

The Influence of Organizational and Negotiators' Individual Factors on Outcomes of Dyadic Intra-Organizational Negotiations

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Summary

Intra-organizational negotiation is a major type of social interaction which serves to resolve conflicts within organizations. It occurs when at least two organizational members have conflicting interests and cannot pursue their goals without the cooperation of others. Intra-organizational negotiations can have a crucial impact on organizations' long-term performance because the presence of conflicts can entail dysfunctional behavior and psychological illnesses, which are related to increased organizational costs. As such negotiations are diverse and complex, organizations need to understand the effects of different negotiation settings. Therefore, two primary types of factors have to be focused on: contextual characteristics and the negotiators involved. The present dissertation considers contextual characteristics in the form of organizational factors that shape the negotiation situation. With regard to the negotiators involved, it deals with negotiation dyads and covers negotiators' individual factors in terms of perceptions and personality traits. By doing this, the present dissertation aims at experimentally analyzing the influence of the interplay between organizational factors and negotiators' individual factors on outcomes of dyadic negotiations within the intra-organizational context.

The derivation of the organizational and negotiators' individual factors considered in this dissertation is structured by two types of intra-organizational negotiations which yield outcomes with different consequences in temporal terms: outcomes with short-term consequences and outcomes with long-term consequences. The interplay between the derived organizational and negotiators' individual factors is captured by an overarching research model. This model is split into three research questions which are covered by three individual research papers.

The present dissertation consists of two parts. The first part constitutes a comprehensive overview of the dissertation, which outlines the motivation and topic, the underlying theoretical concepts, the methodology applied, the summary of the research papers, and the conclusion. The second part comprises the three research papers.

Research Paper 1 focusses on work teams jointly producing a surplus which has to be distributed by negotiation. It analyzes how two organizational factors, i.e. relative performance information and unequal distribution of power due to different assignment procedures of hierarchical roles, influence negotiators' individual factors in the form of subjective entitlements, and in turn negotiators' individual payoffs and their relation. The results show that performance-specific subjective entitlements are stronger when relative performance information is provided. These subjective entitlements lead agreements to favor better

performers. Furthermore, the assignment of hierarchical roles engenders role-specific subjective entitlements and agreements favoring superiors. Comparing the assignment of hierarchical roles based on relative performance information and the provision of relative performance information, agreements favor better performers in the role of the superior more than better performers without a hierarchical role. Comparing the random role assignment and the provision of performance information, agreements favor randomly assigned superiors and better performers in a similar way.

Research Paper 2 examines the effect of another organizational factor, i.e. corporate guidelines in the form of a code of conduct and information on realizations compatible with the code from the organization's perspective, on negotiations shaped by an unequal distribution of power due to the assignment of hierarchical roles. Negotiation outcomes in terms of negotiators' individual payoffs and their relation, as well as deviations from the communicated company optimum are analyzed. The study reveals that the presence of corporate guidelines only has a regulatory effect if transmitted via the more powerful employee (i.e. the superior). In this case, corporate guidelines presented to the superior translate into substantially more favorable negotiation outcomes for the less powerful employee (i.e. the subordinate) by mitigating inequality of payoffs between superiors and subordinates.

Focusing on negotiation outcomes with long-term consequences, Research Paper 3 investigates the impact of appointing a representative of future generations and this person's incentive system on negotiation outcomes that will affect future generations. Furthermore, it studies whether and how negotiators' personality traits in the form of future orientation and social value orientation affect these outcomes. Therefore, negotiation outcomes in terms of investments in intergenerational justice are analyzed. The findings show that assigning the role of a representative of future generations to one of two negotiation partners yields negotiation results which are more favorable toward future generations. Even though this outcome is more pronounced when aligned with individual incentives, it still holds for a representative who is financially penalized for advocating future generations' interests. In this latter situation, the representative's individual factors in the form of future orientation and social value orientation impact negotiation outcomes.

In summary, the present dissertation deepens and extends existing negotiation research, and provides theoretical implications as well as directions for future research. Furthermore, it fosters organizations' understanding of the impact of organizational and negotiators' individual factors on outcomes of dyadic intra-organizational negotiations, and offers practical implications for the management of such negotiations.

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List of Abbreviations

ACMAR	Annual Conference for Management Accounting Research
<i>b</i>	Unstandardized regression coefficient in Research Paper 2 and coefficient in generalized linear model in Research Paper 3
BATNA	Best Alternative to a Negotiated Agreement
CFC	Concern for Future Consequences
CG treatments	Treatments in Research Paper 2 where the corporate guidelines were made available to either the subordinate, the superior, or both
CG-CG	Treatment in Research Paper 2 where both the participant in the role of the superior and the participant in the role of the subordinate received the corporate guidelines
CG-NCG	Treatment in Research Paper 2 where only the participant in the role of the superior received the corporate guidelines
<i>CG SUB</i>	Dummy variable for the presentation of the corporate guidelines to the subordinate in Research Paper 2
<i>CG SUP</i>	Dummy variable for the presentation of the corporate guidelines to the superior in Research Paper 2
<i>CG SUP x CG SUB</i>	Interaction term for the presentation of the corporate guidelines to both the superior and the subordinate in Research Paper 2
CI	Confidence Interval
CO ₂	Carbon Dioxide

<i>Comp_EBM_Future</i>	Independent variable for the executive board members' composite future orientation in the control treatment in Research Paper 3
<i>Comp_EBM_Present</i>	Independent variable for the executive board members' composite present orientation in the control treatment in Research Paper 3
<i>Comp_EBM_SVO</i>	Independent variable for the executive board members' composite social value orientation in the control treatment in Research Paper 3
$\Delta_Entitle$	Independent variable for the tension in the winner's and the loser's performance-specific entitlements in Research Paper 1
$\Delta_Performance_Role_Entitle$	Independent variable for the tension in the winner's and the loser's performance-specific entitlements or the tension in the superior's and the subordinate's role-specific entitlements in the comparison of the INFO-NOROLE treatment with both the INFO-ROLE and the NOINFO-ROLE treatment in Research Paper 1
$\Delta_Role_Entitle$	Independent variable for the tension in the superior's and the subordinate's role-specific entitlements in Research Paper 1
EBM	Executive Board Member
<i>EBM_Future</i>	Independent variable for the executive board member's future orientation in the RFG treatments in Research Paper 3
<i>EBM_Present</i>	Independent variable for the executive board member's present orientation in the RFG treatments in Research Paper 3
<i>EBM_SVO</i>	Independent variable for the executive board member's social value orientation in the RFG treatments in Research Paper 3

ECU	Experimental Currency Unit
e.g.	exempli gratia (for example)
<i>et al.</i>	et alia (and others)
etc.	et cetera (and so on)
f.	following
<i>F</i>	<i>F</i> -statistic
GFT	Goal-Framing Theory
H	Hypothesis
i.e.	id est (that is)
<i>Info</i>	Dummy variable for the provision of relative performance information in Research Paper 1
INFO treatments	Treatments in Research Paper 1 where relative performance information was provided
<i>Info x Δ_Entitle</i>	Interaction term for the provision of relative performance information and the tension in the winner's and the loser's performance-specific entitlements in Research Paper 1
<i>Info x Δ_Role_Entitle</i>	Interaction term for the provision of relative performance information and the tension in the superior's and the subordinate's role-specific entitlements in Research Paper 1
<i>Info x Loser_Entitle</i>	Interaction term for the provision of relative performance information and the loser's performance-specific entitlement in Research Paper 1
INFO-NOROLE	Treatment in Research Paper 1 where relative performance information was provided and no hierarchical roles were assigned

<i>Info_Role</i>	Dummy variable for the comparison of the INFO-NOROLE with the NOINFO-ROLE treatment in Research Paper 1
INFO-ROLE	Treatment in Research Paper 1 where relative performance information was provided and hierarchical roles were assigned according to the participants' performances in the general knowledge quiz
<i>Info_Role x Δ_Performance_Role_Entitle</i>	Interaction term for the assignment of hierarchical roles and the tension in the winner's and the loser's performance-specific entitlements or the tension in the superior's and the subordinate's role-specific entitlements in the comparison of the INFO-NOROLE with the NOINFO-ROLE treatment in Research Paper 1
<i>Info_Role x Loser_Subordinate_Entitle</i>	Interaction term for the assignment of hierarchical roles and the loser's performance-specific or the subordinate's role-specific entitlement in the comparison of the INFO-NOROLE with the NOINFO-ROLE treatment in Research Paper 1
<i>Info_Role x Winner_Superior_Entitle</i>	Interaction term for the assignment of hierarchical roles and the winner's performance-specific or the superior's role-specific entitlement in the comparison with the INFO-NOROLE and the NOINFO-ROLE treatment in Research Paper 1
<i>Info x Subordinate_Entitle</i>	Interaction term for the provision of relative performance information and the subordinate's role-specific entitlement in Research Paper 1
<i>Info x Superior_Entitle</i>	Interaction term for the provision of relative performance information and the superior's role-specific entitlement in Research Paper 1

<i>Info x Winner_Entitle</i>	Interaction term for the provision of relative performance information and the winner's performance-specific entitlement in Research Paper 1
KW test	Kruskal-Wallis test
Log-L	Log Likelihood
<i>Loser_Entitle</i>	Independent variable for loser's performance-specific entitlement in Research Paper 1
<i>Loser_Procedural</i>	Independent variable for the loser's perception of procedural fairness in Research Paper 1
<i>Loser_Subordinate_Entitle</i>	Independent variable for the loser's performance-specific or the subordinate's role-specific entitlement in the comparison of the INFO-NOROLE treatment with both the INFO-ROLE and the NOINFO-ROLE treatment in Research Paper 1
<i>Loser_SVO</i>	Independent variable for the loser's social value orientation in Research Paper 1
<i>M</i>	Mean
<i>Mdn</i>	Median
MOE	Managerial and Organizational Economics
MW test	Mann-Whitney test
<i>N</i>	Sample Size
NCG-CG	Treatment in Research Paper 2 where only the participant in the role of the subordinate received the corporate guidelines
NCG-NCG	Treatment in Research Paper 2 where neither the participant in the role of the superior nor the participant in the role of the subordinate received the corporate guidelines

NOINFO treatments	Treatments in Research Paper 1 where no relative performance information was provided
NOINFO-NOROLE	Treatment in Research Paper 1 where no relative performance information was provided and no hierarchical roles were assigned
NOINFO-ROLE	Treatment in Research Paper 1 where no relative performance information was provided and hierarchical roles were assigned independently of the participants' performances in the general knowledge quiz
No. of obs.	Number of Observations
NORFG-NOINC	Treatment in Research Paper 3 where two executive board members formed a negotiation dyad
NOROLE treatments	Treatments in Research Paper 1 where no hierarchical roles were assigned
OC	Organizational Commitment
<i>OC SUB</i>	Independent variable for the subordinate's organizational commitment in Research Paper 2
<i>OC SUP</i>	Independent variable for the superior's organizational commitment in Research Paper 2
OLS	Ordinary Least Squares
ORSEE	Online Recruitment Software for Economic Experiments
p.	page
<i>p</i>	<i>p</i> -value
pp.	pages
PhD	Philosophiae Doctor (Doctor of Philosophy)

R^2	Coefficient of determination (proportion of the variance in the dependent variable that is predictable from the independent variable(s))
<i>Rep</i>	Dummy variable for the presence of a representative of future generations in Research Paper 3
<i>Rep_Inc</i>	Dummy variable for the presence of an incentive system financially penalizing or financially rewarding investments in long-term emissions reductions in Research Paper 3
<i>Rep_NoInc</i>	Dummy variable for the presence of a representative of future generations with an incentive system that financially penalized investments in long-term emissions reductions in Research Paper 3
RFG	Representative of Future Generations
RFG treatments	Treatments in Research Paper 3 where negotiation dyads consisted of one representative of future generations and one executive board member
<i>RFG_Future</i>	Independent variable for the future orientation of the representative of future generations in the RFG treatments in Research Paper 3
RFG-INC	Treatment in Research Paper 3 where negotiation dyads consisted of one representative of future generations, who was financially rewarded in order to increase the investment in long-term emissions reductions, and one executive board member

RFG-NOINC	Treatment in Research Paper 3 where negotiation dyads consisted of one representative of future generations, who was financially penalized in order to increase the investment in long-term emissions reductions, and one executive board member
<i>RFG_Present</i>	Independent variable for the present orientation of the representative of future generations in the RFG treatments in Research Paper 3
<i>RFG_SVO</i>	Independent variable for the social value orientation of the representative of future generations in the RFG treatments in Research Paper 3
<i>Role</i>	Dummy variable for the assignment of hierarchical roles in Research Paper 1
ROLE treatments	Treatments in Research Paper 1 where hierarchical roles were assigned
<i>Role x Δ_Performance_Role_Entitle</i>	Interaction term for the assignment of hierarchical roles and the tension in the winner's and the loser's performance-specific entitlements or the tension in the superior's and the subordinate's role-specific entitlements in the comparison of the INFO treatments in Research Paper 1
<i>Role x Loser_Subordinate_Entitle</i>	Interaction term for the assignment of hierarchical roles and the loser's performance-specific or the subordinate's role-specific entitlement in the comparison of the INFO treatments in Research Paper 1

<i>Role x Winner_Superior_Entitle</i>	Interaction term for the assignment of hierarchical roles and the winner's performance-specific or the superior's role-specific entitlement in the comparison of the INFO treatments in Research Paper 1
RWTH Aachen University	Rheinisch-Westfälische Technische Hochschule Aachen
SCT	Social Categorization Theory
<i>SD</i>	Standard Deviation
SDT	Self-Determination Theory
<i>SE</i>	Standard Error
SIT	Social Identity Theory
<i>Subordinate_Entitle</i>	Independent variable for subordinate's role-specific entitlement in Research Paper 1
<i>Subordinate_Procedural</i>	Independent variable for the subordinate's perception of procedural fairness in Research Paper 1
<i>Subordinate_SVO</i>	Independent variable for the subordinate's social value orientation in Research Paper 1
<i>Superior_Entitle</i>	Independent variable for superior's role-specific entitlement in Research Paper 1
<i>Superior_Procedural</i>	Independent variable for the superior's perception of procedural fairness in Research Paper 1
<i>Superior_SVO</i>	Independent variable for the superior's social value orientation in Research Paper 1
SVO	Social Value Orientation
<i>SVO SUB</i>	Independent variable for the subordinate's social value orientation in Research Paper 2
<i>SVO SUP</i>	Independent variable for the superior's social value orientation in Research Paper 2

<i>t</i>	<i>t</i> -statistic
<i>Winner_Entitle</i>	Independent variable for the winner's performance-specific entitlement in Research Paper 1
<i>Winner_Procedural</i>	Independent variable for the winner's perception of procedural fairness in Research Paper 1
<i>Winner_Superior_Entitle</i>	Independent variable for the winner's performance-specific or the superior's role-specific entitlement in the comparison of the INFO-NOROLE treatment with both the INFO-ROLE and the NOINFO-ROLE treatment in Research Paper 1
<i>Winner_SVO</i>	Independent variable for the winner's social value orientation in Research Paper 1
WSR test	Wilcoxon Signed-Rank test
z-Tree	Zurich Toolbox for Ready-Made Economic Experiments

Part 1: Comprehensive Overview of the Dissertation

The present dissertation deals with the influence of organizational and negotiators' individual factors on outcomes of dyadic intra-organizational negotiations. It is composed of two parts: Part 1 constitutes a comprehensive overview of the dissertation. Part 2 contains three research papers that analyze the underlying research questions.

Part 1, the comprehensive overview, gives a summary of the dissertation at hand. For this purpose, **chapter 1.1** opens with the motivation for the topic and the organizational and negotiators' individual factors that are considered in this dissertation. Furthermore, it comprises the overarching research model, which addresses the interplay between the organizational and negotiators' individual factors, and the associated research questions, which are investigated in the three research papers. As the dissertation at hand is informed by previous research that is related to the developed research questions, **chapter 1.2** describes the theoretical concepts and the associated current state of research concerning the considered organizational and individual factors. In the three research papers, laboratory experiments are conducted. Therefore, **chapter 1.3** depicts a rationale for applying laboratory experiments as well as the experimental designs and manipulated factors of the studies. As the research papers each capture an individual research question and are therefore based on different theoretical considerations, **chapter 1.4** presents the related theoretical foundations, hypotheses, and key findings. The comprehensive overview closes with a conclusion in **chapter 1.5** which summarizes the key findings and discusses theoretical and practical implications as well as limitations and directions for further research.

Part 2 comprises the following three research papers:

- **Research Paper 1** "Performance Information and Hierarchical Roles in Negotiation: The Importance of Subjective Entitlements" (to be submitted to Management Science)
- **Research Paper 2** "On the Effectiveness of Corporate Guidelines: The Importance of Hierarchical Roles" (Working Paper Status)
- **Research Paper 3** "Representing Future Generations in Today's Negotiations" (presented at the ACMAR 2018)

1.1 Introduction

This chapter opens with the motivation for the research topic. As the present dissertation examines the influence of organizational and negotiators' individual factors on outcomes of dyadic intra-organizational negotiations, the organizational and negotiators' individual factors to be analyzed are derived. Finally, the overarching research model, which visualizes the interplay between the organizational and individual factors, and the associated research questions are delineated.

1.1.1 Motivation of the Research Topic

Intra-organizational negotiation is a major type of social interaction (Kim and Fragale, 2005; Thompson, 1990) which serves to resolve conflicts within organizations (Chmielecki, 2017; Jones and George, 2018).¹ It constitutes a process to reach a joint agreement when at least two organizational members have conflicting interests (Traavik, 2011) and cannot pursue their goals without the cooperation of others (Thompson, 1990; Thompson *et al.*, 2010). Examples of intra-organizational negotiations are the allocation of internal resources, the assignment of responsibilities, or the clarification of the division of functions (Chmielecki, 2017; Herbst *et al.*, 2008).²

Such negotiations can have a crucial impact on organizations' long-term performance (Herbst *et al.*, 2008) because the presence of conflicts can entail dysfunctional behavior such as reduced work effort or sabotage (Rahim *et al.*, 2000), and psychological illnesses such as depression, which are associated with increased costs due to absenteeism and lower performance (Birnbaum *et al.*, 2010; Römer *et al.*, 2012). As negotiations are diverse and complex (Bercovitch, 1984), it is necessary for organizations to understand the effects of different negotiation settings (Giordano *et al.*, 2007). In order to comprehensively understand negotiations and their outcomes, two primary types of factors have to be focused on: contextual characteristics and the negotiators involved (Li *et al.*, 2007; Neale and Northcraft, 1991). While early negotiation research investigated the influence of either contextual characteristics or individual differences in the form of demographic characteristics and personality on negotiations (Bazerman *et al.*, 2000), recent reviews acknowledge the interaction of both types of factors and integrate them into systematic frameworks (e.g., Agndal *et al.*, 2017; Bazerman

¹ Intra-organizational negotiations can be distinguished from inter-organizational negotiations, which take place when organizations try to reach agreements with their partners in the value chain (Chmielecki, 2017; Herbst *et al.*, 2008).

² For further examples of intra-organizational negotiations, see DeRue *et al.* (2009) and Wall and Blum (1991).

et al., 2000; Brett and Thompson, 2016; Gelfand *et al.*, 2011; Li *et al.*, 2007; Thompson *et al.*, 2010).

As this dissertation addresses negotiations in an intra-organizational context, it covers contextual characteristics in the form of organizational factors that shape the negotiation situation. With respect to the negotiators involved, intra-organizational negotiations can involve different types of parties, such as negotiation dyads (two individuals each constitute a party), multiple parties (more than two individuals each form a party), and negotiation teams (two or more individuals jointly compose a party) (Li *et al.*, 2007; Traavik, 2011). The dissertation at hand focuses on dyads as the smallest and most basic social unit because they enable the revelation of most structural conditions and social processes (Miller, 2007). Within these dyads, the negotiators' individual factors in terms of perceptions and personality traits are taken into account, as they have been found to influence negotiation outcomes (Ma *et al.*, 2002).

By doing this, the present dissertation aims at analyzing the influence of organizational and negotiators' individual factors on outcomes of dyadic negotiations within the intra-organizational context. For this purpose, organizational and negotiators' individual factors are derived which are thought to have an influence on outcomes of dyadic intra-organizational negotiations. The interplay between these factors is integrated into an overarching research model, which is split into three research questions covered by individual research papers. In order to investigate these research questions in a controlled setting, theory-based hypotheses were derived, which were tested in laboratory experiments. Based on the resulting findings, this dissertation deepens and extends existing negotiation research, and provides theoretical implications and directions for further research. Moreover, it fosters organizations' understanding of the effects of organizational and negotiators' individual factors on outcomes of dyadic intra-organizational negotiations and offers practical implications for the management of such negotiations.

1.1.2 Derivation of Organizational and Negotiators' Individual Factors

As outlined in section 1.1.1, the dissertation at hand aims at investigating the influence of organizational and negotiators' individual factors on outcomes of dyadic intra-organizational negotiations. These factors are structured by two types of intra-organizational negotiations that yield negotiation outcomes having different consequences in temporal terms and therefore affecting different parties. First, employees can negotiate on issues that directly relate to themselves. An example of such an intra-organizational negotiation is the allocation of internal resources between employees (Herbst *et al.*, 2008). The agreements resulting in this example

specify the amount of resources that each of the employees receives. As employees remain in an organization for a limited period of time, these agreements have short-dated effects on the negotiators' and the organization's outcomes. This type of intra-organizational negotiation is henceforth referred to as having short-term consequences. Second, employees can also negotiate on issues that have consequences beyond their tenure (Okhuysen *et al.*, 2003). Such negotiations relate to, for instance, investments in more expensive but sustainable energy sources (Wade-Benzoni *et al.*, 2010). The resulting agreements do not only affect the negotiators' and organizations' instant outcomes in terms of an investment that occasions costs, but rather impact the options for organizations' future generations (Wade-Benzoni, 2006). This type of intra-organizational negotiation is henceforth referred to as having long-term consequences in terms of intergenerational justice. Within the analysis of both forms of intra-organizational negotiations, different types of organizational and negotiators' individual factors are considered. These factors will be specified below.

