal point for the beliefs of the group as a whole” (Morris & Shin, 2002, 1521). Therefore, our results do not necessarily imply that a society or the welfare state must ask each person (or, more extreme, examine each person) about her needs (Sampson, 2019). In the case of needs, it would suffice to know about a persons’ general state of need to allocate the resources to this person and prevent them from falling below a certain (socially recognized) threshold.

In practice, private information about need thresholds is closer to most real-world situations than full transparency. The obscurity of others’ need thresholds leaves each individual with

¹³ An illustration of this phenomenon can be found in the coalition agreement of the Austrian government that took office in December 2017: The governing parties agreed to change the regulation of child benefits for children living abroad whose parents work in Austria, which eventually tied the level of benefits to the cost of living in the child’s country of residence (Government of Austria, 2017, 100). This policy was declared “a step toward more justice” by Austrian chancellor Sebastian Kurz (Die Presse, 4 January 2018, https://diepresse.com/home/innenpolitik/5347733/Schritt-zuGerechtigkeit_Regierung-kuerzt-Familienbeihilfe-fuer).

information only about their own level of neediness and the need to form beliefs based on the observation of the behavior of interaction partners. One may argue that there are cases in which full information is available (such as in medical care), but it is often the case that the assessment of need levels is necessarily subject to speculation.

These results entail a policy dilemma. On the one hand, human dignity calls for a right to a dignified life, which implies restraint in institutionalized control. On the other hand, without some form of transparency of needs it is impossible to assess the veracity of claims to restrain potentially overshooting egoism to the disadvantage of others. From a social-policy perspective, it would be more efficient to have full information about each citizen's needs in order to avoid wasting resources and to be able to help everybody who is in actual need. When the socially recognized level of need satisfaction is high enough to sustain a dignified human life, this approach is reasonable. However, when the socially approved level of need satisfaction is low, it may be problematic, as the information about neediness may be utilized to justify allocations that leave those in need at the edge of need satisfaction but worse off than others.

References

- Ancil, R., Dickhaut, J., Johnson, C., & Kanodia, C. (2010). Does Information Transparency Decrease Coordination Failure? *Games and Economic Behavior*, 70, 228-241.
- Arneson, R. (2015). Equality of Opportunity. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy*. <https://plato.stanford.edu/archives/sum2015/entries/equal-opportunity/>.
- August, V., & Osrecki, F. (2019). Transparency Imperatives: Results and Frontiers of Social Science Research. In V. August & F. Osrecki (Eds.), *Der Transparenz-Imperativ. Normen -- Praktiken -- Strukturen* (pp. 1-34). Wiesbaden: Springer VS.
- Banks, J. S. (1991). *Signaling Games in Political Science*. Chur: Harwood Academic Publishers.
- Bock, O., Baetge, I., & Nicklisch, A. (2014). hroot – Hamburg Registration and Organization Online Tool. *European Economic Review*, 71(117-120).
- Brañas-Garza, P. (2006). Poverty in Dictator Games: Awakening Solidarity. *Journal of Economic Behavior and Organization*, 60, 306-320.
- Braun, N., & Gautschi, T. (2006). A Nash Bargaining Model for Simple Exchange Networks. *Social Networks*, 28, 1-23.
- Brock, G. (2013). Needs and Distributive Justice. In G. F. Gaus & F. D'Agostino (Eds.), *The Routledge Companion to Social and Political Philosophy*. London: Routledge.
- Cappelen, A. W., Moene, K. O., Sørensen, E. O., & Tungodden, B. (2013). Needs versus Entitlements. An International Fairness Experiment. *Journal of the European Economic Association*, 11(3), 574-598.
- Cohen, G. A. (1989). On the Currency of Egalitarian Justice. *Ethics*, 99(4), 906-944.
- Cook, K. S., & Chesire, C. (2013). Social Exchange, Power, and Inequality in Networks. In R. Wittek, T. A. B. Snijders, & V. Nee (Eds.), *The Handbook of Rational Choice Social Research* (pp. 185-219). Stanford: Stanford Social Sciences.
- Cook, K. S., & Emerson, R. M. (1978). Power, Equity and Commitment in Exchange Networks. *American Sociological Review*, 43(5), 721-739.
- Cooper, D. J., & Kagel, J. H. (2016). Other-regarding Preferences. A Selective Survey of Experimental Results. In J. H. Kagel & A. E. Roth (Eds.), *The Handbook of Experimental Economics. Volume 2* (pp. 217-289). Princeton: Princeton University Press.