Focusing on **intra-organizational negotiations that yield outcomes with short-term consequences**, the present dissertation considers organizational factors that are common in business life. Moreover, it covers negotiators' individual factors in terms of perceptions that might be influenced by such organizational factors. With respect to organizational factors, first, **relative performance information** in the form of information on relative inputs to a jointly produced surplus might be available when employees jointly produce a surplus that has to be divided (Karagözoğlu and Riedl, 2015). Due to growing global competition, mergers, and innovation (Kozlowski and Bell, 2012), there is an increasing emphasis on team production in organizations (Corgnet *et al.*, 2011). As contracts that define the distribution of jointly produced benefits are not always viable *ex ante*, work teams often negotiate the distribution of the jointly produced surplus (Gantner *et al.*, 2016; Karagözoğlu and Riedl, 2015; Rodriguez-Lara, 2016). However, the exact relation between the contributors' inputs may not be fully detected (Karagözoğlu and Riedl, 2015), with the result that only relative performance differences can be derived. Second, **unequal distribution of power** is an inherent factor in organizations (Spangle and Isenhardt, 2003). This is due to the fact that organizations are mostly shaped by hierarchical structures that strive for coordination and cooperation in order to achieve organizational goals (Halevy *et al.*, 2011; Magee and Galinsky, 2008). These hierarchical structures are usually characterized by power imbalances, with those in higher hierarchical positions, i.e. superiors, having more power than those in lower hierarchical positions, i.e. subordinates (Rus *et al.*, 2012). Third, organizations possess **corporate guidelines** which affect organizational activities such as negotiation (Spangle and Isenhardt, 2003). Such guidelines can

comprise prescriptive social norms and propositions on expected performance in uncertain situations (Kimmerle *et al.*, 2011). As nowadays, codes of conduct are a very popular instrument used to communicate organizational values (Coughlan, 2005; Cowton and Thompson, 2000; Kaptein, 2011; Kaptein and Schwartz, 2008), they are an important part of corporate guidelines. Furthermore, guidelines as an indication of acceptable performance in terms of concrete numbers influence employees' cooperation behavior in social dilemmas (e.g., Kimmerle and Cress, 2013). Therefore, corporate guidelines as considered in this dissertation consist of a code of conduct and information on realizations compatible with the code from the organization's perspective.

On the side of negotiators' individual factors, negotiators might bring **subjective entitlements**, i.e. subjectively perceived rights (Schlicht, 2016), to a certain share of resources to the bargaining table (Karagözoğlu and Riedl, 2015). These perceptions might be elicited by organizational factors and influence negotiation outcomes (Karagözoğlu and Riedl, 2015).

With regard to **intra-organizational negotiations that yield outcomes with long-term consequences**, organizations are required to consider sustainable use of natural resources in order to enable future generations to continue the business and therefore to ensure organizations' long-term viability (Wade-Benzoni, 1999). Therefore, the following organizational and individual negotiators' factors are addressed. Referring to organizational factors, first, the appointment of a **representative of future generations** is thought to be an effective mechanism for influencing negotiation outcomes with long-term consequences (Kamijo *et al.*, 2017). Second, the **incentive system of the representative of future generations** might be crucial because such a representative acts on behalf of a constituency whose interests might differ from those of the representative (Aaldering *et al.*, 2013; Kesner *et al.*, 1994).

With respect to negotiators' individual factors, the dissertation at hand considers two types of negotiators' personality traits. First, negotiators' **future orientation** is thought to influence negotiation outcomes with long-term consequences, as future-oriented people take future events into account (Nurmi, 1991, 2005). Second, negotiators' **social value orientation** (SVO) is examined. As SVO indicates individuals' preferences for particular divisions of outcomes between themselves and others (Van Lange, 1999), this personality trait might impact negotiation outcomes with long-term consequences.

1.1.3 Research Model and Associated Research Questions

Based on section 1.1.2, several organizational and negotiators' individual factors were identified which might influence outcomes of dyadic intra-organizational negotiations with different consequences in temporal terms. Therefore, the superordinate research question of the present dissertation is:

How do organizational and negotiators' individual factors influence outcomes of dyadic intra-organizational negotiations with different consequences in temporal terms?

The underlying research model, which is shown in Figure 1.1 (p. 6), comprises intra-organizational negotiations that yield outcomes with two forms of consequences, i.e. short-term and long-term. Both types of negotiations each consist of three main parts which are analyzed by laboratory experiments: organizational factors, negotiators' individual factors, and negotiation outcomes.

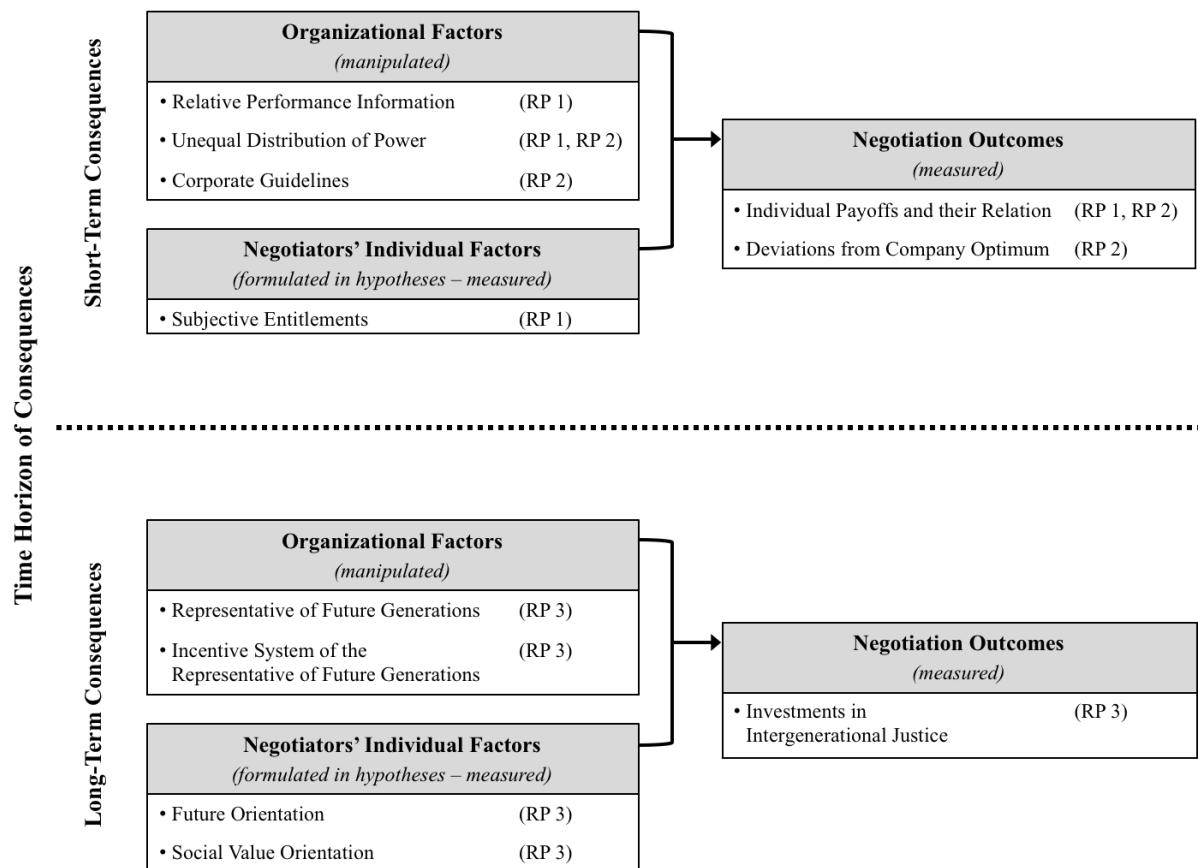


Figure 1.1: Research Model of the Dissertation

Note. RP refers to Research Paper.

While the organizational factors are manipulated by experimental instructions, individual factors and negotiation outcomes are measured. Within the analysis of **intra-organizational negotiations that yield outcomes with short-term consequences**, three organizational factors are considered: the provision of relative performance information, the unequal distribution of power, and corporate guidelines. Relative performance information refers to providing negotiators with information on which negotiator in a dyad was the better or worse performer in terms of real-effort toward the joint production of a surplus that has to be distributed (see Karagözoğlu and Riedl, 2015). Unequal distribution of power relates to the assignment of hierarchical roles, namely the role of a more powerful superior and the role of a less powerful subordinate. Corporate guidelines comprise a code of conduct and information on the company optimum, i.e. realizations compatible with the code from the organization's perspective. With regard to negotiators' individual factors, the present dissertation captures negotiators' subjective entitlements that might be elicited by the specific negotiation context. In this setting, different types of economic negotiation outcomes are considered. First, negotiators' individual payoffs and their relation is investigated. Second, deviations from the company optimum are examined as a measure for the negotiators' compliance with the corporate guidelines.

Within the investigation of **intra-organizational negotiations that yield outcomes with long-term consequences**, this dissertation studies the influence of two organizational factors: the appointment of a representative of future generations and this person's incentive system. Referring to negotiators' individual factors, negotiators' personality traits in the form of future orientation and SVO are captured. In this setting, economic negotiation outcomes in terms of investments in intergenerational justice are analyzed.

The overarching research model is split into three research questions which are covered by three individual research papers, each comprising a laboratory experiment. While the first two research papers consider negotiation outcomes with short-term consequences, the third research paper incorporates negotiation outcomes with long-term consequences. All three research papers are outcomes of the cooperation with my co-author, Peter Letmathe.

Research Paper 1 "Performance Information and Hierarchical Roles in Negotiation: The Importance of Subjective Entitlements" focuses on work teams that negotiate the distribution of a jointly produced surplus. It analyzes how two organizational factors, i.e. relative performance information and unequal distribution of power due to different assignment procedures of hierarchical roles, influence negotiators' individual factors in terms of subjective entitlements, and in turn negotiators' payoffs and their relation.

According to Luhan *et al.* (2013), negotiators derive subjective entitlements when they contribute unequally to the jointly produced surplus, take different roles in the negotiation, or have unequal power. There is already research on the influence of joint production processes (e.g., Bediou *et al.*, 2012; Bediou and Scherer, 2014; Feng *et al.*, 2013; Karagözoğlu and Riedl, 2015) and earning of (power) positions (e.g., Fleiß, 2015; Hoffman *et al.*, 1994; Hoffman and Spitzer, 1985; Polzer *et al.*, 1993) on negotiations. However, these studies mainly measured subjective entitlements indirectly by analyzing the mere negotiation outcomes of simplified negotiation games, such as ultimatum (Güth *et al.*, 1982) and dictator games (Forsythe *et al.*, 1994; for exceptions, see e.g., Gächter and Riedl, 2005; Karagözoğlu and Riedl, 2015). Consequently, an integrated view on how the provision of relative performance information and the assignment of hierarchical roles influence individual negotiators' subjective entitlements, and in turn individual outcomes derived from holistic negotiation processes, is lacking. Therefore, Research Paper 1 addresses the following the research question:

How do the provision of relative performance information and the assignment of hierarchical roles affect subjective entitlements, and in turn negotiations on a jointly produced surplus?

Research Paper 2 “On the Effectiveness of Corporate Guidelines: The Importance of Hierarchical Roles” further addresses the unequal distribution of power due to the assignment of hierarchical roles. It analyzes the effects of another organizational factor, i.e. corporate guidelines, on negotiations between employees in different hierarchical positions. In this setting, not only negotiators' individual payoffs and their relation, but also deviations from the company optimum communicated by the corporate guidelines are examined.

Unequal distributions of power are likely to yield asymmetrical outcomes that favor the (more) powerful negotiator (Kabanoff, 1991; Tripp, 1993). Corporate guidelines in the form of a code of conduct and information on realizations compatible with the code from the organization's perspective might attenuate such outcome imbalances. However, previous research on the effectiveness of codes of conduct is mixed (for a review, see Kaptein and Schwartz, 2008). Furthermore, studies on corporate guidelines explicitly comprising both social norms and propositions on expected performance are lacking. Finally, negotiation research that takes guidelines into account is limited (for exceptions, see Aquino, 1998; Aquino and Becker, 2005; Stawiski *et al.*, 2009; Tripp, 1993). Thus, an integrated view on the influence of corporate guidelines that comprise both social norms and explicit statements about expected performance on negotiation outcomes is lacking. Thus, the research question of Research Paper 2 is:

To what extent does the presence of corporate guidelines regulate possible differences between the negotiation outcomes of individuals in different hierarchical positions?

Research Paper 3 “Representing Future Generations in Today’s Negotiations” considers negotiation outcomes with long-term consequences. It examines whether and how the appointment of a representative of future generations and this person’s incentive system impact on outcomes of intra-organizational negotiations that will affect future generations. Furthermore, it investigates whether and how negotiators’ personality traits in the form of future orientation and SVO affect these negotiation outcomes. In this setting, negotiation outcomes in terms of investments in intergenerational justice are analyzed.

Outcomes with long-term consequences issue a challenge to organizational decision makers, e.g. executive board members (Wade-Benzoni, 2002). This is due to the fact that such individuals mainly act in the organization’s best interest only within the time period of their tenure, instead of taking the organization’s longer-term viability into account (Wade-Benzoni, 1999). Consequently, it seems to be beneficial to investigate mechanisms which would overcome these barriers to adopting an intergenerational perspective (Li *et al.*, 2007). The appointment of a representative of future generations constitutes such a mechanism (Kamijo *et al.*, 2017). Nevertheless, this person’s incentive system might play a crucial role (Aaldering *et al.*, 2013). Furthermore, negotiators’ future orientation and SVO might foster an intergenerational perspective, as they influence pro-environmental behavior (for a review, see Joireman, 2005). However, previous research on the influence of a representative of future generations and this person’s incentive system on negotiation outcomes in terms of intergenerational justice does not exist. Moreover, an integrated view on the influence of a representative of future generations in combination with the representative’s incentive system and negotiators’ personality traits is lacking. Hence, the research question of Research Paper 3 is:

Does a representative of future generations drive outcomes of intra-organizational negotiations towards more intergenerational justice and how do the representative’s incentive system and negotiators’ individual factors influence these negotiation outcomes?

1.2 Definition of Theoretical Concepts and Current State of Research

This chapter depicts the theoretical concepts and the current state of research on which the present dissertation is based. First, negotiations, negotiation outcomes and justice principles as

well as time horizon of consequences are considered. Subsequently, the organizational factors are described. Finally, the negotiators' individual factors are presented.

1.2.1 Negotiations

A negotiation is a “process whereby people attempt to settle what each shall give and take or perform and receive in a transaction between them” (Thompson, 1990, p. 516; see also Rubin and Brown, 1975; Wall, 1985; Wall and Blum, 1991). Thus, negotiations are shaped by the following characteristics (Bercovitch, 1984; Chertkoff and Esser, 1976; Cross, 1965; Schelling, 1963; Thompson, 1990): (1) there are at least two parties who have, or at least believe that they have, divergent interests; (2) the parties voluntarily negotiate in order to manage their (perceived) conflict; (3) communication is possible; (4) mutual compromises or intermediate solutions are feasible; (5) opportunities to make sequential provisional offers and counteroffers are given; (6) offers and proposals do not determine outcomes until they are accepted by all parties involved.

In negotiation research, mainly two types of negotiation situations are examined (Thompson, 1990). Fixed-sum or distributive negotiations are characterized by a fixed amount of benefit to be divided in such a way that any increases in one person's outcome correspond to equal decreases in the other person's outcome (Lawler and Ford, 1995; Thompson, 1990; Walton and McKersie, 1965). In contrast, variable-sum or integrative negotiations mostly feature multiple issues where increases in one person's outcome do not correspond to equal decreases in the other person's outcome (Lawler and Ford, 1995; Thompson, 1990; Walton and McKersie, 1965).

Research on negotiations has a long history (for reviews, see Bazerman *et al.*, 2000; Hausken, 1997; Thompson *et al.*, 2010) and constitutes an interdisciplinary field which is informed by mathematics, management, organizational behavior, social and cognitive psychology, economics, communication studies, sociology, political science (Bercovitch, 1984; Jönsson, 2015; Lawler and Ford, 1995; Li *et al.*, 2007; Thompson, 1990; Thompson *et al.*, 2010). As all of these approaches apply unique sets of concepts, assumptions, and theoretical questions (Lawler and Ford, 1995), an overarching negotiation theory does not exist (Jönsson, 2015). Rather, negotiation research is informed by both normative and descriptive research (Raiffa, 1982). Normative research (e.g., Cross, 1965; Nash, 1950, 1951) proposes models that prescribe optimal negotiation behavior of rational individuals (Cheng *et al.*, 2017; Thompson, 1990; Thompson *et al.*, 2010). In contrast, descriptive research depicts how negotiators actually behave by empirically examining the influence of individual characteristics, motivations, and

cognitive processes on negotiation behavior and outcomes (Cheng *et al.*, 2017; Thompson, 1990; Thompson *et al.*, 2010). Within the variety of research methods applied in negotiation research (for a review, see Carnevale and De Dreu, 2004), the primary research method is running laboratory experiments in order to identify cause-effects relationships and to diminish alternative explanations (Carnevale and De Dreu, 2005). As this dissertation aims at analyzing the influence of organizational and negotiators' individual factors on outcomes of intra-organizational dyadic negotiations, it primarily builds on descriptive research and applies laboratory experiments in order to analyze distributive and integrative negotiations.

1.2.2 Negotiation Outcomes and Justice Principles

In negotiation research, different types of negotiation outcomes are examined: whether the negotiation ends in mutual agreement or impasse, outcomes in economic or mathematical terms, negotiation efficiency in terms of length of negotiation or number of iterations, the type of negotiation process and outcomes (distributive versus integrative), and negotiators' satisfaction with or perceptions of the process and their outcomes (for reviews, see Agndal *et al.*, 2017; Thompson, 1990). As the dissertation at hand aims at analyzing individual and organizational outcomes of intra-organizational negotiations with both short-term and long-term consequences, the focus is on economic negotiation outcomes.

For the purpose of evaluating negotiators' individual outcomes with short-term consequences, distributive justice principles can be applied.³ In the literature, two distributive justice principles have received the most attention, namely equality and equity (Druckman and Wagner, 2016; for a historical review, see Pillutla and Murnighan, 2003). Equality refers to the idea that negotiators should receive the same outcomes irrespective of their contributions in terms of effort or marginal productivity (Corgnet *et al.*, 2011; Fischbacher *et al.*, 2017). Equity is rooted in Equity Theory (Adams, 1965; Güth, 1994; Homans, 1961; Selten, 1978), which states that negotiators' outcomes should be proportional to their inputs (Gantner *et al.*, 2001; Sondak *et al.*, 1995). A related concept to equity is the accountability or responsibility principle,

³ When evaluating the negotiation process, procedural justice also plays a role. As this dissertation concentrates on negotiation outcomes, procedural justice is not considered (for reviews on procedural justice, see Diekmann *et al.*, 2013; Druckman and Wagner, 2016). Furthermore, distinguishing justice from fairness, justice can be defined "as the perceived adherence to rules that reflect appropriateness in decision contexts" (Colquitt and Rodell, 2015, p. 188), whereas fairness is "a global perception of appropriateness" (Colquitt and Rodell, 2015, p. 188) "that tends to lie theoretically downstream of justice" (Colquitt and Zipay, 2015, p. 76).

which proposes that outcomes should be equitable to negotiators' controllable contributions (Cappelen *et al.*, 2007, 2010, Konow, 1996, 2000).

In order to analyze negotiation outcomes with long-term consequences, the construct of intergenerational justice is captured. According to Summers and Smith (2014), intergenerational justice refers to the notion that each generation has the right to have access to and to use the same diversity of natural and cultural resources as previous generations. Therefore, a key characteristic of intergenerational justice consists in the present generation's obligation to preserve options and opportunities for future generations (Summers and Smith, 2014; Wade-Benzoni *et al.*, 2008; Wade-Benzoni and Plunkett Tost, 2009).

1.2.3 Time Horizon of Consequences

Besides investigating outcomes of intra-organizational negotiations with short-term consequences, the present dissertation analyzes outcomes with long-term consequences for future generations. Although there is research on the effects of different time horizons for the realization of negotiation outcomes, this strand of literature has only considered negotiation outcomes which affected the negotiation partners involved (e.g., Henderson *et al.*, 2006; Okhuysen and Bonner, 2005; Okhuysen *et al.*, 2003).⁴ Therefore, studies on the influence of negotiation outcomes with long-term consequences for future generations are lacking.

Rather, this dissertation is informed by the literature on intergenerational dilemmas. Intergenerational dilemmas consist of decisions entailing a trade-off between one's own present self-interest and future generations' interests (for a review, see Wade-Benzoni and Plunkett Tost, 2009). Previous research showed that individuals can identify themselves with future generations when they perceive future generations as a part of their ingroup (Wade-Benzoni, 2008; Wade-Benzoni and Plunkett Tost, 2009). This so-called intergenerational identification leads to an enhancement of intergenerational beneficence (Wade-Benzoni and Plunkett Tost, 2009). The extent of intergenerational identification depends on several factors, such as social group identity, the decision maker's striving for self-enhancement, the decision maker's integral needs, the specificity with which future generations are identified, decision framing, or connections with previous generations (Wade-Benzoni, 2003; Wade-Benzoni and Plunkett Tost, 2009).

⁴ Other research on the effects of time in negotiations focused on the investigation of time pressure (for a review on temporal aspects in negotiations, see Li *et al.*, 2007).

1.2.4 Organizational Factors

As outlined in section 1.1.2, the dissertation at hand considers the influence of the following organizational factors on outcomes of dyadic intra-organizational negotiations with different consequences in temporal terms: relative performance information, unequal distribution of power as associated with the assignment of hierarchical roles, corporate guidelines, the concept of a representative of future generations, and this representative's incentive system. While the former three factors refer to negotiations that yield outcomes with short-term consequences, the latter two factors concern negotiations that yield outcomes with long-term consequences. Therefore, this section depicts the definition of the underlying theoretical concepts and the current state of research.

1.2.4.1 Relative Performance Information

With regard to negotiations that yield outcomes with short-term consequences, the present dissertation captures the influence of relative performance information in the form of information on which negotiator in a dyad is the better or worse performer in terms of real-effort toward the joint production of a surplus that has to be distributed (see Karagözoğlu and Riedl, 2015).⁵ According to previous research, an equal split of the surplus is a common distribution norm when negotiators are informed that they have equally contributed to the surplus to be distributed (Karagözoğlu and Riedl, 2015; see also Fischbacher *et al.*, 2009). In contrast, information on unequal performance yields outcomes that are equitable to the performance. That is, in line with predictions from Equity Theory (Adams, 1965; Güth, 1994; Homans, 1961; Selten, 1978), the provision of relative performance information leads to negotiation agreements that favor the better performer (Karagözoğlu and Riedl, 2015). Likewise, better performers reach higher payoffs in ultimatum games (Fischbacher *et al.*, 2009). However, negotiators tend to exhibit self-serving biases. While own high performance leads negotiators to prefer equity, own low performance yields a preference for equality (Bediou *et al.*, 2012; Bediou and Scherer, 2014; see also Feng *et al.*, 2013).

Furthermore, previous research investigated the influence of performance information on outcomes when power is unequally distributed. In dictator games, individuals in the role of the

⁵ Besides individual contributions to a jointly produced surplus in terms of real-effort, there is also literature on contributions in terms of monetary investments (e.g., Cappelen *et al.*, 2007; Gantner *et al.*, 2001; for a review, see Karagözoğlu, 2012). Furthermore, there are studies on assigned contributions to an endowment which has to be distributed (e.g., Sondak *et al.*, 1999). As the present dissertation focusses on real-effort, these strands of literature will not be discussed.

dictator have ultimate power because they unilaterally determine the distribution of the surplus between themselves and a recipient. Dictators were found to exploit their power when they had exclusively produced the surplus (Cherry *et al.*, 2002), or when they had contributed a larger share (Feng *et al.*, 2013). However, when the recipient produces the surplus, this person is at least rewarded for making an effort (Frohlich *et al.*, 2004; Rode and Le Menestrel, 2011), or even receives more than the equal split (Oxoby and Spraggon, 2008).

Besides the mere influence of performance information on negotiation outcomes, performance information might also serve as a meritocratic legitimization for assigning advantageous or powerful and disadvantageous or powerless negotiator roles. As such a role assignment is based on objective quantitative methods and formalized decision rules, it might be considered as fair (Arvey and Renz, 1992), and therefore yield negotiation outcomes that favor legitimately privileged negotiators (see Fleiß, 2015). In line with this reasoning, empirical research showed that earning the roles in ultimatum and dictator games according to performance in a pre-negotiation real-effort task results in higher outcomes for the advantaged better performing negotiator (Childs and Siebert, 2018; Fleiß, 2015; Hoffman *et al.*, 1994; Hoffman and Spitzer, 1985; Polzer *et al.*, 1993).

In summary, information on contributions to the joint production of a surplus that has to be divided by negotiation yields negotiation outcomes favoring better performers. However, the effect of performance information is influenced by negotiation power in such a way that powerful negotiators tend to reach higher outcomes even if they have contributed less or not at all. Finally, in the case that performance information is applied as a promotion mechanism, better performers in privileged positions reach more favorable negotiation outcomes than negotiators who are randomly assigned to privileged positions.

1.2.4.2 Unequal Distribution of Power

This dissertation addresses the impact of an unequal distribution of power based on the assignment of hierarchical roles in negotiations that yield outcomes with short-term consequences. Power is an important factor in negotiation (De Dreu and Van Kleef, 2004). In general, there are several models of power that describe power as a dyadic concept (for reviews, see DeRue *et al.*, 2009; Kim *et al.*, 2005). According to Emerson (1962, p. 32), “power is a property of the social relation” that is characterized by the mutual dependence between parties. Besides this general perspective, Galinsky *et al.* (2017, p. 606) define negotiation power as “the probability that a negotiator will influence a negotiation outcome in the direction of his or her ideal outcome.”

In negotiation research, power has been operationalized in several ways. The most common operationalization is the Best Alternative to a Negotiated Agreement (BATNA; Fisher and Ury, 1981; Overbeck and Kim, 2013), i.e. the outcome that a negotiator receives in the case of a negotiation impasse (see Wong and Howard, 2017). Further operationalizations are the number of possible negotiation partners (e.g., Mannix and Neale, 1993; McAlister *et al.*, 1986; Olekalns, 1991), the presence of an exit option (e.g., Giebels *et al.*, 2000), the number of controlled resources (e.g., Blader and Chen, 2012, Study 5), and authority (e.g., Tripp, 1993). While the former manipulations refer to dependency as outlined above, power in terms of authority primarily arises from official positions and comprises legitimacy to exercise power due to these positions (Astley and Sachdeva, 1984; Tripp, 1993).

There is already extensive research on the influence of power imbalances and their interaction with other factors on negotiation outcomes (for reviews, see Brett and Thompson, 2016; Overbeck and Kim, 2013). Overall, high power negotiators tend to reach higher individual outcomes than low power negotiators (e.g., Giebels *et al.*, 2000; McAlister *et al.*, 1986; Olekalns, 1991; Pinkley *et al.*, 1994). However, when one negotiation partner is powerful and the counterpart is completely powerless, powerful negotiators' offers increase due to feelings of responsibility (Handgraaf *et al.*, 2008). With regard to joint outcomes, some studies found an unequal distribution of power to yield higher joint outcomes (e.g., Pinkley *et al.*, 1994; Sondak and Bazerman, 1991; Wei and Luo, 2012), while others showed that power symmetry leads to higher joint outcomes (e.g., Giebels *et al.*, 2000; Mannix and Neale, 1993; McAlister *et al.*, 1986). In response to these contradictory results, Wolfe and McGinn (2005) revealed that objective power in terms of one's own BATNA drives individual negotiation outcomes, whereas perceptions of relative power in the form of perceived differences between one's own and the counterpart's BATNA direct joint outcomes.

Furthermore, research analyzed the influence of earned negotiation power on negotiation outcomes. According to that, earned power leads to the exploitation of this power (e.g., Hoffman *et al.*, 1994), at least when instructions emphasize that exploitation is acceptable behavior (Hoffman and Spitzer, 1985), or when power corresponds to more than half of the resources to be allocated (Anbarci and Feltovich, 2018).

In conclusion, it can be noted that more powerful negotiators tend to reach higher individual outcomes than less powerful negotiators, especially when both negotiation partners are aware of this power imbalance or when the power position has been earned. This is in line with the reasoning by Kabanoff (1991) stating that power differences lead negotiation parties

to prefer the distributive principle of equity, which favors the more powerful party (see also Druckman and Wagner, 2016).

1.2.4.3 Corporate Guidelines

With respect to negotiations that yield outcomes with short-term consequences, the dissertation at hand captures the effect of corporate guidelines in the form of a code of conduct and information on negotiation outcomes compatible with the code from the organization's perspective. In general, guidelines can serve as both prescriptive social norms specifying appropriate behavior and statements on expected performance in uncertain situations (Kimmerle *et al.*, 2011; for further definitions of social norms, see Crawford and Ostrom, 1995; Cummins, 1998). As many negotiation situations are ethically ambiguous, corporate guidelines might indicate organizational expectations by which negotiators can reduce uncertainty about the moral acceptance of specific tactics (Aquino, 1998; see also Jones, 1991), and therefore influence negotiators' behavior (Stawiski *et al.*, 2009).

The first component of the corporate guidelines considered, i.e. a code of conduct, is a common tool to capture and to communicate social norms in organizations (Coughlan, 2005; Erwin, 2011). In general, a code of conduct can be defined as a separate, written, formal document comprising ethical guidelines and moral standards that aim at guiding employees' and corporate behavior (Schwartz, 2004; Yallop, 2012).⁶ Nowadays, codes of conduct are a salient component of business organizations (Cowton and Thompson, 2000) that target the demonstration of the organization's concern for ethics, the transmission of the organization's ethical values to its members, and the influence of the members' ethical behavior (Wotruba *et al.*, 2001; see also Kaptein and Schwartz, 2008). Empirical results regarding the actual effectiveness of codes of conduct are mixed. While some studies showed codes of conduct to be effective, others found codes of conduct to be either ineffective or counterproductive, or to have mixed effects (for reviews, see Kaptein and Schwartz, 2008; Yallop, 2012). Furthermore, the effectiveness of a code of conduct depends on its embeddedness in the organization by management such as the presence of enforcement mechanisms and consistent supervisor behavior (Kaptein, 2011; Petersen and Krings, 2009).

The second component of the corporate guidelines captured, i.e. information on negotiation outcomes compatible with the code from the organization's perspective, provides a statement

⁶ In the literature, there are several definitions of a code of conduct (for a review, see Yallop, 2012), which is also referred to as code of ethics, code of practice, corporate credo, mission statement, or values statement (see Schwartz, 2004).

on expected performance in uncertain situations. Previous research showed that highly salient and high-level guidelines comprising a particular figure influence contributions in a social dilemma (Cress and Kimmerle, 2007; Kimmerle *et al.*, 2011; Kimmerle and Cress, 2013).

In negotiation research, the influence of corporate guidelines is hardly examined (see Agndal *et al.*, 2017). For instance, providing negotiators with organizational norms and practices that discourage self-interested behavior decreases the use of deception and yields more equal agreements (Aquino, 1998), as well as entails a greater use of neutralization strategies following deception (Aquino and Becker, 2005). In line with these results, Tripp (1993) showed that giving individuals the goal of appearing fair attenuates effects of power imbalances on individual negotiation outcomes.

In summary, it can be stated that corporate guidelines might influence negotiation outcomes in the case that they are unequivocal and salient.

1.2.4.4 Representative of Future Generations

This dissertation considers the influence of the appointment of a representative of future generations in negotiations that yield outcomes with long-term consequences. In general, rather than negotiating for one's own account, representatives negotiate on behalf of a constituency (Geiger, 2016). In particular, a representative of future generations is an individual in the present generation who acts on behalf of future generations in today's negotiations (Kamijo *et al.*, 2017). However, although there is previous research on representative negotiations (for a review, see Druckman, 2015), there are no studies on the appointment of a representative of future generations in today's negotiations. Therefore, the considerations with regard to the concept of the representative of future generations is based on literature on representative negotiations.

Reasons for the engagement of representatives are their specific expertise, their emotional detachment of the issues to be negotiated, and their tactical flexibility (Rubin and Sander, 1988). Representatives are employed in various contexts (for examples, see Reinders Folmer *et al.*, 2012) in order to decrease intergroup-tensions, to facilitate conflict resolution, or to reach advantageous agreements (Aaldering *et al.*, 2013). As negotiation results reached by representatives affect the outcomes of those who are represented and who are therefore dependent on a representative's actions, representatives face different challenges than individual negotiators or negotiation teams (Reinders Folmer *et al.*, 2012). That is, representatives are exposed to a boundary-role conflict, as they have to simultaneously cope

with both their constituencies' expectations and their negotiation counterparts' expectations and actions (Benton and Druckman, 1974; Frey and Adams, 1972; Gray and Wondolleck, 2013).

Previous research showed that representatives' negotiation behavior depends on various contextual factors (for reviews, see Chertkoff and Esser, 1976; Druckman, 1994, 2015; Reinders Folmer *et al.*, 2012). Overall, representatives tend to act more competitively than nonrepresentatives (e.g., Ben-Yoav and Pruitt, 1984; Benton and Druckman, 1974; Druckman, 1994; Druckman *et al.*, 1972; Organ, 1971; Vidmar, 1971), which leads to lower joint outcomes (Ben-Yoav and Pruitt, 1984). However, representatives behave cooperatively and reach higher joint outcomes when they believe their constituents favor such an approach (e.g., Benton and Druckman, 1974; Steinel *et al.*, 2009). Enzle *et al.* (1992) further showed that representatives flexibly adopt either competitive or cooperative negotiation tactics in order to reach beneficial outcomes for their constituents. Drawing on Social Identity Theory (SIT; Tajfel and Turner, 1986) and Social Categorization Theory (SCT; Turner *et al.*, 1987), more recent literature argues that such negotiation behavior is due to the representative's concern for being accepted by the group to be represented (Van Kleef *et al.*, 2007).

A representative of future generations is faced with the representation of a group which she or he is not a member of. Previous research on representative negotiation revealed that when representatives are not members of the groups being represented and do not take part in developing the group's position, they are less committed to and deviate more from their constituency's position (Breugh and Klimoski, 1977, 1981). However, research on intergenerational sustainability dilemma games showed that appointing a representative of future generations yields resource allocations that benefit future generations (Kamijo *et al.*, 2017; Shahrier *et al.*, 2017).

Summarizing, representatives tend to follow their constituencies' orientations in order to achieve beneficial outcomes. However, this trend seems to be undermined when representatives are not members of the groups to be represented.

1.2.4.5 Incentive System of the Representative of Future Generations

Besides the mere appointment of a representative of future generations, the present dissertation captures the influence of this person's incentive system in negotiations that yield outcomes with long-term consequences. Representatives of future generations, while being members of the present generation, act on behalf of future generations. However, one cannot assume that future generations' interests will be identical to those of the present generation (O'Neill, 2001; Wade-Benzoni, 2008). Rather, the representatives' goals and financial self-interests can be different

from those of the represented group (Aaldering *et al.*, 2013; Kesner *et al.*, 1994). Therefore, representatives' negotiation behavior and outcomes might depend on their incentives to fulfill their role. Previous research on representative negotiations showed that when representatives' financial interests are misaligned with those of their constituencies, they primarily pursue their self-interest even by approving a reduction in their constituencies' outcome (Bazerman *et al.*, 1992; Valley *et al.*, 1992). However, Aaldering *et al.* (2013) revealed that the influence of interest misalignment between the representative and the constituency is a function of the representative's SVO.

In conclusion, representatives tend to pursue their self-interests as a function of their SVO when their interests are misaligned with those of their constituencies.

1.2.5 Negotiators' Individual Factors

As outlined in section 1.1.2, the dissertation at hand captures the influence of the following negotiators' individual factors on outcomes of dyadic intra-organizational negotiations with different consequences in temporal terms: subjective entitlements, future orientation and SVO. While the former factor refers to negotiations that yield outcomes with short-term consequences, the latter two factors concern negotiations that yield outcomes with long-term consequences. Therefore, this section delineates the definition of the underlying theoretical concepts and the current state of research.

1.2.5.1 Subjective Entitlements

This dissertation considers the impact of subjective entitlements to a certain share of a jointly produced surplus in negotiations that yield outcomes with short-term consequences. These subjective entitlements might influence the application of distributive justice principles in such negotiations (Karagözoğlu and Riedl, 2015). The concept of entitlements has been applied in different disciplines such as law, philosophy, political science, marketing, management, social psychology, and anthropology (Tomlinson, 2013; for a review, see Naumann *et al.*, 2002). All these fields have in common that entitlements refer to what individuals perceive that they deserve (Naumann *et al.*, 2002).⁷ Subjective entitlements, in particular, are defined as “rights,

⁷ There is also literature suggesting that entitlements and deservingness are distinct concepts. According to that, deservingness is based on an individual's earnings or achievements that are in the individual's internal control, whereas entitlement relates to an external prescriptive frame of reference that is dependent on causes outside of an individual's controllable actions (for a discussion, see Tomlinson, 2013). However, as this dissertation particularly captures subjective entitlements, this distinction will not be further discussed.

as perceived by the individuals. They are not, however, abstract legal rights. Rather, they denote the subjectively perceived rights that go along with a motivational disposition to defend them” (Schlicht, 2016, p. 3). As such, they represent a type of moral property rights (Gächter and Riedl, 2005) that influence social and economic interactions by affecting valuations and eliciting behavior (Schlicht, 2016). Subjective entitlements might be derived from different sources, such as negotiation power in the form of outside options, the status quo, historical claims, or custom (Hennig-Schmidt and Walkowitz, 2017) as well as actual or perceived contributions to a joint surplus (Karagözoğlu and Riedl, 2015) or the assignment of hierarchical positions (De Cremer, 2003; De Cremer and Van Dijk, 2005, 2008). However, there are only some models that take subjective entitlements explicitly into account (e.g., Birkeland and Tungodden, 2014; Tutić and Liebe, 2009).

There are only few studies that directly measured subjective entitlements and their impact on negotiation processes and outcomes. This research showed that earned infeasible objective claims to an amount to be divided up and relative performance information concerning the contribution to a jointly produced surplus elicit subjective entitlements that shape negotiation outcomes (Gächter and Riedl, 2005; Karagözoğlu and Riedl, 2015). Beyond the negotiation context, randomly assigning the role of the superior was found to elicit entitlements to take more than an equal share from a resource (De Cremer, 2003; De Cremer and Van Dijk, 2005).

Previous research mostly indirectly studied the influence of subjective entitlements on negotiation outcomes by pitting outcomes against fairness norms such as equality and equity. This literature revealed that negotiation outcomes favor negotiators with higher rather than lower randomly assigned outside options (e.g., Hennig-Schmidt and Walkowitz, 2017; see also Ciampaglia *et al.*, 2014), higher compared to lower contributions to a (jointly) produced surplus (e.g., Fischbacher *et al.*, 2009), and earned versus assigned roles (e.g., Fleiß, 2015; Hoffman *et al.*, 1994).

Furthermore, former studies investigated whether subjective entitlements were self-servingly biased. While some studies found strong biases (e.g., Feng *et al.*, 2013; Gantner *et al.*, 2016; Hennig-Schmidt *et al.*, 2018; Hennig-Schmidt and Walkowitz, 2017), others only found modest biases (e.g., Gächter and Riedl, 2005).

In conclusion, it can be stated that potentially self-servingly biased subjective entitlements can be derived from different sources, such as contributions to a jointly produced surplus, negotiation power, or positions. These subjective entitlements tend to lead negotiation outcomes to reflect the equity principle.

1.2.5.2 Future Orientation

With regard to negotiations that yield outcomes with long-term consequences, the present dissertation captures the effect of negotiators' future orientation. In general, future orientation can be defined as "a general preoccupation with the future or future events" (Strathman *et al.*, 1994, p. 742). This orientation encompasses individuals' thinking and acting upon the future, such as thinking about what might happen in the future, future preferences and goals, and effort to realize their goals (Nurmi, 2005; see also Nurmi, 1991). There are several concepts of and methods to measure future orientation (for reviews, see Nurmi, 2005; Strathman *et al.*, 1994). One construct that captures individuals' concern with future as opposed to immediate consequences is that of concern for future consequences (CFC; Joireman *et al.*, 2008; Strathman *et al.*, 1994). Thus, when people exhibit a high degree of CFC, their actions are expected to be guided by considering future consequences of their current behavior, whereas people low in CFC are expected to be driven by their immediate needs and concerns (Joireman *et al.*, 2008).

The influence of CFC has been studied in various areas (for a review, see Joireman *et al.*, 2008), including the examination of pro-environmental behavior in social dilemmas (for a review, see Joireman, 2005). According to that, future-oriented people in comparison to present-oriented people tend to behave more pro-environmentally in the case of engagement in pro-environmental political activism (e.g., Joireman *et al.*, 2001), recycling (e.g., Ebreo and Vining, 2001; Lindsay and Strathman, 1997), and utilization of public transportation (e.g., Joireman *et al.*, 2004). However, Carmi (2013) showed that future orientation only positively influences pro-environmental behavior if this leads to personal benefit (Carmi, 2013).

Summarizing, future orientation tends to yield pro-environmental behavior. Indeed, this effect might depend on whether this behavior is associated with personal benefits.

1.2.5.3 Social Value Orientation

This dissertation considers the effect of negotiators' SVO in negotiations that yield outcomes with long-term consequences. In contrast to social motivations that are considered as states and are prone to manipulation (Bogaert *et al.*, 2008), SVO is a conceptualization of stable social preferences (Griesinger and Livingston, 1973; McClintock, 1972) that is rooted in the seminal work by Messick and McClintock (1968), and is incorporated in several broader theoretical frameworks (for a review, see Murphy and Ackermann, 2014). As such, SVO is "defined in terms of the weights people assign to their own and others' outcomes in situations of interdependence" (Balliet *et al.*, 2009, p. 533). Hence, individuals are classified according to the extent to which they choose to forgo their own outcomes in order to benefit others (Murphy

and Ackermann, 2014). According to Murphy *et al.* (2011), four SVO types can be distinguished: altruists try to maximize others' outcomes; prosocial or cooperative individuals tend to maximize joint outcomes; individualists only care about their own outcomes without regard to others' outcomes; competitors are inclined to maximize the difference between their own and others' outcomes (Kuhlman and Marshello, 1975; Liebrand and Van Run, 1985; McClintock, 1972).⁸

With regard to negotiations (for reviews, see Brett and Thompson, 2016; De Dreu *et al.*, 2000), previous research showed that compared to proselves, prosocial individual negotiators prefer a cooperative rather than competitive approach (De Dreu and Boles, 1998), place lower demands, make greater concessions (De Dreu and Van Lange, 1995), and are more concerned with their negotiation partners' goals (Nauta *et al.*, 2002). Furthermore, one study examined the influence of representatives' SVO in situations where their financial interests are misaligned with those of their constituencies. According to that, prosocial representatives are more willing to cede their self-interest when this behavior only benefits their constituencies, whereas proselves primarily engage in self-interested behavior (Aaldering *et al.*, 2013; for a description, see De Dreu *et al.*, 2014).