- Cucciniello, M., Porumbescu, G. A., & Grimmelikhuijsen, S. (2017). 25 Years of Transparency Research: Evidence and Future Directions. *Public Administration Review*, 77(1), 32-44.
- Dana, J., Weber, R. A., & Xi Kuang, J. (2007). Exploiting Moral Wiggle Room: Experiments Demonstrating an Illusory Preference for Fairness. *Economic Theory*, 33, 67-80.
- Dean, H. (2010). *Understanding Human Need. Social Issues, Policy and Practice*. Bristol: Policy Press.
- Deeming, C. (Ed.) (2020). *Minimum Income Standards and Reference Budgets*. Bristol: Bristol University Press.
- Emerson, R. M. (1972a). Exchange Theory, Part I: A Psychological Basis for Social Exchange. In J. Berger, M. Zelditch Jr., & B. Anderson (Eds.), *Sociological Theories in Progress: Vol. 2* (pp. 38-57). Boston, Mass.: Houghton Mifflin.
- Emerson, R. M. (1972b). Exchange Theory, Part II: Exchange Relations and Networks. In J. Berger, M. Zelditch Jr., & B. Anderson (Eds.), *Sociological Theories in Progress: Vol. 2* (pp. 58-87). Boston, Mass.: Houghton Mifflin.
- Esarey, J., Salmon, T. C., & Barrilleaux, C. (2012). What Motivates Political Preferences? Self-Interest, Ideology, and Fairness in a Laboratory Democracy. *Economic Inquiry*, 50(3), 604-624.
- Esser, H., & Kroneberg, C. (2015). An Integrative Theory of Action. The Model of Frame Selection. In E. J. Lawler, S. R. Thye, & J. Yoon (Eds.), *Order on the Edge of Chaos: Social Psychology and the Problem of Social Order* (pp. 63-85). New York: Cambridge University Press.
- Etzioni, A. (2010). Is Transparency the Best Disinfectant? *Journal of Political Philosophy*, 18(4), 389-404.
- Fehr, E., & Schmidt, K. M. (2006). The Economics of Fairness, Reciprocity and Altruism — Experimental Evidence and New Theories. In S.-C. Kolm (Ed.), *Handbook of the Economics of Giving, Altruism and Reciprocity, Vol. 1* (pp. 615-691). Amsterdam: North-Holland.
- Fehrler, S., & Hughes, N. (2018). How Transparency Kills Information Aggregation: Theory and Experiment. *American Economic Journal: Microeconomics*, 10(1), 181-209.
- Fischbacher, U. (2007). z-Tree: Zurich Toolbox for Ready-Made Economic Experiments. *Experimental Economics*, 10, 171-178.
- Frankfurt, H. G. (2015). *On Inequality*. Princeton: Princeton University Press.
- Gaertner, W., & Schokkaert, E. (2012). *Empirical Social Choice. Questionnaire-Experimental Studies on Distributive Justice*. Cambridge: Cambridge University Press.
- Government of Austria. (2017). *Zusammen. Für Österreich. Regierungsprogramm 2017-2022*. Wien Retrieved from <https://www.bundeskanzleramt.gv.at/regierungsdokumente>
- Greiner, B. (2015). Subject Pool Recruitment Procedures: Organizing Experiments with ORSEE. *Journal of the Economic Science Association*, 1, 114-125.
- Hardin, G. (1968). The Tragedy of the Commons. *Science*, 162, 1243-1248.
- Holm, H., & Engsel, P. (2005). Choosing Bargaining Partners. An Experimental Study on the Impact of Information about Income, Status and Gender. *Experimental Economics*, 8(3), 183-216.
- Hülle, S., Liebig, S., & May, M. J. (2017). Measuring Attitudes Toward Distributive Justice: The Basic Social Justice Orientations Scale. *Social Indicators Research*, 136(2), 663-692.
- Kause, A., Vitouch, O., & Glück, J. (2018). How Selfish is a Thirsty Man? A Pilot Study on Comparing Sharing Behavior with Primary and Secondary Rewards. *PLoS ONE*, 13(8), e0201358.
- Kittel, B., Kanitsar, G., & Traub, S. (2017). Knowledge, Power, and Self-interest. *Journal of Public Economics*, 150, 39-52.
- Kittel, B., Neuhofer, S., & Schwaninger, M. (2020). The Impact of Need on Distributive Decisions: Experimental Evidence on Anchor Effects of Exogenous Thresholds in the Laboratory. *PLoS ONE*, <https://doi.org/10.1371/journal.pone.0228753>.
- Konow, J. (2001). Fair and Square: The Four Sides of Distributive Justice. *Journal of Economic Behavior and Organization*, 46, 137-164.
- Konow, J., & Schwettmann, L. (2016). The Economics of Justice. In C. Sabbagh & M. Schmitt (Eds.), *Handbook of Social Justice Theory and Research* (pp. 83-106). Berlin: Springer.
- Lewis, P. D., & Willer, D. (2017). Does Social Value Orientation Theory Apply to Social Relations? *Sociological Science*, 3, 249-262.