As the dissertation at hand captures the influence of SVO on negotiation outcomes with long-term consequences, former findings on the impact of SVO on pro-environmental behavior inform this research. While some studies did not find SVO to influence pro-environmental behavior (e.g., Joireman *et al.*, 2001, 2004), others revealed that compared to proselves, prosocials are more influenced by an awareness of collective environmental consequences (Gärling *et al.*, 2003). Furthermore, prosocials have lower perceptions of personal costs associated with a political program that aims to reduce environmental problems, and are more likely to support such a program (Cameron *et al.*, 1998).

In summary, compared to proselves, prosocials behave more cooperatively and are more concerned with their negotiation partners' goals. With respect to representative negotiators, prosocials tend to sacrifice their self-interest if this behavior serves their constituencies, while proselves pursue their self-interests. Finally, prosocials tend to focus less on personal environmental consequences and costs and might engage in more pro-environmental behavior than proselves.

⁸ Messick and McClintock (1968) originally differentiated between prosocials, individualists and competitors. In the literature, altruists and prosocials are often summarized into a prosocial category, and individualists and competitors are often consolidated into a prosself category (Balliet *et al.*, 2009; Bogaert *et al.*, 2008).

1.3 Research Methodology

The present dissertation consists of three laboratory experiments in order to analyze the mutual influence of organizational and negotiators' individual factors on outcomes of dyadic intra-organizational negotiations with different consequences in temporal terms. The experiments were programmed in the Zurich Toolbox for Ready-Made Economic Experiments (z-Tree; Fischbacher, 2007) and conducted in the experimental laboratory AIXperiment at RWTH Aachen University, Germany. Participants were recruited using the Online Recruitment Software for Economic Experiments (ORSEE; Greiner, 2015). This chapter depicts reasons for using laboratory experiments to answer the underlying research questions as well as the experimental designs and the manipulated factors.

1.3.1 Rationale for Applying Laboratory Experiments

Laboratory experiments provide the opportunity to create the participants' decision environment by holding most factors which influence behavior constant and by manipulating only factors of interest, i.e. independent variables, in order to measure their effects on the dependent variable (Bercovitch, 2004; Croson and Gächter, 2010). That is, experimenters can control the order in which participants can act, the set of information that the participants possess when making decisions, and the payments associated with the decisions made (Falk and Heckman, 2009). Thus, laboratory experiments constitute a controlled data generating process which enables researchers to draw causal inferences (Croson and Gächter, 2010) and thereby to test theories (Croson, 2002). Furthermore, laboratory experiments can be replicated to verify and reinterpret previous findings (Bercovitch, 2004; Croson, 2002).

Regarding the research model of this dissertation, laboratory experiments allow for constructing the intra-organizational context in which the negotiations take place (Falk and Heckman, 2009). Hence, the assignment of different negotiator roles and the resulting relationship between negotiation partners are untainted by other factors, such as previous interactions, that might otherwise impact results. Accordingly, the influence of negotiation partners acting either as individual negotiators in (non-)hierarchical relationships (Research Papers 1 and 2) or as representative negotiators (Research Paper 3) on negotiation outcomes can be examined.

Furthermore, laboratory experiments provide the opportunity to manipulate the organizational factors surrounding the negotiations in order to analyze their influence on negotiation outcomes (Bercovitch, 2004). Thus, laboratory experiments enable varying the provision of relative performance information and the assignment procedure of hierarchical

roles (Research Paper 1), the presentation of corporate guidelines to employees in different hierarchical roles (Research Paper 2), and the appointment of a representative of future generations and this person's incentive system (Research Paper 3).

Finally, laboratory experiments are useful to measure individual factors and preferences (Croson and Gächter, 2010). Hence, it is possible to identify the effect of perceptions that are evoked by the specific intra-organizational context, such as subjective entitlements (Research Paper 1), and the influence of personality traits, such as future orientation and SVO (Research Paper 3), on negotiation outcomes.

1.3.2 Experimental Designs and Manipulated Factors

In this section, the features that all three experiments had in common are described first. The special features of the experiments are depicted in the following subsections.

In general, the three experiments consisted of three major parts, i.e. an Information Phase, a Negotiation Phase, and a post-negotiation questionnaire. In the **Information Phase**, the participants were informed of the intra-organizational setting, the assignment of negotiator roles, the negotiation task, and the payment mechanism. The Information Phase was followed by several control questions which had to be answered correctly in order to proceed. Participants were then assigned to negotiator roles. The main part of the experiments comprised a **Negotiation Phase** in which randomly matched negotiator dyads had a given time to reach an agreement by making offers to each other via computer. The negotiation concluded when a mutual agreement was reached or when the negotiation time elapsed. A mutual agreement was reached when both negotiation partners made the same offer in direct succession. After the negotiation, participants answered a **post-negotiation questionnaire** comprising individual characteristics, attitudes, perceptions, and demographics. If negotiation dyads reached an agreement in considerably less than the time scheduled or considerably faster than other dyads did, they had to do math calculations framed as a cognition test to make sure that the other dyads were not disturbed. Finally, participants were paid individually. Table 1.1 (p. 25) gives an overview of the assigned negotiator roles, the manipulated factors, the negotiation tasks, and the dependent variables that were applied in the three experiments.

Table 1.1: Overview of the Experimental Designs in the Research Papers

Research Paper	Assigned Negotiator Roles	Manipulated Factors	Negotiation Task	Dependent Variables
1	Individual negotiators as partners in a work team	• Provision of relative performance information with an equal distribution of power (yes / no) • Assignment of hierarchical roles of the superior and the subordinate with an unequal distribution of power (yes / no)	Distributive negotiation concerning the allocation of the jointly produced salary budget	• Performance-specific subjective entitlements (winner's share) • Winner's share of the jointly produced salary budget • Role-specific subjective entitlements (superior's share) • Superior's share of the jointly produced salary budget
2	Individual negotiators in the hierarchical roles of the superior and the subordinate accompanied by an unequal distribution of power	• Presentation of corporate guidelines to the superior (yes / no) • Presentation of corporate guidelines to the subordinate (yes / no)	Integrative negotiation concerning the subordinate's incentive scheme	• Subordinate's total payoff • Difference between the superior's and the subordinate's total payoffs • Absolute combined deviation from the company optimum
3	Representative negotiators in the roles of the representative of future generations and the executive board member accompanied by an equal distribution of power	• Presence of a representative of future generations (yes / no) • Incentive system of the representative of future generations (financially penalizing / financially rewarding)	Distributive negotiation concerning the investment in a long-term emissions reduction	Investment in a long-term emissions reduction

1.3.2.1 Special Features of the Experimental Design of Research Paper 1

Research Paper 1 aimed at investigating whether and how the provision of relative performance information and the assignment of hierarchical roles influence subjective entitlements, and in turn distributive negotiations on the allocation of a jointly produced surplus. To this end, the experimental design was primarily based on the design employed by Karagözoğlu and Riedl (2015). Participants were randomly assigned to two-person work teams and individually performed a general knowledge quiz. The partners' accumulated performances determined the salary budget to be divided up in a negotiation between the partners. After being informed of the size of the salary budget and estimating one's own and one's partner's performances, the following factors of interest were manipulated: the provision of relative performance information about the participants' and their partners' performances in the general knowledge quiz and the assignment of hierarchical roles of superiors and subordinates. That is, participants were either informed whether they were the better performer (i.e. the winner) or the worse performer (i.e. the loser) in their work team, or they did not receive this information. Furthermore, participants were either assigned to the roles of the superior and the subordinate or they were not assigned to such roles. In the case that hierarchical roles were assigned, the assignment procedure was contingent on the provision of relative performance information. That is, when no relative performance information was provided, the role assignment was independent of the participants' performance in the general knowledge quiz. In contrast, when relative performance information was provided, the winner took on the role of the superior, while the loser took on the role of the subordinate. To make the hierarchical roles more salient and realistic, a natural power was implemented. That is, if dyads did not reach an agreement during the negotiation, participants in the role of the superior were provided with the ultimate decision-making power on the distribution of the salary budget. Following the experimental manipulations, participants stated their subjective entitlements by giving their opinion concerning the fair distribution of the salary budget from the vantage point of a noninvolved neutral arbitrator (see also Babcock *et al.*, 1995; Gächter and Riedl, 2005).

Work teams then negotiated the distribution of the jointly produced salary budget. If work teams did not reach an agreement in conditions without hierarchical roles, the salary budget was forfeited. In conditions with hierarchical roles, the participants in the role of the superior unilaterally determined the distribution of the salary budget. To check for the robustness of the main effects, the post-negotiation questionnaire contained, among others, constructs for measuring perceptions regarding procedural fairness and SVO (adopted from Murphy *et al.*, 2011). At the end of the experiment, subjects were paid according to their estimations of their

own and their partner's performance, and their individual negotiation outcomes plus a show-up fee.

Four dependent variables were analyzed. Regarding the investigation of performance-specific subjective entitlements and related negotiation outcomes, subjective entitlements and agreements were expressed in percentage shares to the winner. In the analysis of role-specific entitlements and associated negotiation outcomes, subjective entitlements and agreements were stated in percentage shares to the superior.

1.3.2.2 Special Features of the Experimental Design of Research Paper 2

The aim of Research Paper 2 was to analyze whether and how the presence of corporate guidelines influences negotiations between employees in different hierarchical positions that are accompanied by an unequal distribution of power. For this purpose, participants were randomly assigned to the roles of the superior and the subordinate. One superior and one subordinate each were randomly matched to form a negotiation dyad. To make the hierarchical roles more salient and realistic, an unequal distribution of power was implemented in the same manner as in Research Paper 1. Furthermore, the presentation of corporate guidelines consisting of a code of conduct (based on the code of conduct of Chevron, 2014), and information on negotiation outcomes compatible with the code, i.e. the company optimum, to the participants was manipulated: either no negotiation partner, the superior, the subordinate, or both negotiation partners were provided with the guidelines.

Superior-subordinate dyads then negotiated on the subordinate's incentive scheme consisting of the number of paid vacation days per month and the bonus pay per month (based on O'Connor *et al.*, 2005). This negotiation task was integrative by nature because negotiation partners valued the five possible levels of the issues differently which allowed for trade-offs to reach higher outcomes. Participants only received information on their own individual payoff schemes. Dyads had the opportunity to make offers to each other via computer accompanied by prewritten messages that were partly taken from O'Connor *et al.* (2005; based on Hilty and Carnevale, 1993) and partly generated to cover communicating the interest of acting according to the corporate guidelines. To check for the robustness of the main effects, among others, constructs for organizational commitment (OC) and SVO (adopted from Murphy *et al.*, 2011) were included in the post-negotiation questionnaire. Participants were paid based on their individual negotiation outcomes plus a show-up fee.

Three dependent variables were analyzed: the subordinate's total payoff resulting from the negotiated issue levels, the difference between the superior's and the subordinate's total payoffs

associated with the negotiated issue levels, and the absolute combined deviation of the negotiated issue levels from the company optimum.

1.3.2.3 Special Features of the Experimental Design of Research Paper 3

The objective of Research Paper 3 was to examine whether and how the appointment of a representative of future generations, the representative's incentive system, and negotiators' individual factors, such as future orientation and SVO, influence negotiations on investments in intergenerational justice materialized in investments in long-term emissions reductions. For this purpose, participants received an initial endowment and had to jointly decide which integer amount of the endowment each of them would invest in a long-term emissions reduction.

Three conditions were examined: In the control condition, negotiation dyads comprised participants taking on the role of an executive board member. In the two other conditions, negotiation dyads consisted of one participant assigned to the role of the representative of future generations and one participant assigned to the role of the executive board member. The latter two conditions varied in the representative's incentive system. That is, in one condition, the representative's payoff corresponded to the residual between the initial endowment and the negotiated investment and thus financially penalized increases in the investment. In the other condition, the representative's payoff equaled the negotiated investment and thus financially rewarded increases in the investment. Executive board members' payoffs corresponded to the residual between the endowment and the negotiated investment irrespective of the condition. The role-dependent payoff functions were made common knowledge. To make the assigned roles more salient, participants were provided with detailed role descriptions emphasizing which kind of behavior would lead to the fulfilment of one's role. Furthermore, participants were informed that the negotiated investment would be donated to one of two actually existing organizations which target the sustainability of living conditions for future generations. Descriptions of both organizations were presented to all participants. While in the control condition, the organization was randomly selected, participants in the role of the representative of future generations chose the organization in the two other conditions in order to increase their role commitment.

During the negotiation, negotiation partners had the opportunity to make offers to each other via computer accompanied by prewritten messages that were inspired by O'Connor *et al.* (2005; based on Hilty and Carnevale, 1993). If negotiation dyads did not reach an agreement within the given time, the initial endowment was forfeited. In order to examine the influence of negotiators' individual factors on negotiation outcomes, participants answered a post-

negotiation questionnaire which included, among others, constructs for CFC (adopted from Joireman *et al.*, 2008, based on Strathman *et al.*, 1994) and SVO (adopted from Murphy *et al.*, 2011). Finally, participants were paid based on their individual negotiation outcomes plus a show-up fee, and negotiated investments were donated to the respective organizations.

One dependent variable was analyzed: the investment which the negotiation partners jointly decided to invest in a long-term emissions reduction.

1.4 Theoretical Foundations, Hypotheses, and Key Findings

As outlined in section 1.1.3, the underlying research model of the present dissertation is analyzed by three research papers. This chapter summarizes the theoretical foundations, main hypotheses, and key findings of each research paper.

1.4.1 Theoretical Foundations, Hypotheses, and Key Findings of Research Paper 1

The hypotheses on the influence of relative performance information and the assignment of hierarchical roles on subjective entitlements, and in turn on negotiations on a jointly produced surplus are based on Equity Theory (Adams, 1965; Güth, 1994; Homans, 1961; Selten, 1978) and Role Schema Theory (Fiske, 1993).

The provision of relative performance information concerning the contribution to a jointly produced surplus elicits subjective entitlements that shape negotiation outcomes (Karagözoğlu and Riedl, 2015). In line with Equity Theory (Adams, 1965; Güth, 1994; Homans, 1961; Selten, 1978), when negotiators are informed of performance differences, better performers receive a larger share of a jointly produced surplus than worse performers (Karagözoğlu and Riedl, 2015; see also Fischbacher *et al.*, 2009). Consequently, when relative performance information is provided, negotiators are assumed to exhibit performance-specific subjective entitlements that lead to agreements favoring the better performers. However, these entitlements might be mutually inconsistent due to self-serving biases (Feng *et al.*, 2013; Karagözoğlu and Riedl, 2015).

According to Role Schema Theory (Fiske, 1993), taking on a certain role automatically activates role schemata that carry expectations of rights and privileges associated with this role (De Cremer, 2003; Fiske, 1993; Fiske and Taylor, 1991; Greenberg and Ganegoda, 2010). Thus, superiors feel entitled to more resources than their subordinates due to their larger responsibilities (De Cremer, 2003; De Cremer and Van Dijk, 2005; Samuelson and Allison, 1994; Stouten *et al.*, 2005). Moreover, the equity norm is mostly applied in power-differentiated relations because powerful individuals feel entitled to a larger share of outcomes, and weaker

individuals perceive distributions favoring powerful people as fair (Kabanoff, 1991). Therefore, the assignment of hierarchical roles accompanied by an unequal distribution of power is hypothesized to elicit role-specific subjective entitlements that lead agreements to favor the powerful superiors. However, these entitlements might be colored by self-serving biases (Hennig-Schmidt *et al.*, 2018).

Finally, the relationship between performance-specific and role-specific subjective entitlements and related negotiation outcomes is likely to be influenced by the assignment procedure of hierarchical roles. That is, when the assignment of hierarchical roles is based on relative performance information, negotiators perceive their roles to be legitimate (Arvey and Renz, 1992). Hence, performance-specific and role-specific subjective entitlements might coincide and be reinforced by each another. Consequently, negotiation outcomes are thought to favor better performers in the role of the superior more than better performers when only relative performance information is provided.

In contrast, when hierarchical roles are randomly assigned, people might perceive their roles to be illegitimate with the result that role-specific subjective entitlements elicited by the random assignment of hierarchical roles are weaker than performance-specific subjective entitlements induced by the provision of relative performance information. As a result, negotiation outcomes are assumed to favor superiors less than better performers in the case of the provision of relative performance information. The deduced hypotheses and corresponding evidence are presented in Table 1.2 (p. 31).

With respect to performance-specific subjective entitlements, individuals exhibit significantly stronger entitlements when relative performance information is made available (first part of H1a). However, winners' subjective entitlements do not only differ as a function of the provision of relative performance information, but also depending on the assignment of hierarchical roles. In addition, winners' and losers' subjective entitlements are mutually inconsistent, but irrespective of the provision of relative performance information (second part of H1a). Furthermore, while agreements do not significantly differ from the equal split when no relative performance information is available, agreements are significantly skewed in favor of winners in the presence of relative performance information (H1b). With respect to the influence of performance-specific subjective entitlements on agreements, winners' and losers' subjective entitlements significantly impact agreements (H1c). However, these effects also occur when no relative performance information is provided. Thus, providing information on relative performance differences elicits stronger performance-specific subjective entitlements and leads agreements to favor the better performers.

Table 1.2: Hypotheses of Research Paper 1

Hypotheses	Evidence
H1. a. Individuals exhibit performance-specific subjective entitlements when relative performance information is available. Better performers attribute stronger entitlements to themselves than worse performers attribute to better performers. b. When no relative performance information is provided, agreements do not differ from the equal split. When relative performance information is provided, agreements differ from the equal split in favor of the better performers. c. When relative performance information is provided, agreements are positively correlated with each negotiator's performance-specific subjective entitlements. When no relative performance information is provided, no such correlation exists.	partially supported supported partially supported
H2. a. Individuals exhibit role-specific subjective entitlements when hierarchical roles are assigned. Superiors attribute stronger entitlements to themselves than subordinates attribute to their superiors. b. With the assignment of hierarchical roles, agreements differ from the equal split in favor of the superiors. c. With the assignment of hierarchical roles, agreements are positively correlated with each negotiator's role-specific subjective entitlements.	partially supported supported partially supported
H3. a. Subjective entitlements are stronger when the provision of relative performance information is related to the assignment of hierarchical roles than when only relative performance information is provided. b. When the provision of relative performance information is related to the assignment of hierarchical roles, agreements differ more from the equal split in favor of the superiors than when only relative performance information is provided.	partially supported supported
H4. a. Role-specific subjective entitlements elicited by the random assignment of hierarchical roles are weaker than performance-specific subjective entitlements elicited by relative performance information. b. Randomly assigned superiors are favored less by negotiation outcomes than better performers when relative performance information is provided.	partially supported not supported

Regarding role-specific subjective entitlements, subordinates only exhibit significant subjective entitlements when the assignment of hierarchical roles is linked to the provision of relative performance information, while superiors display such subjective entitlements irrespective of the role assignment procedure (first part of H2a). Furthermore, superiors' and subordinates' role-specific subjective entitlements are mutually inconsistent (second part of H2a). Moreover, agreements are significantly skewed in favor of superiors (H2b). However, superiors' and subordinates' role-specific subjective entitlements only significantly influence agreements when the role assignment is accompanied by relative performance information (H2c). Hence, although the elicitation of role-specific subjective entitlements is not

unanimously independent of the type of the role assignment procedure, agreements favor superiors irrespective of the role assignment procedure.

With respect to the relation between performance-specific and role-specific subjective entitlements, subjective entitlements and agreements in the case of providing relative performance information are compared with entitlements and agreements in the case of role assignment related to relative performance information first. The results show that winners' subjective entitlements significantly differ from subjective entitlements of winners in the role of the superior, while there is no significant difference between losers' subjective entitlements and entitlements of losers in the role of the subordinate (H3a). Furthermore, agreements favor winners in the role of the superior significantly more than winners when only relative performance information is provided (H3b). Second, the provision of relative performance information and the random assignment of hierarchical roles are compared. Whereas winners and superiors exhibit statistically similar subjective entitlements, losers' and subordinates' subjective entitlements significantly deviate from each other (H4a). However, agreements do not favor winners significantly more than superiors (H4b). Consequently, comparisons between the effects of providing relative performance information and the assignment of hierarchical roles reveal different patterns. That is, in relation to the exclusive provision of relative performance information, the role assignment which is related to relative performance information tends to reinforce the privileged negotiators' entitlements and their advantageous negotiation outcomes. In contrast, the exclusive provision of relative performance information and the random role assignment have different effects on the unprivileged negotiators' entitlements, although both factors yield agreements that favor the privileged party in a similar way.

1.4.2 Theoretical Foundations, Hypotheses, and Key Findings of Research Paper 2

In order to analyze the effectiveness of corporate guidelines in dyadic intra-organizational negotiations that are shaped by hierarchical relationships associated with power imbalances, the related hypotheses are based on Self-Determination Theory (SDT; Ryan and Deci, 2000). According to this theory, people tend to internalize values and norms if their innate psychological needs for autonomy, relatedness and competence are satisfied (Chirkov *et al.*, 2005; Deci and Ryan, 2000).

Corporate guidelines by themselves might satisfy the need for autonomy by providing a meaningful rationale for requested behavior (Deci *et al.*, 1994) but leaving employees free to decide to commit to these norms (Balakrishnan *et al.*, 2017). Moreover, corporate guidelines

are assumed to promote a feeling of relatedness as they address people's aspirations for behaviors valued by their social groups (Ryan and Deci, 2000, 2011) by providing the basis for such behaviors and by building trust (Balakrishnan *et al.*, 2017).

However, the employees' internalization of corporate guidelines is hypothesized to depend on the need satisfaction based on the recipients' hierarchical roles. That is, the role of the superior supports the need for autonomy and the internalization of organizational norms (Overbeck and Park, 2006) because superiors have more control over resources and are less dependent on others (Lammers and Galinsky, 2009). Furthermore, as power is associated with responsibility for subordinates and the achievement of collective goals (Lammers *et al.*, 2016), feelings of relatedness to the organization and its members and therefore the dedication to organizational norms and goals might increase (Ashforth and Mael, 1989; Meyer *et al.*, 2006). Consequently, negotiation outcomes might not exclusively favor powerful superiors, but shift towards more favorable outcomes for subordinates if the superior receives the corporate guidelines. In contrast, subordinates do not have control over valued resources with the result that their sense of autonomy is undermined (Lammers *et al.*, 2016; Munduate and Medina, 2017). Additionally, they cannot display other-regarding behavior by ceding resources to their superiors, which leads to a lack of relatedness. Thus, the provision of corporate guidelines to subordinates might not influence negotiation outcomes. Nevertheless, as corporate guidelines are thought to emphasize interpersonal similarities, providing both negotiation partners with the corporate guidelines might have a stronger effect on outcomes than only providing the superior with the guidelines. Indeed, as superiors expect to be entitled to more resources than their subordinates (De Cremer, 2003; De Cremer and Van Dijk, 2005; Samuelson and Allison, 1994), their payoffs are hypothesized to be higher than subordinates' payoffs irrespective of the provision of the corporate guidelines.

Finally, as the corporate guidelines contain information on desirable negotiation outcomes from the company's perspective, and superiors are keen on meeting expectations in order to maintain their privileged position (Halevy *et al.*, 2011; Joshi and Fast, 2013), absolute deviations of negotiation outcomes from the company optimum will decrease if the superior is provided with the corporate guidelines. Furthermore, as outlined above, this effect is assumed to be stronger if the corporate guidelines are presented to both negotiation partners. The derived hypotheses and related evidence are depicted in Table 1.3 (p. 34).

Table 1.3: Hypotheses of Research Paper 2

Hypotheses	Evidence
H1. If the superior receives the corporate guidelines (i.e. a code of conduct and information on realizations compatible with the code), a. the subordinate's total payoff will increase. b. the difference between the superior's and the subordinate's total payoffs will decrease.	supported supported
H2. If both the superior and the subordinate receive the corporate guidelines (i.e. a code of conduct and information on realizations compatible with the code) compared to if only the superior receives the corporate guidelines, a. the subordinate's total payoff will be higher. b. the difference between the superior's and the subordinate's total payoffs will be lower.	not supported not supported
H3. The difference between the superior's and the subordinate's total payoffs will be greater than zero even in the presence of the corporate guidelines (i.e. a code of conduct and information on realizations compatible with the code).	partially supported
H4. If the superior receives the corporate guidelines (i.e. a code of conduct and information on realizations compatible with the code), absolute deviations of negotiation outcomes from the company optimum will decrease.	partially supported
H5. If both the superior and the subordinate receive the corporate guidelines (i.e. a code of conduct and information on realizations compatible with the code), absolute deviations of negotiation outcomes from the company optimum will be lower compared to if only the superior receives the corporate guidelines.	not supported

In line with the aforementioned argumentation based on SDT (Ryan and Deci, 2000), providing superiors with the corporate guidelines significantly increases the subordinate's total payoff (H1a), and significantly decreases the difference between the superior's and the subordinate's total payoffs (H1b). However, providing both negotiation partners with the corporate guidelines does not significantly impact the subordinate's total payoff and the difference between the superior's and the subordinate's total payoffs (H2a and H2b). Indeed, the difference between the superior's and the subordinate's total payoffs is found to be greater than zero, except for the situation where both negotiation partners are provided with the corporate guidelines (H3). Thus, it can be argued that superiors provided with the corporate guidelines feel a sense of autonomy and relatedness with the result that they are willing to cede a part of their economic outcomes to benefit their subordinates, even if they do not put themselves on an equal footing with them.

In contrast to the predictions, the absolute combined deviation of negotiation outcomes from the company optimum is not significantly influenced by providing superiors with the

corporate guidelines (H4). However, when analyzing the absolute combined deviation from the company optimum favoring superiors, the presentation of the corporate guidelines to superiors significantly decreases these deviations. Consequently, although negotiation outcomes do not unconditionally shift to the company optimum when superiors receive the corporate guidelines, superiors still tend to concede. Furthermore, providing both negotiation partners with the corporate guidelines does not significantly impact absolute combined deviation from the company optimum irrespective of whether they favored superiors (H5). Thus, the aforementioned findings are further supported in such a way that superiors provided with the corporate guidelines tend to follow the corporate guidelines by ceding a part of their economic outcomes and thereby moving negotiation results towards the company optimum.

1.4.3 Theoretical Foundations, Hypotheses, and Key Findings of Research Paper 3

The hypotheses concerning the effectiveness of appointing a representative of future generations in intra-organizational negotiations on investments in intergenerational justice are based on SIT (Tajfel and Turner, 1986) and SCT (Turner *et al.*, 1987). These theories state that people obtain an important aspect of their self-concept from their classification into social groups (Tajfel and Turner, 1986; Van Kleef *et al.*, 2007). Due to the natural desire to feel included in and accepted by one's group (Baumeister and Leary, 1995; Van Kleef *et al.*, 2007), the identification with a social group may lead to the attachment and the motivation to succeed in one's role within the social environment (Reitzes and Mutran, 2002). Concerning the representation of future generations, which necessitates a person to represent future generations while being a natural member of the present generation, intergenerational identification and the feeling of a common group identity are needed which arise when people perceive their ingroup as comprising not only the present but also future generations (Wade-Benzoni, 2003; Wade-Benzoni and Plunkett Tost, 2009). Consequently, providing representatives of future generations with a detailed role description which makes a common group identity salient might lead representatives to identify with future generations and thus to increase negotiated investments in intergenerational justice.

Regarding the influence of the representative's incentive system, the hypotheses are derived from Goal-Framing Theory (GFT; Lindenberg and Steg, 2007). According to that, human behavior is guided by one of three different goals, namely hedonic, gain, or normative goals (Lindenberg and Steg, 2007; Steg *et al.*, 2014). In any situation, one of these goals is focal and impacts actions, while the other goals either complement or question this focal goal (Lindenberg and Steg, 2007; Steg *et al.*, 2014). Particularly, normative goals become focal

when people agree with values that are activated by contextual cues (Steg *et al.*, 2014). As representatives of future generations are provided with a detailed role description, the normative goal of helping future generations is emphasized and supported by the hedonic goal of feeling good to help future generations, while the gain goal is put in the rear. Consequently, representatives are assumed to strive for increases in the negotiated investment in intergenerational justice even if increases in investments are financially penalized. However, if increases in the negotiated investment are financially rewarded, the representative's normative goal of helping future generations is not only supported by the hedonic goal of feeling good but also by the gain goal of realizing a financial profit, thus leading to even higher increases in investments.

Finally, negotiators' individual factors such as future orientation and SVO are investigated. Based on former research, future orientation and a prosocial value orientation are hypothesized to lead to higher negotiated investments irrespective of the assigned roles (for evidence on the effect of future orientation and SVO on pro-environmental behavior, see e.g., Joireman *et al.*, 2001, 2004). The related hypotheses and associated evidence are reported in Table 1.4 (p. 36).

Table 1.4: Hypotheses of Research Paper 3

Hypotheses	Evidence
H1. Negotiations between a representative of future generations and an executive board member will result in higher investments in intergenerational justice than negotiations between two executive board members.	supported
H2. Negotiations between a representative of future generations and an executive board member will result in higher investments in intergenerational justice than negotiations between two executive board members even if the incentive system of the representative of future generations financially penalizes higher investments.	supported
H3. Negotiations between a representative of future generations and an executive board member will result in higher investments in intergenerational justice if the incentive system of the representative of future generations financially rewards higher investments than if when the incentive system of the representative of future generations financially penalizes higher investments.	supported
H4. Irrespective of the assigned role, there will be a positive effect from negotiators' future orientation on the investments in intergenerational justice. That is, future-oriented negotiators will agree on higher investments in intergenerational justice than present-oriented negotiators.	partially supported
H5. Irrespective of the assigned role, there will be a positive effect of negotiators' SVO on the investments in intergenerational justice. That is, prosocial negotiators will agree on higher investments in intergenerational justice compared to proselves.	partially supported

In line with the predictions derived from SIT (Tajfel and Turner, 1986) and SCT (Turner *et al.*, 1987), the appointment of a representative of future generations is found to yield significantly higher investments in intergenerational justice (H1). Furthermore, consistent with the argumentation based on GFT (Lindenberg and Steg, 2007), this effect even holds when the representative of future generations is financially penalized for increasing the investment (H2). However, investments are even higher when the representative's incentive system financially rewards increases in the investment (H3). Thus, it can be assumed that assigning the role of a representative of future generations to one negotiation partner improves outcomes of negotiations affecting future generations' interests.

In contrast, the findings concerning the influence of negotiation partners' future orientation and SVO do only partially support the hypotheses, as the effects of these individual factors are a function of the representative's incentive system. That is, the representative's future orientation has a significantly positive effect on negotiated investments when the representative's incentive system financially penalizes increases in the investment, while the executive board member's future orientation leads to significantly higher investments in the case that the representative's incentive system financially rewards increases in the investment (H4). The same pattern is found for SVO with the representative's SVO significantly increasing the investment when the incentive system financially penalizes increases in the investment, and the executive board member's SVO having a significantly positive effect on investments in the case of an incentive system financially rewarding increases in the investment (H5). Consequently, it can be assumed that there is an interaction between representatives' individual factors and their underlying incentive system. While representatives' behavior seems to be guided by their future orientation and SVO when monetary incentives are absent, they seem to be driven by more selfish monetary motives in the presence of monetary incentives.

1.5 Conclusion

This final chapter of the comprehensive overview of the dissertation covers a summary of the key findings of the individual research papers as well as a discussion on the related theoretical and practical implications. It closes with the presentation of limitations and directions for further research.

1.5.1 Summary of Key Findings

The present dissertation aims at analyzing the influence of organizational and negotiators' individual factors on outcomes of dyadic intra-organizational negotiations with different types

of consequences in temporal terms. With respect to negotiations that yield outcomes with short-term consequences, the influence of three organizational factors is investigated: relative performance information, unequal distribution of power, and corporate guidelines. Furthermore, the influence of negotiators' individual factors, namely subjective entitlements is examined. In regard to negotiations that yield outcomes with long-term consequences, this dissertation considers the appointment of a representative of future generations and this person's incentive system as influencing organizational factors. On the side of negotiators' individual factors, the influence of personality traits in the form of future orientation and SVO is analyzed. The first two research papers refer to intra-organizational negotiations that yield short-term consequences, whereas the third research paper considers intra-organizational negotiations that yield long-term consequences.

Research Paper 1 focuses on work teams that jointly produce a surplus which subsequently has to be divided up. In this setting, it is analyzed whether and how the provision of relative performance information and an unequal distribution of power due to the assignment of hierarchical roles influence negotiators' subjective entitlements, and in turn individual negotiation outcomes.

Research Paper 2 addresses the setting of individual negotiators in randomly assigned hierarchical roles shaped by an unequal distribution of power again. It is investigated to what extent corporate guidelines operationalized as a code of conduct and information on optimal negotiation outcomes from the organization's perspective regulate potential differences between negotiation outcomes of individuals in different hierarchical positions.

Research Paper 3 examines whether and how the appointment of a representative of future generations and this person's incentive system influence results of intra-organizational negotiations in terms of intergenerational justice. Moreover, it studies whether and how negotiators' individual factors in the form of future orientation and SVO impact these negotiation outcomes.

Table 1.5 (p. 39f.) depicts the research questions and the related key findings.

Table 1.5: Summary of Key Findings

Research Paper	Research Question	Key Findings
1	How do the provision of relative performance information and the assignment of hierarchical roles affect subjective entitlements, and in turn negotiations on a jointly produced surplus?	• When relative performance information on the contribution to a jointly produced surplus is provided, negotiation partners exhibit stronger performance-specific subjective entitlements and agreements favor better performers. • When hierarchical roles are assigned, superiors exhibit role-specific subjective entitlements irrespective of the role assignment procedure, whereas subordinates only exhibit role-specific subjective entitlements when the role assignment is related to relative performance information. Irrespective of the role assignment procedure, agreements favor superiors. • Comparing the provision of relative performance information and the assignment of hierarchical roles based on relative performance information, better performers in the role of the superior derive stronger subjective entitlements than better performers without a hierarchical role, while subjective entitlements of worse performers in the role of the subordinate are similar to those of worse performers without a hierarchical role. Agreements favor better performers in the role of the superior more than better performers when only relative performance information is provided. • Comparing the provision of relative performance information and the random assignment of hierarchical roles, better performers' subjective entitlements are similar to randomly assigned superiors' subjective entitlements, whereas worse performers derive stronger subjective entitlements than randomly assigned subordinates. Agreements favor better performers and randomly assigned superiors in a similar way.
2	To what extent does the presence of corporate guidelines regulate possible differences between the negotiation outcomes of individuals in different hierarchical positions?	• The presentation of corporate guidelines to the superior leads to an increase in the subordinate's total payoff and a decrease in the difference between the superior's and the subordinate's total payoffs. • Compared to only providing the superior with corporate guidelines, providing both negotiation partners with the corporate guidelines does not influence negotiation outcomes. • Superiors reach higher individual payoffs than subordinates except for the situation where both negotiation partners receive the corporate guidelines. • Providing the superior with the corporate guidelines leads the absolute combined deviation of negotiation outcomes from the company optimum favoring superiors to decrease.

Research Paper	Research Question	Key Findings
3	Does a representative of future generations drive outcomes of intra-organizational negotiations towards more intergenerational justice and how do the representative's incentive system and negotiators' individual factors influence these negotiation outcomes?	• The appointment of a representative of future generations yields higher investments in intergenerational justice, even if the representative's incentive system financially penalizes increases in investments. • Investments in intergenerational justice are higher when the representative's incentive system financially rewards increases in investments. • When the representative's incentive system financially penalizes increases in investments in intergenerational justice, the representative's future orientation and SVO drive investments. • When the representative's incentive system financially rewards increases in investments in intergenerational justice, investments are driven by the representative's monetary interests and the executive board member's future orientation and SVO.

1.5.2 Theoretical Implications

The dissertation at hand provides several theoretical implications, as the three research papers deepen and extend existing negotiation research, as well as introduce new theoretical basics and perspectives to negotiation research.

This dissertation **deepens negotiation theory on reference points and applied fairness norms**. While most theoretical models do not take origins of reference points and applied fairness norms into account (see Karagözoğlu and Riedl, 2015), Research Paper 1 shows that they can originate from subjective entitlements derived from the provision of relative performance information and the assignment of hierarchical roles. Furthermore, as different sources of subjective entitlements and their differential effects on negotiation outcomes are analyzed, the findings contribute to models that already incorporate subjective entitlements (e.g., Tomlinson, 2013).

Furthermore, the present dissertation **extends negotiation research on unequal distributions of power**. First, it introduces a new type of negotiation power, i.e. the superior's ultimate decision-making power in the case of a negotiation impasse, as a main contextual variable to negotiation research. Although DeRue *et al.* (2009) applied a similar power manipulation, this factor only served as a moderating variable in their study. As Research Papers 1 and 2 show ultimate decision-making power to influence both integrative and distributive negotiations, research on power imbalances in negotiations should take this type of

negotiation power into account. Second, literature on power imbalances in negotiations is enriched by investigating the influence of corporate guidelines in the form of a code of conduct and information on realizations compatible with the code on negotiation outcomes. While previous research already showed that negotiation outcomes are influenced by giving powerful negotiators the goal to appear fair (Tripp, 1993), Research Paper 2 expands these findings by revealing a similar effect of corporate guidelines.

Moreover, the dissertation at hand **introduces a new theoretical basis to negotiation research**. That is, Research Paper 2 applies SDT (Ryan and Deci, 2000) in order to explain that the internalization of corporate guidelines and their effect on negotiation outcomes depend on the negotiators' power, as this leads to the satisfaction of the innate psychological needs for autonomy and relatedness. Since the results of Research Paper 2 are in line with theoretical predictions, SDT provides a valuable base for interpreting individuals' negotiation behavior and outcomes in terms of psychological need satisfaction.

Finally, this dissertation **adds a new temporal dimension of negotiation outcomes to negotiation research** by considering negotiations that yield outcomes with long-term consequences. Although there is already research which analyzed different time horizons for the realization of negotiation outcomes (e.g., Henderson *et al.*, 2006; Okhuysen and Bonner, 2005; Okhuysen *et al.*, 2003), outcomes considered only affected the negotiation partners involved. For this purpose, Research Paper 3 establishes a connection between SIT (Tajfel and Turner, 1986), SCT (Turner *et al.*, 1987) and GFT (Lindenberg and Steg, 2007) in order to show that a representative of future generations leads to favorable outcomes in terms of intergenerational justice even if monetary incentives financially penalize this role fulfillment. Thereby, research on SIT and SCT is expanded beyond classical intergroup settings by an intergenerational justice perspective (e.g., Kramer *et al.*, 1993; McLeish and Oxoby, 2011; Steinel *et al.*, 2010).

1.5.3 Practical Implications

The present dissertation provides several practical implications concerning dyadic intra-organizational negotiations that yield outcomes with short-term and long-term consequences. With regard to intra-organizational negotiations that yield outcomes with short-term consequences, first, this dissertation offers practical implications for **managing the distribution of a jointly produced surplus between negotiators**. According to Research Paper 1, the provision of relative performance information and different assignment procedures of hierarchical roles (based on performance differences versus random) impact negotiators'

subjective entitlements and yield agreements that favor better performers and superiors, respectively. Thus, organizations should be aware of these effects when giving feedback on employees' performances in a joint production task and when making promotion decisions. Furthermore, organizations could actively use these factors in order to promote equitable negotiation outcomes that reflect performance differences and different hierarchical positions, respectively. However, adding the results of Research Paper 2, even an assignment of hierarchical roles that is (perceived) as random, such as an ad hoc promotion or a promotion based on irrelevant skills (see Johnson and Salmon, 2016), leads to agreements that are skewed in favor of powerful superiors irrespective of the negotiation type (distributive versus integrative) and the endowment to be negotiated (earned versus given). As such a random procedure is generally perceived as less fair than a performance-based role assignment (see Fleiß, 2015), organizations should be aware that employees' job satisfaction might be reduced. As a result, employees might engage in sabotage or become discouraged (Johnson and Salmon, 2016).

Second, the dissertation at hand provides practical implications for **mitigating imbalances in negotiation outcomes of employees in different hierarchical positions**. According to Research Paper 2, an effective countermeasure consists in the provision of corporate guidelines emphasizing organizational values and explicitly stating optimal negotiation outcomes from the organization's perspective (see also Aquino, 1998). In doing so, organizations should especially convey these corporate guidelines to employees in higher hierarchical positions (see also Petersen and Krings, 2009), as these employees tend to internalize their roles and the organizational values more due to the satisfaction of their innate psychological needs for autonomy and relatedness.

With regard to intra-organizational negotiations that yield outcomes with long-term consequences, the present dissertation offers practical implications for **fostering long-term orientation and investments in intergenerational justice**. According to Research Paper 3, organizations should consider the appointment of a representative of future generations who is explicitly charged with acting on behalf of future generations in today's negotiations in order to improve negotiation outcomes in terms of intergenerational justice and therefore to ensure the organizations' survival. In addition, the provision of economic incentives that support the representative's role fulfillment further enhances negotiation outcomes in favor of future generations. However, if no economic incentives are provided, the representative's personality traits such as future orientation and SVO play a role in explaining favorable negotiation results (for a similar result on a representative's SVO, see Aaldering *et al.*, 2013). Consequently, it

might be valuable for organizations to know potential representatives' personality traits in order to choose representatives that best fill out their role.

1.5.4 Limitations and Directions for Further Research

Although the three research papers of the dissertation at hand offer several implications, the studies have limitations which should be addressed in further research. The experiments in the three research papers are composed of **one-shot negotiations between strangers**. This setting was used in order to analyze the hypothesized effects without distortions caused by other uncontrollable factors. In reality however, negotiations are mostly embedded in long-term relationships shaped by previous interactions and expectations of future encounters, or extend over a longer period of time (Agndal *et al.*, 2017). Former research showed that previous experiences with a partner have an influence on actual negotiation behavior and outcomes (e.g., O'Connor *et al.*, 2005). Likewise, the expectation of future interaction shapes negotiation behavior (e.g., Patton and Balakrishnan, 2010). Consequently, it would be valuable to expand the present research by analyzing the effects of negotiators' joint negotiation history and expectations of future negotiations. Furthermore, it might be interesting to investigate how negotiation partners deal with each other subsequent to the negotiation. Especially in the settings within Research Papers 1 and 2, negotiation partners would have to work together following the negotiation. As procedural and distributive fairness perceptions of the negotiations might influence subsequent behavior, future research should consider the relationship between negotiation partners' fairness perceptions and their succeeding behavior.