- Liebig, S., & Sauer, C. (2016). Sociology of Justice. In C. Sabbagh & M. Schmitt (Eds.), *Handbook of Social Justice Theory and Research* (pp. 37-59). Berlin: Springer.
- Molm, L. D. (2014). Experiments on Exchange Relations and Exchange Networks in Sociology. In M. Webster Jr. & J. Sell (Eds.), *Laboratory Experiments in the Social Sciences (2nd ed.)* (pp. 199-224). Amsterdam: Elsevier.
- Molm, L. D., & Cook, K. S. (1995). Social Exchange and Exchange Networks. In K. S. Cook, G. A. Fine, & J. House (Eds.), *Sociological Perspectives on Social Psychology* (pp. 209-235). Needham Heights, MA: Allyn & Bacon.
- Morris, S., & Shin, H. S. (2002). Social Value of Public Information. *American Economic Review*, 92(5), 1521-1534.
- Murphy, R. O., Ackermann, K. A., & Handgraaf, M. J. J. (2011). Measuring Social Value Orientation. *Judgment and Decision Making*, 6(8), 771-781.
- Neuhofer, S., Reindl, I., & Kittel, B. (2015). Social Exchange Networks: A Review of Experimental Studies. *Connections*, 35(2), 34-51.
- Nussbaum, M. (2011). *Creating Capabilities. The Human Development Approach*. Cambridge: Belknap Press.
- Ostrom, E. (1990). *Governing the Commons. The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.
- Prat, A. (2005). The Wrong Kind of Transparency. *American Economic Review*, 95(3), 862-877.
- Rawls, J. (1971). *A Theory of Justice*. Oxford: Oxford University Press.
- Rawls, J. (2005). *Political Liberalism*. New York: Columbia University Press.
- Reader, S. (2006). Does a Basic Needs Approach Need Capabilities? *Journal of Political Philosophy*, 14(3), 337-350.
- Sampson, S. (2019). The Morality of Transparency: Clarity versus Emptiness. In V. August & F. Osrecki (Eds.), *Der Transparenz-Imperativ. Normen -- Praktiken -- Strukturen* (pp. 37-62). Wiesbaden: Springer VS.
- Schwaninger, M. (2021). Sharing with the Powerless Third: Other-regarding Preferences in Dynamic Bargaining. *DFG Research Group 2104, Working Paper Nr. 2021-02*.
- Schwaninger, M., Neuhofer, S., & Kittel, B. (2019). Offers Beyond the Negotiating Dyad: Including the Excluded in a Network Exchange Experiment. *Social Science Research*, 79, 258-271. doi:10.1016/j.ssresearch.2018.10.014
- Sen, A. (1985). *Commodities and Capabilities*. Oxford: Elsevier Science Publishers.
- Sen, A. (1990). Justice: Means versus Freedoms. *Philosophy and Public Affairs*, 19(2), 111-121.
- Smeets, P., Bauer, R., & Gneezy, U. (2015). Giving Behavior of Millionaires. *PNAS*, 112(34), 10641-10644.
- Strathern, M. (2000). The Tyranny of Transparency. *British Educational Research Journal*, 26(3), 309-321.
- Traub, S., & Kittel, B. (Eds.). (2020). *Need-based Distributive Justice. An Interdisciplinary Perspective*. Heidelberg: Springer.
- UNDP. (2020). *Human Development Index 2020. The Next Frontier: Humand Development and the Anthropocene*. New York: United Nations Development Programme.
- Van Oorschot, W., Roosma, F., Meuleman, B., & Reeskens, T. (Eds.). (2017). *The Social Legitimacy of Targeted Welfare: Attitudes to Welfare Deservingness*. Cheltenham: Edward Elgar.
- Willer, D. (Ed.) (1999). *Network Exchange Theory*. Westport, Conn.: Praeger.
- Willer, D., & Emanuelson, P. (2008). Testing Ten Theories. *Journal of Mathematical Sociology*, 32, 165-203.
- Willer, D., Gladstone, E., & Berigan, N. (2013). Social Values and Social Structure. *Journal of Mathematical Sociology*, 37(2), 113-130.

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