The present dissertation analyzes the influence of **different assignment procedures of hierarchical roles** on negotiators' subjective entitlements and their outcomes of dyadic intra-organizational negotiations on a jointly produced surplus. In order to establish different levels of (perceived) legitimacy of assignment procedures, Research Paper 1 compares a role assignment based on relative performance information with a random role assignment. Although employees might perceive promotion procedures as random, such as ad hoc promotions or promotions based on irrelevant skills (see Johnson and Salmon, 2016), it is possible that a promotion decision is based on relevant criteria other than the performance in a joint production task, such as leadership skills. Therefore, it would be worthwhile to investigate how a role assignment on the basis of other relevant factors shapes subjective entitlements, and in turn negotiation outcomes.

Moreover, this dissertation examines the influence of **corporate guidelines** on outcomes of dyadic intra-organizational negotiations shaped by an unequal distribution of power.

Although corporate guidelines normally need time and experience to develop, and might be established by observing other employees' behavior as well as the rewarding or punishing of this behavior (see Stawiski *et al.*, 2009), Research Paper 2 demonstrates that providing powerful superiors with such guidelines can instantly attenuate outcome imbalances. Nevertheless, future research should analyze how former experiences with such guidelines and the observation of other employees' (non-)adherence to the guidelines influence negotiations. Furthermore, as providing subordinates with corporate guidelines did not impact negotiations outcomes, and organizations often impose sanctions when corporate guidelines are not complied with, it would be interesting to expand the present research by investigating whether the enforcement of corporate guidelines yields different results. Moreover, the company optimum stated in the corporate guidelines corresponds to a compromise solution in such a way that negotiators need not cede more than half of their earnings to meet corporate goals. Although this assumption is realistic, future research should explore the influence of corporate guidelines that involve the abandonment of higher individual payoffs.

In addition, the dissertation at hand investigates the influence of a **representative of future generations** on outcomes of negotiations with long-term consequences in terms of intergenerational justice. As a first step in Research Paper 3, participants in this role received a detailed role description which exactly prescribed how future generations' interests would be met. In reality however, it is difficult to accurately predict the effects and risks of present decisions that affect future generations (Bovenkerk, 2015). Consequently, it would be fruitful to expand the present research by analyzing how uncertainty shapes such negotiations. Furthermore, Research Paper 3 shows that a representative of future generations improves negotiation outcomes in terms of intergenerational justice materialized in investments in long-term emissions reductions. While these outcomes refer to the environmental pillar of sustainability, future research should apply the underlying concept of a specific representative to negotiations on other aspects of sustainability such as the promotion of equal job opportunities in organizations.

Finally, an **integration of the individual results of the three research papers** might be an interesting avenue for future research. For instance, as Research Paper 2 shows that corporate guidelines have a significant impact on negotiation outcomes, and Tomlinson's (2013) model of entitlement beliefs also states that an organizational culture can guide individual beliefs regarding appropriate entitlements, it would be valuable to analyze the influence of corporate guidelines on subjective entitlements and negotiations over a jointly produced surplus such as in Research Paper 1. Furthermore, future research should analyze whether and how corporate

guidelines that emphasize sustainability and a focus on intergenerational justice impact negotiations involving future generations' interests such as in Research Paper 3. Moreover, participants in Research Paper 3 were provided with an unearned endowment which could be invested in intergenerational justice. Although it is realistic to assume that such negotiations do not implicate individual contributions of earnings, it might instead be possible that employees are required to invest a part of their acquired budget. Therefore, as Research Paper 1 shows that the joint production of a surplus elicits mutually inconsistent subjective entitlements that impact negotiation outcomes, it would be interesting to investigate how subjecting earned endowments to negotiation influences negotiation behavior, particularly of representatives of future generations. A further possible combination of results consists in analyzing whether the results of Research Paper 3 also apply to a negotiator relationship characterized by an unequal distribution of power. As it might be assumed that representatives of future generations are equipped with less power than executive board members, and Research Paper 1 and Research Paper 2 show more powerful negotiators to achieve higher outcomes than their less powerful negotiation partners, it would be valuable to investigate power asymmetries in negotiations involving representatives of future generations.

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Part 2: Research Papers

The present dissertation aims at analyzing the influence of organizational and negotiators' individual factors on outcomes of dyadic intra-organizational negotiations with different consequences in temporal terms. For this purpose, the overarching research model in section 1.1.3 is split into three research questions which are covered by individual research papers. Part 2 comprises these research papers. The first two research papers refer to negotiation outcomes with short-term consequences; the third research paper relates to negotiation outcomes with long-term consequences.

Chapter 2.1 contains Research Paper 1 "Performance Information and Hierarchical Roles in Negotiation: The Importance of Subjective Entitlements". This paper examines the influence of two organizational factors, i.e. relative performance information and unequal distribution of power due to different assignment procedures of hierarchical roles, on negotiators' individual factors in terms of subjective entitlements, and in turn on negotiators' individual payoffs and the relation between these payoffs.

Chapter 2.2 encompasses Research Paper 2 "On the Effectiveness of Corporate Guidelines: The Importance of Hierarchical Roles". This paper investigates the impact of another organizational factor, i.e. corporate guidelines, on outcomes of negotiations that are shaped by an unequal distribution of power due to the assignment of hierarchical roles. For this purpose, negotiation outcomes in the form of negotiators' individual payoffs and the relation between these payoffs as well as deviations from the company optimum expressed in the corporate guidelines are analyzed.

Chapter 2.3 involves Research Paper 3 "Representing Future Generations in Today's Negotiations". This paper studies the effect of the appointment of a representative of future generations and this person's incentive system on negotiation outcomes with long-term consequences that affect future generations. Furthermore, it examines the influence of negotiators' individual factors in the form of future orientation and SVO on these negotiation outcomes. To this end, negotiation outcomes in terms of investments of intergenerational justice are investigated.

2.1 Research Paper 1 – Performance Information and Hierarchical Roles in Negotiation: The Importance of Subjective Entitlements

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Abstract

We analyze the effect of performance information and the assignment of hierarchical roles on subjective entitlements in a two-person negotiation game. We hypothesize that relative performance information affects performance-specific subjective entitlements, while the assignment of hierarchical roles elicits role-specific subjective entitlements. These subjective entitlements influence negotiation agreements in turn. Moreover, we expect that the relationship between performance-specific and role-specific subjective entitlements and the corresponding agreements depend on whether hierarchical roles are assigned randomly or related to performance information. We find performance-specific subjective entitlements to be stronger when performance information is provided. These subjective entitlements lead to agreements favoring better performers. Furthermore, the assignment of hierarchical roles engenders role-specific subjective entitlements and agreements favoring superiors. When performance-specific and role-specific subjective entitlements are compared, the performance-based assignment of hierarchical roles leads to more skewed agreements than the provision of performance information alone. Additionally, we find that agreements do not differ for different role assignment procedures (random or performance-based). Our research contributes to organizational research as it sheds light on the interplay between hierarchical roles and the provision of performance information.

Keywords: negotiation, performance information, hierarchical roles, subjective entitlements, jointly produced surplus

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2.1.1 Introduction

Within work teams, departments, companies, or other organizational systems, economic surplus is often jointly produced by several partners. The resulting synergies give rise to the question about how to allocate these joint earnings (Fischbacher *et al.*, 2017; Karagözoğlu and Riedl, 2015) as they result from individual efforts (Corgnet *et al.*, 2011). As contracts specifying the distribution of those joint earnings are not always feasible *ex ante*, such a distribution is often determined by a negotiation *ex post* (Gantner *et al.*, 2016; Karagözoğlu and Riedl, 2015; Rodriguez-Lara, 2016). However, the relative input of different contributors may not be fully revealed (Karagözoğlu and Riedl, 2015). Therefore, the fair distribution of these joint earnings is a crucial point.

In general, distributive justice principles or fairness norms play a role in such negotiations (Cappelen *et al.*, 2007; Fischbacher *et al.*, 2017). Two main principles are equality and equity (Adams, 1965; Deutsch, 1975; Homans, 1961). While equality posits that the total output is divided equally irrespective of the producers' individual inputs or marginal productivities (Corgnet *et al.*, 2011; Fischbacher *et al.*, 2017), equity theory (Adams, 1965; Güth, 1994; Homans, 1961; Selten, 1978) proposes that the joint output should be distributed proportionally to the producers' inputs (Gantner *et al.*, 2001; Sondak *et al.*, 1995). A related approach to the concept of equity is based on justice theories and builds on factors for which individuals can be held responsible (Cappelen *et al.*, 2007; Corgnet *et al.*, 2011).

When individuals in homogeneous roles with exogenously and randomly given initial endowments (Fleiß, 2015; Luhan *et al.*, 2013) reach similar levels of performance, equality norms should drive the distribution of economic earnings (Bolton and Ockenfels, 2000; Fehr and Schmidt, 1999). However, differences between individuals are discussed more controversially in terms of distributive justice or fairness. For instance, the bargaining model by Birkeland and Tungodden (2014) explicitly incorporates fairness principles, that is, entitlements, and shows that the Nash bargaining solution is influenced by the introduction of entitlements. They also indicate that disagreements are likely negotiation outcomes if negotiation partners hold incompatible fairness views (Birkeland and Tungodden, 2014). Furthermore, Tutic and Liebe (2009) developed a theory of status-mediated inequality aversion which states that individuals' status influences perceived distributive fairness.

In summary, this strand of research suggests that the application of justice principles might depend on subjective entitlements that negotiators bring to the bargaining table (Karagözoğlu and Riedl, 2015). According to (Schlicht, 2016, p. 3), entitlements are defined as "rights, as perceived by the individuals. They are not, however, abstract legal rights. Rather, they denote

the subjectively perceived rights that go along with a motivational disposition to defend them.”⁹ Thus, these entitlements constitute some kind of moral property rights that are independent of legal property rights (Gächter and Riedl, 2005). Among others, entitlements might be derived from actual or perceived contributions to the output (Karagözoğlu and Riedl, 2015) or from the assignment of hierarchical roles (De Cremer, 2003; De Cremer and Van Dijk, 2005, 2008).

Our study refers to different strands of literature. First, we build on research dealing with the distribution of joint outcomes of group efforts. The results indicate that the choice of the applied justice criteria is context-dependent, with the equity norm based on different criteria being the mostly applied justice principle (for a review, see Karagözoğlu, 2012). Second, as groups are not homogenous, the assignment of hierarchical positions to better coordinate work teams and to increase group output is most common in many organizations. Although most job promotion procedures are based on merit, in reality, employees’ might misperceive these procedures as unfair and consequently base their behavior on these perceptions (Johnson and Salmon, 2016). Furthermore, there might be ad hoc promotions or promotions based on irrelevant skills (Johnson and Salmon, 2016) that lead employees to assume that promotion procedures are random. Thus, the degree to which employees perceive these hierarchies as legitimate might vary (Hays and Goldstein, 2015) and therefore influence negotiations on a jointly produced surplus. Consequently, our research is related to the literature exploring the influence of roles, status, or power on distributions realized in different economic games. For instance, previous studies have revealed that individuals who earned their position (power), received larger outcomes in dictator, ultimatum, or other bargaining games (Anbarci and Feltovich, 2018; Ball and Eckel, 1996; Bolton and Karagözoğlu, 2016; Feltovich, 2017; Fleiß, 2015; Hoffman *et al.*, 1994; Hoffman and Spitzer, 1985). Furthermore, literature concerning the random assignment of hierarchical positions in resource allocation games (e.g., De Cremer, 2003; De Cremer and Van Dijk, 2005; Samuelson and Allison, 1994; Stouten *et al.*, 2005) and the random assignment of power in ultimatum games (e.g., Ciampaglia *et al.*, 2014; Hennig-Schmidt *et al.*, 2018) concludes that even unearned positions lead to privileged outcomes.

However, to our knowledge, there is no research that combines different sources of subjective entitlements in order to study their differential influences on subjective entitlements. We employed a laboratory experiment to investigate how the provision of relative performance information and the assignment of hierarchical roles would affect subjective entitlements, and in turn negotiations on a jointly produced surplus. The size of the surplus to be distributed was

⁹ In line with this definition, we refer to entitlements as being subjective. Therefore, we equate subjective entitlements with entitlements.

determined by the accumulated performance of two partners who individually performed a real-effort task. Prior to the negotiation on this jointly produced surplus, we manipulated the provision of relative performance information and the procedure of the assignment of the hierarchical positions of superiors and subordinates. In two experimental treatments, participants were informed about whether they were the better or worse performer in their dyadic work team. In two further experimental treatments, participants either learned that the assignment to hierarchical roles was irrespective of their performance in the real-effort task or that the better performer would earn the role of the superior whereas the worse performer would take on the role of the subordinate. Therefore, we were able to analyze the effect of subjective entitlements derived from relative performance information and different assignment procedures of hierarchical positions on the negotiation outcomes.

Our main results are as follows. First, negotiation partners derive mutually inconsistent performance-specific subjective entitlements from the production task. These entitlements are stronger when relative performance information is provided. Second, performance-specific entitlements have an impact on agreements as agreements are skewed away from the equal split in favor of the better performers and are correlated with these entitlements. Third, the assignment of hierarchical roles elicits role-specific subjective entitlements. Fourth, role-specific subjective entitlements affect agreements because they are skewed in favor of the superior and are particularly correlated with the superiors' entitlements. Fifth, comparisons between the exclusive provision of relative performance information and the assignment of hierarchical roles related to performance information indicate that only the better performers' subjective entitlements are influenced by treatment effects. Furthermore, there is an indication of an interaction effect because agreements are more skewed in favor of the better performer in the role of the superior when roles are assigned according to performance rather than when only relative performance information is provided. Sixth, when the exclusive provision of relative performance information and the random assignment of hierarchical roles are compared, it reveals that only the worse performers' and the subordinates' subjective entitlements are different from each other. However, agreements favor better performers and randomly assigned superiors in a similar way.

2.1.2 Theory and Hypotheses

We investigate the influence of subjective entitlements on negotiations about a jointly produced surplus. In line with Karagözoğlu and Riedl (2015), a subjective entitlement exists when the perceived fair share of the jointly produced surplus is larger than the equal split and an

entitlement is stronger the more it deviates from the equal split. For this purpose, we dissociate subjective entitlements derived from the provision of relative performance information from subjective entitlements derived from the assignment of hierarchical roles. Furthermore, we analyze the relationship between both types of subjective entitlements and the corresponding negotiations. In this section, we develop our hypotheses about these factors.

2.1.2.1 Performance-Specific Subjective Entitlements and Negotiation Outcomes

When individuals jointly produce a surplus, negotiations about how to distribute these joint earnings might be influenced by subjective entitlements derived from information about one's contribution to the joint output. In line with this reasoning, previous research on individual behavior in dictator games (e.g., Cappelen *et al.*, 2007; Cherry *et al.*, 2002; Feng *et al.*, 2013; Frohlich *et al.*, 2004; Oxoby and Spraggon, 2008; Rode and Le Menestrel, 2011; Ruffle, 1998), ultimatum games (e.g., Bediou *et al.*, 2012; Feng *et al.*, 2013; Fischbacher *et al.*, 2009; Gantner *et al.*, 2001; Rodriguez-Lara, 2016), and other bargaining games (e.g., Gächter and Riedl, 2005; Gantner *et al.*, 2001, 2016; Karagözoğlu and Riedl, 2015; Luhan *et al.*, 2013; Rodriguez-Lara, 2016) showed that when individuals know their own and/or their partners' contributions, they tend to apply the equity norm in the distribution of a jointly produced surplus or a given endowment, respectively.

Karagözoğlu and Riedl (2015) explicitly investigated the existence of subjective entitlements derived from relative performance information and their influence on unstructured negotiations in a laboratory experiment. The authors showed that in the absence of relative performance information, negotiation partners mostly agree on an equal split, whereas the provision of relative performance information leads better performers to believe that they are entitled to a larger share of the jointly produced surplus than worse performers and that they should gain a larger share in the negotiation. Although subjective entitlements only had a weak marginal effect on agreements in their study, better performers' subjective entitlements had a highly significant influence on the likelihood that agreements deviate from the equal split (Karagözoğlu and Riedl, 2015). Importantly, with the provision of relative performance information, negotiators' entitlements were mutually inconsistent. This might be due to the fact that decisions are colored by self-serving biases. In line with this reasoning, Feng *et al.* (2013) showed that better performers allocate more to themselves than worse performers allocate to their partner and that better performers accept more advantageous unequal offers than what worse performers are willing to agree on disadvantageous distributions.

Thus replicating the results of Karagözoğlu and Riedl (2015), in a situation where no relative performance information is provided, negotiation partners might not display performance-specific subjective entitlements and therefore often agree on an equal split. In contrast, when individuals are provided with relative performance information, they might exhibit self-serving subjective entitlements that lead to negotiation outcomes favoring the better performers. These considerations are summarized in the following hypotheses:

- H1a. Individuals exhibit performance-specific subjective entitlements when relative performance information is available. Better performers attribute stronger entitlements to themselves than worse performers attribute to better performers.*
- H1b. When no relative performance information is provided, agreements do not differ from the equal split. When relative performance information is provided, agreements differ from the equal split in favor of the better performers.*
- H1c. When relative performance information is provided, agreements are positively correlated with each negotiator's performance-specific subjective entitlements. When no relative performance information is provided, no such correlation exists.*

2.1.2.2 Role-Specific Subjective Entitlements and Negotiation Outcomes

Besides performance-specific subjective entitlements, entitlements might also be induced by organizational factors such as, among others, the assignment of hierarchical roles (for a complete model of entitlement beliefs, see Tomlinson, 2013). According to Role Schema Theory (Fiske, 1993), when people take on certain positions, so-called role schemata are automatically activated which trigger expectations about how to fulfill the assigned roles and which rights and privileges are associated with those roles (De Cremer, 2003; Fiske, 1993; Fiske and Taylor, 1991; Greenberg and Ganegoda, 2010). Outcomes are considered to be fair if they are distributed according to what people think they are entitled to, that is, people of higher status usually perceive themselves to be entitled to higher rewards than people of lower status (Greenberg and Ganegoda, 2010).

In an organizational context, “Hierarchy provides a psychologically appealing kind of order that clarifies roles and facilitates coordination.” (Magee and Galinsky, 2008, p. 358). Hierarchical roles carry prescriptions for role-congruent behavior (Biggart and Hamilton, 1984; Dornbusch and Scott, 1975; Magee and Galinsky, 2008). If we take the role of the superior for example, people in this role anticipate having more responsibilities and therefore expect to enjoy more privileges and be entitled to more resources than their subordinates (De Cremer, 2003; De Cremer and Van Dijk, 2005; Samuelson and Allison, 1994; Stouten *et al.*, 2005).

Empirical evidence underpins this notion by showing that individuals who fill the role of a leader allocate more resources to themselves in resource allocation decisions (De Cremer, 2003; Samuelson and Allison, 1994). De Cremer and Van Dijk (2005) showed that these resource allocation choices are due to feelings of entitlements.

Different ranks in the organizational hierarchy generally entail an unequal distribution of power. That is, those on higher hierarchical levels (i.e. superiors) have more decision-making power, thereby affecting individual and group outcomes more than those on lower hierarchical levels (i.e. subordinates) (Rus *et al.*, 2012). According to Kabanoff (1991), the equity principle is mostly accepted and employed in power-differentiated relations because powerful individuals feel entitled to larger shares of the outcomes, while weaker individuals regard distributions favoring powerful people as fair (see also the authority ranking model with hierarchy motives by Rai and Fiske, 2011). In contrast, Hennig-Schmidt *et al.* (2018) showed that subjects apply fairness norms in a self-serving manner which makes agreements harder to reach. For instance, in ultimatum games, proposers with attractive outside options propose a proportional split of the endowment that favors themselves, whereas proposers with unattractive outside options claim an equal split. On the other hand, responders with very large outside options demand significantly more compared to what they are willing to give up when the proposers' outside options are very large (Hennig-Schmidt *et al.*, 2018). Similarly, dictators with ultimate decision power reach higher payoffs regardless of whether they or their partners generate the surplus to be distributed (Rode and Le Menestrel, 2011) and powerful responders in the no-veto-cost game demand larger shares than in the ultimatum game (Rodriguez-Lara, 2016). Combining the results of the effects of hierarchical positions on resource allocation decisions and the findings on the influence of power on distribution decisions, we hypothesize that the assignment of hierarchical roles elicits role-specific subjective entitlements leading superiors with ultimate decision power to receive a larger share of the jointly produced surplus than their subordinates. The following hypotheses address our considerations:

H2a. Individuals exhibit role-specific subjective entitlements when hierarchical roles are assigned. Superiors attribute stronger entitlements to themselves than subordinates attribute to their superiors.

H2b. With the assignment of hierarchical roles, agreements differ from the equal split in favor of the superiors.

H2c. With the assignment of hierarchical roles, agreements are positively correlated with each negotiator's role-specific subjective entitlements.

2.1.2.3 Relationship between Performance-Specific and Role-Specific Subjective Entitlements and Negotiation Outcomes

The relationship between performance-specific and role-specific subjective entitlements and associated negotiation outcomes is likely to be influenced by the assignment procedure of hierarchical roles. The (perceived) legitimacy of the assigned hierarchical position as a contextual factor might moderate the aforementioned role assignment effect and thus influence whether performance-specific or role-specific subjective entitlements have a larger effect on negotiation outcomes. Therefore, we were interested in analyzing how people react to different assignment procedures, namely a procedure based on the performance in the joint production task and a random procedure. According to Arvey and Renz (1992), it is unclear as to whether a random selection process would be considered as fair because it would yield equal outcomes for protected and non-protected groups on the one hand but would fail to be merit-based on the other. Previous research has yielded mixed results. For instance, Johnson and Salmon (2016) showed in a laboratory experiment that individuals' post promotion behavior did not significantly differ between random and meritocratic mechanisms, indicating that both mechanisms are considered to be equally acceptable. However, in public opinion, it is perceived as unfair and illegitimate if occupational positions are assigned by chance instead of being based on merit and performance (Fleiß, 2015). This view is supported by Haslam *et al.* (1998) who revealed that individuals perceive a random selection of superiors to be illegitimate and are less satisfied with such a procedure than with a selection process based on performance. Therefore, we differentiate between the implementation of a legitimate hierarchy based on the performance in the joint production task and a promotion procedure based on a random selection process that is independent from the performance in the joint production task.

If superiors perceive their powerful position to be legitimate because they learn that they earned it based on their better performance in a joint production task, they feel that their entitlement to more privileges is justified (Goodwin *et al.*, 2000). If they also earn ultimate decision power, superiors might be led to act upon the equity norm (De Cremer and Van Dijk, 2005) and to decrease generous behavior towards their subordinates (for a comparable argumentation on the influence of a legitimate status on generosity, see Hays and Blader, 2017). Similarly, if subordinates perceive their hierarchical position to be legitimate, they should also acknowledge their superiors' entitlements and accept an equitable distribution of the jointly produced surplus. Thus, in a situation where relative performance information and the assignment of hierarchical roles accompanied by an unequal distribution of power concur, performance-specific and role-specific subjective entitlements coincide and reinforce one

another so that the agreement shifts away from an equal split and favors the superior more than in the case where subjective entitlements are only driven by relative performance information. Therefore, we formulate the following hypotheses:

H3a. Subjective entitlements are stronger when the provision of relative performance information is related to the assignment of hierarchical roles than when only relative performance information is provided.

H3b. When the provision of relative performance information is related to the assignment of hierarchical roles, agreements differ more from the equal split in favor of the superiors than when only relative performance information is provided.

In contrast, if superiors are randomly selected, superiors' feelings of entitlement seem not to be valid, and the motivation to apply the equity norm decreases (De Cremer and Van Dijk, 2005). Thus, when the randomness of selection is emphasized, randomly selected superiors might be willing to restore equity by increasing generous behavior (for a similar argumentation on the influence of illegitimate status on generosity, see Hays and Blader, 2017). In such a case, equality motives will increase and guide social interactions (Rai and Fiske, 2011), respectively. However, as people fall victim to self-serving biases (e.g., Feng *et al.*, 2013; Hennig-Schmidt *et al.*, 2018; Rode and Le Menestrel, 2011) and superiors have the ultimate decision power, it might be possible that randomly selected superiors will not completely forsake their role-based privileges. This is in line with the finding that the random assignment of hierarchical positions in resource allocation games (e.g., De Cremer, 2003; De Cremer and Van Dijk, 2005; Samuelson and Allison, 1994; Stouten *et al.*, 2005) and the random assignment of power in ultimatum games (e.g., Ciampaglia *et al.*, 2014; Hennig-Schmidt *et al.*, 2018) lead to privileged outcomes. On the other hand, subordinates perceiving their lower-rank position as unfair might be motivated to engage in more uncompromising negotiation behavior to avoid further negative outcomes (Zitek *et al.*, 2010). Hence, distributions of the jointly produced surplus shift towards the equal split if superiors want to put themselves on an equal footing with their subordinates and if subordinates are willing to defend their entitlements. In relation to a situation where relative performance information is provided, we hypothesize that role-specific subjective entitlements elicited by the random assignment of hierarchical roles are weaker than performance-specific subjective entitlements and negotiation outcomes favor superiors less than the better performers. The following hypotheses are formulated around these considerations:

H4a. Role-specific subjective entitlements elicited by the random assignment of hierarchical roles are weaker than performance-specific subjective entitlements elicited by relative performance information.

H4b. Randomly assigned superiors are favored less by negotiation outcomes than better performers when relative performance information is provided.

2.1.3 Method

2.1.3.1 Experimental Design and Procedures

We employed a computer-based role play experiment that is primarily based on the design and the procedures used by Karagözoğlu and Riedl (2015). Two randomly and anonymously paired subjects each formed a work team and individually performed a general knowledge quiz. Both partners' accumulated performances determined the salary budget that had to be distributed among them. Afterwards, the work team partners negotiated the distribution of the jointly produced salary budget via computer. To test our hypotheses, we manipulated the provision of relative performance information about the subjects' and their partners' performances in a general knowledge quiz. Participants were informed about whether they performed better or worse in their work team (called INFO) or this information was withheld from them (called NOINFO). The second manipulation included the procedure of assigning the hierarchical roles of superiors and subordinates. Here, subjects were either assigned the hierarchical roles of superiors or subordinates (called ROLE) or they were not assigned to such roles (called NOROLE). To make the hierarchical roles in the ROLE treatments more salient and realistic, we implemented a natural power inequality. That is, if dyads did not reach a mutual agreement, the subject in the role of the superior unilaterally determined the distribution of the salary budget, bestowing her or him with ultimate decision-making power. In the NOROLE treatments no such power imbalance was implemented. The manipulations described result in a 2 x 2 experimental design.

Information Phase. Participants were told that the salary budget to be distributed would amount to 1,690 experimental currency units (ECU) if both partners of a work team correctly answered in sum 0 to 10 questions, 2,210 ECU in the case of 11 to 20 correct answers, and 2,730 ECU in the case of 21 to 32 correct answers. We decided upon this endowment mode to ensure that the distribution of salary budgets was balanced across treatments (for a similar mode, see also Barr *et al.*, 2015; Gächter and Riedl, 2005). Subjects were also informed that they had to negotiate the distribution of the salary budget as the company's top management did not want to impose a distribution. In addition, participants learned about the negotiation

procedure. Depending on the experimental treatment, the provision of performance information after the general knowledge quiz and the mode of assignment to the hierarchical roles of superiors or subordinates were explained.

Performance, Determination of the Salary Budget and Elicitation of Beliefs on Performances. After reading the instructions and answering several control questions, subjects' performances were determined with the general knowledge quiz applied in Karagözoğlu and Riedl (2015) which consisted of 16 multiple-choice questions with four incorrect and one correct answer to each question. It was made common knowledge that participants received the same questions in the same order, that they had 30 seconds to answer each question and that unanswered questions counted as wrong answers. Participants did not receive any feedback about whether a question was answered correctly or falsely. After the completion of the general knowledge quiz, participants were informed about how large their jointly produced salary budget was. Subjects then had to estimate their own as well as their partner's contribution in terms of correct answers. This belief elicitation was incentivized as in Karagözoğlu and Riedl (2015) with each precise estimation leading to an additional payoff of 52 ECU, each estimation with one (two) error(s) leading to an additional payoff of 26 (13) ECU, and estimations with more than two errors leading to no additional payoff.

Experimental Manipulations. After the performance estimation, the experimental manipulations were performed. That is, in the treatments with no provision of relative performance (NOINFO-NOROLE and NOINFO-ROLE), participants did not receive any information about their performances in the general knowledge quiz. In the treatments with provision of relative performance information (INFO-NOROLE and INFO-ROLE), participants were told whether they were the better or worse performer in their work team or whether they and their partner were equal performers. In the treatments without an assignment of hierarchical roles (NOINFO-NOROLE and INFO-NOROLE), no hierarchical roles were assigned. In the treatments with an assignment of hierarchical roles (NOINFO-ROLE and INFO-ROLE), the hierarchical roles of superiors and subordinates were assigned as follows: In the NOINFO-ROLE treatment, subjects learned that the assignment to hierarchical roles was irrespective of their performances in the general knowledge quiz, whereas in the INFO-ROLE treatment, subjects were told that the better performer would be assigned the role of the superior and that the worse performer would take on the role of the subordinate, or that roles would be randomly assigned in the case of equal performances.

Subjective Entitlements. Before participants negotiated the distribution of the salary budget, we elicited subjective entitlements to a fair distribution of the salary budget in the same

manner as Karagözoğlu and Riedl (2015; see also Babcock *et al.*, 1995; Gächter and Riedl, 2005). Participants had to state their opinion concerning the fair distribution of the salary budget from the vantage point of a noninvolved neutral arbitrator. As subjective entitlements were asked for after the experimental manipulations, subjects' fairness judgments should depend on both their (believed) relative performance and their assigned hierarchical roles in the ROLE treatments.

Negotiation Phase. Each work teams had 10 minutes to reach an agreement on the distribution of the jointly produced salary budget. Participants made offers to each other concerning their own salary claim and the remaining share for their partner via computer. A mutual agreement was reached if both negotiation partners successively made the same offer. If negotiation partners did not reach a mutual agreement within 10 minutes in the NOROLE treatments, the negotiation resulted in an impasse leaving both negotiation partners with their earnings based on their performance estimations plus a show-up fee of 520 ECU. In contrast, in the ROLE treatments the superior unilaterally determined the distribution of the salary budget if no agreement was reached.

Post-Experimental Questionnaire. After the negotiation, participants answered a post-experimental questionnaire, which included manipulation checks for role effects (based on Van Dijk and De Cremer, 2006) and for performance, as well as feelings of entitlement due to one's performance and / or one's hierarchical position (based on De Cremer, 2003; De Cremer and Van Dijk, 2005), fairness perceptions regarding the procedural and distributive fairness (modified version from Colquitt, 2001; Scott *et al.*, 2007), equity sensitivity (adapted from Abele and Diehl, 2008), SVO (adopted from Murphy *et al.*, 2011), questions regarding the general knowledge quiz (adapted from Karagözoğlu and Riedl, 2015, Questionnaire A and Questionnaire B, Question 1), and demographics. Finally, based on their performance estimation, their individual negotiation outcome, and the show-up fee, subjects were individually and confidentially paid at an exchange rate of 130 ECU to 1 Euro.

The experiment was programmed in z-Tree (Fischbacher, 2007) and conducted in the experimental laboratory of a large German University in November and December 2017. In total, 230 subjects (= 115 work teams) participated in eight sessions. As one subject stated after the experiment that he wanted to achieve exactly the opposite negotiation outcome to what he actually did, we excluded this subject and the according work team prior to the statistical analysis, leading to a sample of 228 subjects forming 114 work teams. In total, the four treatments – NOINFO-NOROLE, NOINFO-ROLE, INFO-NOROLE, and INFO-ROLE – included data from 58, 58, 56, and 56 participants, respectively. The average participant was

23.68 years old, with 51.32% being female. The average subject earned 12.61 Euros for participating in a session which lasted on average 75 minutes.

2.1.3.2 Analysis Methodology

In the following, we refer to the subject with the better performance (i.e., more correct answers in the performance quiz) in a pair as the “winner” and to the other subject as the “loser”. Regarding the analyses of performance-specific subjective entitlements and negotiation outcomes, respectively, we express entitlements and agreements in percentage shares to the winner (“winner’s share”). In the analyses of role-specific subjective entitlements and negotiation outcomes, we state entitlements and agreements in percentage shares to the superior (“superior’s share”).

To analyze the impact of performance-specific subjective entitlements on agreements, we ran robust Tobit regressions for agreements with the winner’s and the loser’s entitlements (*Winner_Entitle* and *Loser_Entitle*) as independent variables. Likewise, we conducted robust Tobit regressions for agreements with the superior’s and the subordinate’s entitlements (*Superior_Entitle* and *Subordinate_Entitle*) as independent variables to investigate the influence of role-specific subjective entitlements on agreements. To test differences between coefficient estimates between treatments, we pooled the data of the respective treatments and added a dummy and an interaction variable to control for treatments effects. An overview of definitions for the main independent variables are provided in Table 2.1 (p. 78).

Table 2.1: Definitions of Main Independent Variables in Tobit Regressions

Variable	Description
<i>Info</i>	Dummy variable for the provision relative performance information (0 = no; 1 = yes)
<i>Winner_Entitle</i>	Winner's performance-specific subjective entitlement
<i>Info x Winner_Entitle</i>	Interaction between <i>Info</i> and <i>Winner_Entitle</i>
<i>Loser_Entitle</i>	Loser's performance-specific subjective entitlement
<i>Info x Loser_Entitle</i>	Interaction between <i>Info</i> and <i>Loser_Entitle</i>
<i>Superior_Entitle</i>	Superior's role-specific subjective entitlement
<i>Info x Superior_Entitle</i>	Interaction between <i>Info</i> and <i>Superior_Entitle</i>
<i>Subordinate_Entitle</i>	Subordinate's role-specific subjective entitlement
<i>Info x Subordinate_Entitle</i>	Interaction between <i>Info</i> and <i>Subordinate_Entitle</i>
<i>Role</i>	Dummy variable for the assignment of hierarchical roles information (0 = no; 1 = yes)
<i>Info_Role</i>	Dummy variable for the comparison of the INFO-NOROLE with the NOINFO-ROLE treatment (0 = INFO-NOROLE; 1 = NOINFO-ROLE)
<i>Winner_Superior_Entitle</i>	Winner's or superior's entitlement in the comparison of the INFO-NOROLE with the ROLE treatments
<i>Role x Winner_Superior_Entitle</i>	Interaction between <i>Role</i> and <i>Winner_Superior_Entitle</i>
<i>Info_Role x Winner_Superior_Entitle</i>	Interaction between <i>Info_Role</i> and <i>Winner_Superior_Entitle</i>
<i>Loser_Subordinate_Entitle</i>	Loser's or subordinate's entitlement in the comparison of the INFO-NOROLE with the ROLE treatments
<i>Role x Loser_Subordinate_Entitle</i>	Interaction between <i>Role</i> and <i>Loser_Subordinate_Entitle</i>
<i>Info_Role x Loser_Subordinate_Entitle</i>	Interaction between <i>Info_Role</i> and <i>Loser_Subordinate_Entitle</i>

2.1.4 Results

In the knowledge quiz, subjects answered 7.55 out of 16 questions correctly ($SD = 2.24$) which indicates that questions were neither too easy nor too difficult. Furthermore, participants perceived the quiz as a legitimate measure of general knowledge.¹⁰ While participants' estimates of their own performance ($M = 7.52$, $SD = 2.63$) were pretty accurate and not statistically different from their actual performance according to a two-tailed Wilcoxon signed-rank (WSR) test ($p = 0.4741$), the mean estimate of their partner's performance was 8.50 ($SD = 2.69$) and statistically different from their partner's actual performance ($p < 0.0001$).¹¹

In our 114 work teams, the salary budget of 1,690 ECU, 2,210 ECU, and 2,730 ECU occurred in 14, 93, and 7 work teams, respectively. As we did not find any substantial differences in the variables of interest across salary budget sizes, we pooled the data in the following analyses.

Out of the 114 work teams, 19 work teams consisted of equally performing partners. By definition, there were no winners or losers in those work teams. In order to analyze the effect of relative performance information and the assignment of hierarchical roles in work teams with performance differences, we concentrated on the remaining 95 work teams in the following.

2.1.4.1 Performance-Specific Subjective Entitlements and Negotiation Outcomes

To test H1a stating that individuals exhibit performance-specific subjective entitlements when relative performance information is available, we firstly investigated winners' and losers' entitlements separately in the four treatments. Table 2.2 (p. 80) shows descriptive statistics regarding the winners' and losers' performance-specific entitlements.

¹⁰ In the post-negotiation questionnaire, participants answered questions about the general knowledge quiz on a 7-point Likert scale (1 = "absolute rejection" to 7 = "absolute acceptance"). The average answer to the statement "In a knowledge quiz like this, pure luck decides who is able to answer more questions correctly" was 3.57 ($Mdn = 3$, $SD = 1.96$), and to "The one with the better general knowledge is able to answer more questions correctly" was 5.35 ($Mdn = 6$, $SD = 1.66$).

¹¹ We report two-tailed significance levels throughout the results section. As some of our hypotheses are one-tailed, our statistical analysis can be seen as rather conservative in those cases.

Table 2.2: Performance-Specific Subjective Entitlements Stated by Winners and Losers in Each Treatment

	NOINFO-NOROLE		NOINFO-ROLE		INFO-NOROLE		INFO-ROLE	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Winner	0.501	0.021	0.555	0.090	0.586	0.073	0.631	0.112
Loser	0.455	0.121	0.455	0.087	0.530	0.036	0.515	0.122
Difference	0.047	0.123	0.100	0.115	0.056	0.074	0.116	0.188
No. of obs.	25		25		24		21	

Note. The table reports means and mean differences (*M*) as well as standard deviations (*SD*), respectively.

As far as the winners are concerned, their subjective entitlements are larger than the equal split in all treatments except for the NOINFO-NOROLE treatment. The significance of these differences is supported by WSR tests ($p \leq 0.0026$). A Kruskal-Wallis (KW) test shows that winners' entitlements significantly differ across treatments ($p = 0.0001$). As subsequent Mann-Whitney (MW) tests for pairwise comparisons indicate that the winners' entitlements significantly differ between the NOROLE treatments as well as between the ROLE treatments ($p \leq 0.0042$), the provision of relative performance information strengthens the winners' subjective entitlements in the hypothesized direction. Unexpectedly, the differences in the winners' entitlements between the NOINFO treatments and between the INFO treatments, respectively, are also significant ($p \leq 0.0489$, MW tests). These results indicate that winners' entitlements are not only influenced by the provision of relative performance information, but also by the assignment of hierarchical roles even if this assignment is not based upon any performance information.

The losers' subjective entitlements are significantly influenced by the provision of relative performance information. While in both NOINFO treatments, the loser's average entitlement is lower than the equal split, it is larger than the equal split in the INFO treatments. These differences from the equal split are significant in all treatments ($p \leq 0.0286$, WSR tests). Furthermore, a KW test shows that the loser's entitlements differ across treatments ($p = 0.0001$). The losers' entitlements are not significantly different from each other in the NOINFO treatments ($p = 0.8538$, MW test) and in the INFO treatments ($p = 0.5827$, MW test), respectively. However, as the losers' entitlements significantly differ between the NOROLE treatments as well as between the ROLE treatments ($p < 0.0001$, MW tests), we find that relative performance information has a significant impact on losers' entitlements. Taken together, we

find partial support for the first part of H1a in that the provision of relative performance information leads to stronger performance-specific subjective entitlements.

According to the second part of H1a, winners attribute stronger subjective entitlements to themselves than losers attribute to winners. The lower part of Table 2.2 (p. 80) shows the differences between winners' and losers' subjective entitlements across treatments and indicates that winners exhibit stronger entitlements than losers. In all four treatments, the differences between the winners' and losers' entitlements are significantly different to zero ($p \leq 0.0683$, WSR tests). Furthermore, differences across treatments are significant ($p = 0.0538$, KW test). However, only the difference between the NOINFO treatments is significant ($p = 0.0181$, MW test), while all other pairwise treatment comparisons are insignificant ($p \geq 0.1940$, MW tests). Thus, the second part of H1a is supported as winners' and losers' entitlements are mutually inconsistent. Nevertheless, this mutual inconsistency occurs irrespective of the provision of relative performance information.

H1b asserts that agreements do not differ from the equal split when no relative performance information is provided, whereas they favor winners in the case of the provision of relative performance information. Figure 2.1 (p. 81) shows the respective distribution of agreements and Table 2.3 (p. 82) reports summary statistics for all four treatments.

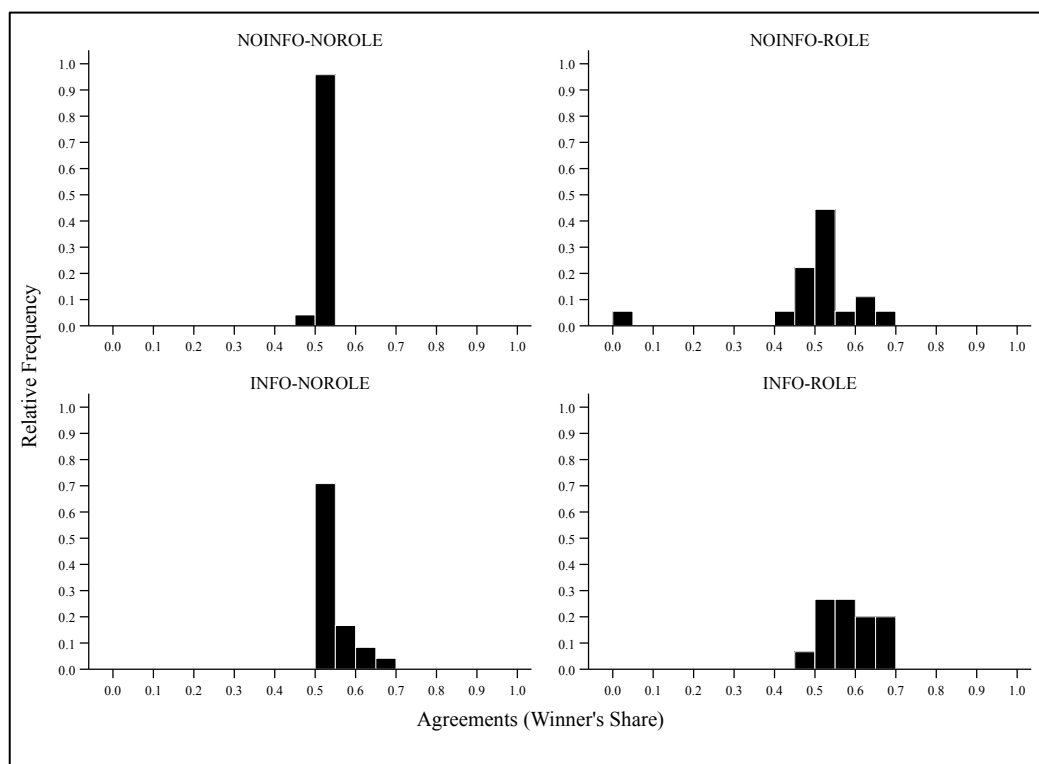


Figure 2.1: Distribution of Agreements between Winners and Losers in Each Treatment

Table 2.3: Agreements between Winners and Losers in Each Treatment

	NOINFO- NOROLE		NOINFO- ROLE		INFO- NOROLE		INFO- ROLE	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Agreements	0.500	0.001	0.499	0.140	0.546	0.039	0.586	0.064
No. of obs.	24		18		24		15	

Note. The table reports means (*M*) and standard deviations (*SD*) in the winner's share.

While agreements favor winners in the INFO treatments as agreements significantly differ from the equal split ($p \leq 0.0012$, WSR tests), agreements are not significantly different from the equal split in the NOINFO treatments ($p \geq 0.4202$, WSR tests). Furthermore, agreements differ across treatments ($p = 0.0001$, KW test). Pairwise comparisons show a similar pattern to the winners' subjective entitlements in that all comparisons are significant ($p \leq 0.0537$, MW tests). Hence, we find support for H1b as the provision of performance information leads agreements to favor winners.

Finally, we tested H1c and analyzed whether agreements were only positively correlated with each negotiator's performance-specific subjective entitlement in the case of the provision of relative performance information. Table 2.4 (p. 83) shows the related Tobit regression results.

In line with our former results that winners and losers exhibit performance-specific subjective entitlements in all treatments, we find that subjective entitlements influence agreements in all treatments. While the loser's entitlement significantly increases agreements except for the NOINFO-ROLE treatment ($p \leq 0.059$), the winner's entitlement has a significantly positive impact on agreements in the ROLE treatments ($p \leq 0.008$). Thus, H1c is partially supported.

Furthermore, we investigated whether the influence of performance-specific subjective entitlements was affected by the provision of relative performance information. The related Tobit regression results depicted on the right-hand side of Table 2.4 (p. 83) indicate that when relative performance information is provided, the winner's entitlement has a significantly lower impact on agreements ($p = 0.053$), whereas the loser's entitlement has a significantly larger effect on agreements ($p = 0.003$).

Table 2.4: Agreements as a Function of Performance-Specific Subjective Entitlements in Each Treatment and Pooled Across Treatments (Tobit Regressions)

Independent Variables	Dependent Variable: <i>Agreed Share (Winner's Share)</i>				
	NOINFO-NOROLE	NOINFO-ROLE	INFO-NOROLE	INFO-ROLE	Pooled Treatments
<i>Intercept</i>	0.493*** (0.005)	0.032 (0.253)	0.173 (0.140)	-0.352** (0.142)	0.161* (0.091)
<i>Info</i>					-0.196 (0.163)
<i>Winner_Entitle</i>	0.009 (0.009)	0.773*** (0.237)	0.127 (0.132)	0.529*** (0.170)	0.613*** (0.116)
<i>Info x Winner_Entitle</i>					-0.360* (0.183)
<i>Loser_Entitle</i>	0.005* (0.002)	0.107 (0.343)	0.562* (0.282)	1.143*** (0.212)	0.046 (0.087)
<i>Info x Loser_Entitle</i>					0.788*** (0.259)
Log-L	141.05	8.48	49.76	30.20	101.08
F	2.57*	5.41**	3.56**	22.53***	11.92***
N	24	18	24	15	81

Notes. Robust standard errors are given in parentheses.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

2.1.4.2 Role-Specific Subjective Entitlements and Negotiation Outcomes

To analyze H2a that individuals exhibit role-specific subjective entitlements when hierarchical roles are assigned, we first investigated superiors' and subordinates' entitlements separately. Table 2.5 (p. 84) reports the descriptive statistics on superiors' and subordinates' role-specific subjective entitlements in the ROLE treatments.

Table 2.5: Role-Specific Subjective Entitlements Stated by Superiors and Subordinates in Each ROLE Treatment

	NOINFO-ROLE		INFO-ROLE	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Superior	0.593	0.090	0.631	0.112
Subordinate	0.493	0.061	0.515	0.122
Difference	0.100	0.115	0.116	0.188
No. of obs.	25		21	

Note. The table reports means and mean differences (*M*) as well as standard deviations (*SD*), respectively.

Superiors exhibit role-specific subjective entitlements irrespective of the role assignment procedure. That is, the average superior's entitlement is significantly different from the equal split in both treatments ($p \leq 0.0001$, WSR tests) and it does not significantly differ between both treatments ($p = 0.1001$, MW test).

By contrast, the subordinate's role-specific subjective entitlements depend on the role assignment procedure. While it is not significantly different from the equal split in the NOINFO-ROLE treatment ($p = 0.4401$, WSR test), it significantly differs from the equal split in the INFO-ROLE treatment ($p = 0.0014$, WSR test). Furthermore, there is a significant difference in the subordinate's entitlement between both treatments ($p = 0.0004$, MW test). Thus, we find partial support for the first part of H2a.

With respect to the second part of H2a asserting that superiors attribute stronger subjective entitlements to themselves than subordinates attribute to their superiors, we analyzed the difference between superiors' and subordinates' entitlements. The lower part of Table 2.5 (p. 84) indicates that superiors exhibit stronger role-specific entitlements than subordinates. In both treatments, the superior's average entitlement significantly differs from the subordinate's entitlement ($p \leq 0.0008$, WSR tests). Furthermore, this effect is irrespective of the role assignment procedure as the comparison of both treatments reveals no significant difference ($p = 0.8164$, MW test). Consequently, the second part of H2a is supported.

According to H2b, the assignment of hierarchical roles should lead agreements to favor superiors. Figure 2.2 (p. 85) shows the distribution of agreements and Table 2.6 (p. 85) reports related summary statistics.

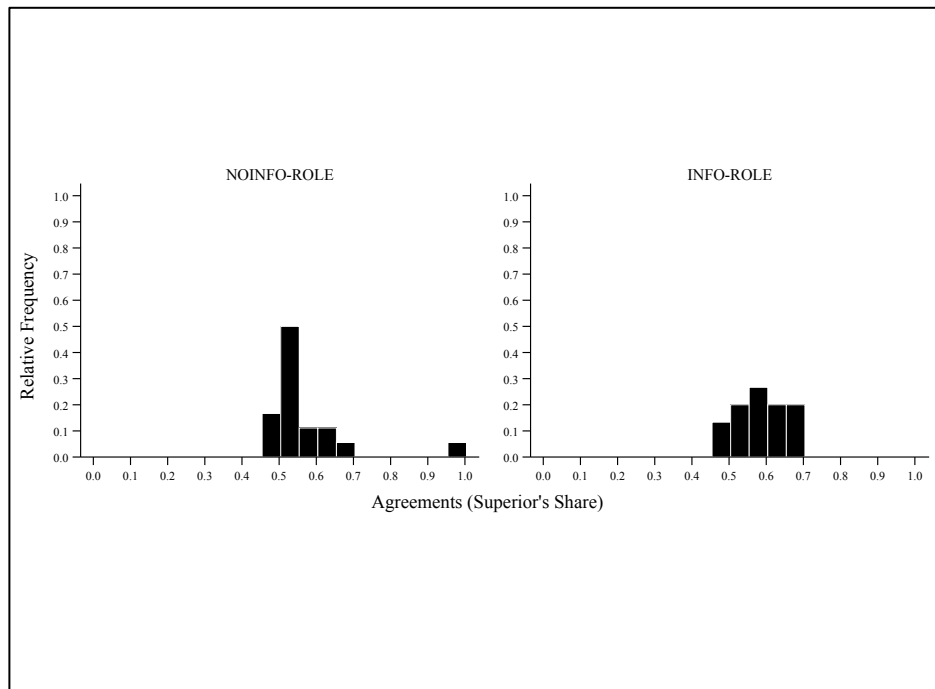


Figure 2.2: Distribution of Agreements between Superiors and Subordinates in ROLE Treatments

Table 2.6: Agreements between Superiors and Subordinates in Each ROLE Treatment

	NOINFO-ROLE		INFO-ROLE	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Agreements	0.577	0.116	0.586	0.064
No. of obs.	18		15	

Note. The table reports means (*M*) and standard deviations (*SD*) in the superior's share.

WSR tests reveal that agreements favor superiors in both treatments ($p \leq 0.0012$), while a MW test indicates that there is no significant difference between agreements in both ROLE treatments ($p = 0.1284$). As superiors are favored by agreements within both ROLE treatments, H2b is supported.

Finally, H2c states that with the assignment of hierarchical roles, agreements are positively correlated with each negotiator's role-specific subjective entitlement. As depicted in Table 2.7 (p. 86), the superior's and the subordinate's entitlements do not have a significant impact on agreements in the NOINFO-ROLE treatment ($p \geq 0.375$). However, both negotiation partners' role-specific entitlements significantly increase agreements in the INFO-ROLE treatment ($p \leq 0.008$). Thus, as role-specific entitlements influence agreements only when the assignment

of hierarchical roles is accompanied by relative performance information, we find partial support for H2c.

Table 2.7: Agreements as a Function of Role-Specific Subjective Entitlements in Each ROLE Treatment and Pooled Across ROLE Treatments (Tobit Regressions)

Independent Variables	Dependent Variable: <i>Agreed Share (Superior's Share)</i>		
	NOINFO-ROLE	INFO-ROLE	Pooled ROLE Treatments
<i>Intercept</i>	0.514*** (0.143)	-0.352** (0.142)	0.512*** (0.137)
<i>Info</i>			-0.864*** (0.195)
<i>Superior_Entitle</i>	0.169 (0.186)	0.529*** (0.170)	0.172 (0.179)
<i>Info x Superior_Entitle</i>			0.357 (0.245)
<i>Subordinate_Entitle</i>	-0.061 (0.145)	1.143*** (0.212)	-0.061 (0.140)
<i>Info x Subordinate_Entitle</i>			1.204*** (0.251)
Log-L	10.26	30.20	30.11
F	0.50	22.53***	9.60***
N	18	15	33

Notes. Robust standard errors are given in parentheses.

** $p < 0.05$; *** $p < 0.01$.

Tobit regression results about whether the influence of role-specific subjective entitlements is affected by the role assignment procedure are shown on the right-hand side of Table 2.7 (p. 86). This regression indicates that the subordinate's entitlement has a significantly larger influence on agreements when relative performance information is provided ($p < 0.001$), while the influence of the superior's entitlement is not significantly different between treatments ($p = 0.156$).

2.1.4.3 Relationship between Performance-Specific and Role-Specific Subjective Entitlements and Negotiation Outcomes

H3a states that subjective entitlements are stronger when the provision of relative performance information is related to the assignment of hierarchical roles than when only relative performance information is provided. Therefore, we focused on the comparison of winners' and losers' entitlements in the INFO-NOROLE treatment with the entitlements of the winners in the role of the superior and the losers in the role of the subordinate in the INFO-ROLE treatment. While the winner's entitlement is significantly different from the superior's entitlement ($p = 0.0489$, MW test), there is no significant difference between the loser's and the subordinate's entitlement ($p = 0.5827$, MW test). Thus, H3a is partially supported in that only winners' performance-specific entitlements are increased by role-specific entitlements.

To test H3b asserting that agreements differ more from the equal split in favor of the winner in the role of the superior when the provision of relative performance information is related to the assignment of hierarchical roles than when only relative performance information is provided, we compared the agreements in the INFO-NOROLE treatment with the agreements in the INFO-ROLE treatment. As the average agreement is larger in the INFO-ROLE treatment than in the INFO-NOROLE treatment and as agreements in both treatments significantly differ from each other, ($p = 0.0190$, MW test), we find support for H3b.

With respect to the interaction effect of subjective entitlements and the assignment of hierarchical roles on agreements, the related Tobit regression results presented in the left column of Table 2.8 (p. 88) show that the superior's entitlement has a significantly larger effect on agreements than the winner's entitlement ($p = 0.066$), whereas the impact of the subordinate's entitlement is not significantly different from the influence of the loser's entitlement ($p = 0.104$).

Table 2.8: Agreements as a Function of Performance-Specific and Role-Specific Subjective Entitlements in Treatment Comparisons (Tobit Regressions)

Independent Variables	Dependent Variable: <i>Agreed Share (Winner's or Superior's Share)</i>	
	INFO-NOROLE versus INFO-ROLE	INFO-NOROLE versus NOINFO-ROLE
<i>Intercept</i>	0.173 (0.139)	0.173 (0.139)
<i>Role</i>	-0.526** (0.197)	
<i>Info_Role</i>		0.338* (0.194)
<i>Winner_Superior_Entitle</i>	0.127 (0.131)	0.127 (0.130)
<i>Role x Winner_Superior_Entitle</i>	0.402* (0.211)	
<i>Info_Role x Winner_Superior_Entitle</i>		0.046 (0.220)
<i>Loser_Subordinate_Entitle</i>	0.562* (0.279)	0.562* (0.279)
<i>Role x Loser_Subordinate_Entitle</i>	0.581 (0.348)	
<i>Info_Role x Loser_Subordinate_Entitle</i>		-0.623* (0.312)
<i>Log-L</i>	79.93	43.72
<i>F</i>	15.61***	2.71**
<i>N</i>	39	42

Notes. Robust standard errors are given in parentheses.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Finally, we examined the relationship between the provision of relative performance information and the random assignment of hierarchical roles. According to H4a, role-specific subjective entitlements elicited by the random assignment of hierarchical roles should be weaker than performance-specific subjective entitlements elicited by the provision of relative performance information. To test this hypothesis, we compared winners' and losers' subjective entitlements in the INFO-NOROLE treatment with superiors' and subordinates' entitlements in the NOINFO-ROLE treatment. While the winner's performance-specific entitlement does

not significantly differ from the average superior's role-specific entitlement ($p = 0.9919$, MW test), the loser's entitlement is larger than and significantly different from the subordinate's entitlement ($p = 0.0009$, MW test). Hence, while the provision of relative performance information and the random assignment of hierarchical roles lead to similar subjective entitlements in terms of winners and superiors, both mechanisms elicit different entitlements from losers and subordinates. Thus, H4a is partially supported.

H4b states that randomly assigned superiors are favored less by agreements than winners in the case of the provision of relative performance information. The comparison of the agreements in the INFO-NOROLE treatment with the agreements in the NOINFO-ROLE treatment shows no significant difference ($p = 0.5839$, MW test). Thus, H4b is not supported.

Tobit regression results for the analysis of the interaction between subjective entitlements and the provision of relative performance information and the random assignment of hierarchical roles, respectively, are depicted in the right column of Table 2.8 (p. 88). These results support the aforementioned findings in that the subordinate's entitlement has a significantly lower effect on agreements than the loser's entitlement ($p = 0.053$), whereas the superior's entitlement does not influence agreements differently in quantitative terms compared to the winner's entitlement ($p = 0.836$).

2.1.4.4 Supplementary Analyses

In the supplementary analyses, we examine the influence of subjective entitlements on negotiation duration. Furthermore, we present robustness checks of our main results by analyzing the negotiators' perceptions of procedural fairness and by including the negotiators' perceptions of procedural fairness and the negotiators' SVO into our robust Tobit regressions.

Influence of Subjective Entitlements on Negotiation Duration

As Karagözoğlu and Riedl (2015) showed that negotiation duration, i.e. the time spent until an agreement is reached, might also vary as a function of tension in negotiation partners' subjective entitlements (i.e. differences between negotiation partners' subjective entitlements), we analyzed whether negotiation duration would differ between treatments and whether it is influenced by the differences in negotiation partners' performance-specific and role-specific entitlements, respectively. Therefore, we investigated the duration in negotiations that reached an agreement.¹²

¹² To save space, we discuss these results rather informally here; for the detailed descriptive statistics and Tobit regression results, see Appendix A.1-1 (p. 103).

We find negotiation duration to be shortest when neither relative performance information is provided nor hierarchical roles are assigned (NOINFO-NOROLE: $M = 221.21$, $SD = 198.15$, $N = 24$). In contrast, negotiations last longer when relative performance information is provided and/or when hierarchical roles are assigned (NOINFO-ROLE: $M = 368.14$, $SD = 201.48$, $N = 18$; INFO-NOROLE: $M = 340.81$, $SD = 207.19$, $N = 24$; INFO-ROLE: $M = 346.80$, $SD = 160.72$, $N = 15$). Accordingly, a KW test indicates that negotiation duration significantly differs across treatments ($p = 0.0257$). Pairwise comparisons support the prior observation in such a way that differences in negotiation duration are only significant between the NOINFO treatments ($p = 0.0088$, MW test) and the NOROLE treatments ($p = 0.0198$, MW test), whereas differences between the INFO treatments ($p = 0.8174$, MW test) and ROLE treatments are insignificant ($p = 0.8565$, MW test). Moreover, the random assignment of hierarchical roles and the exclusive provision of relative performance information do not have a significantly different effect on negotiation duration ($p = 0.5419$, MW test).

When considering the treatments separately, robust Tobit regressions on negotiation duration depending on the tension in the winner's and the loser's subjective entitlements show that the tension in entitlements only significantly increases negotiation duration in both NOROLE treatments ($p < 0.001$ in both cases). However, the influence of the tension in entitlements is not significantly affected by the provision of relative performance information ($p = 0.854$).

Turning to the separate ROLE treatments, the tension in superiors' and subordinates' role-specific subjective entitlements do not have a significant impact on negotiation duration ($p \geq 0.271$). Furthermore, the influence of tension in role-specific entitlements is not significantly affected by the role assignment procedure ($p = 0.810$). Thus, we find no clear-cut influences of performance-specific or role-specific entitlements on negotiation duration.

When analyzing whether the influence of tension in the negotiation partners' subjective entitlements on negotiation duration differs between the INFO-NOROLE and the INFO-ROLE treatments, we find that the influence of tension in negotiation partners' entitlements on negotiation duration is significantly lower when relative performance information is related to the assignment of hierarchical roles ($p = 0.053$). Hence, agreements are reached faster in this latter case.

Finally, the tension in negotiation partners' subjective entitlements in the case of both the provision of relative performance information and the random assignment of hierarchical roles

have a similar impact on negotiation duration ($p = 0.167$). This result is in line with the finding that agreements do not differ from each other in both of these treatments.¹³

Robustness Checks

Based on our theoretical remarks about the perception of the assignment procedure of hierarchical roles, we assume that negotiation partners perceive the performance evaluation in the INFO treatments and the role assignment procedure in the ROLE treatments differently. Therefore, we measured the negotiators' perception of procedural fairness by four items in the post-negotiation questionnaire using a 7-point Likert scale (1 = "absolute rejection" to 7 = "absolute acceptance"). We tested the construct's validity with the Cronbach's α at 0.83 and deduced the factor values from a confirmatory factor analysis.¹⁴

As the winners' perception of procedural fairness in the INFO-NOROLE treatment and the perception of winners in the role of the superior in the INFO-ROLE treatment are not significantly different from each other ($p = 0.6653$, MW test), the exclusive provision of relative performance information and the provision of relative performance information related to the assignment of hierarchical roles are perceived as equally fair in terms of procedural fairness. In contrast, superiors perceive the random assignment of hierarchical roles as less fair than the assignment related to relative performance information ($p = 0.0564$, MW test). Finally, the winners' perception in the INFO-NOROLE treatment and the superiors' perception in the NOINFO-ROLE treatment significantly differ ($p = 0.0063$, MW test). These results are in line with our reasoning that the random assignment of hierarchical roles is perceived as less fair than both the provision of relative performance information and the role assignment based on relative performance information.

Surprisingly, the losers' and the subordinates' perceptions of procedural fairness, do not significantly differ between treatments ($p \geq 0.1308$). This finding suggests that losers and subordinates base their perception of procedural fairness more on their assigned role regardless of the provision of relative performance information or the promotion procedure.

¹³ The increase in tension in negotiation partners' subjective entitlements might indeed influence the occurrence of disagreements (Birkeland and Tungodden, 2014). However, only 14 out of the 95 work teams did not reach an agreement within the negotiation time of 10 minutes, making the statistical analysis regarding the effect of entitlements unreliable. For the interested reader, we report some results in Appendix A.1-2 (p. 107).

¹⁴ These items are depicted in Appendix A.1-3 (p. 108). For the detailed descriptive statistics and Tobit regression results, see Appendix A.1-3 (p. 108).

To analyze whether negotiation partners in a work team perceive the procedures differently, we examined the differences between negotiation partners' perceptions within the three treatments. In all three treatments, differences between the negotiation partners' perceptions do not significantly differ from each other ($p \geq 0.1305$). This indicates that negotiation partners hold a similar view on procedural fairness.¹⁵

As the perception of procedural fairness might influence the effects of subjective entitlements on reached agreements (H1b and H2b), we checked the robustness of our main effects by adding the factor values of the negotiation partners' perceptions of procedural fairness as control variables to the robust Tobit regressions for the three separate treatments. These analyses show that the effects of performance-specific and role-specific entitlements on agreements are robust to adding these control variables.

Finally, we explored the robustness of the marginal effects of subjective entitlements on reached agreements (H1b and H2b) by adding control variables for the negotiation partners' SVO to the robust Tobit regressions for the separate treatments. SVO was measured using the scale developed by Murphy *et al.* (2011).¹⁶ The Tobit regressions indicate that the effects of performance-specific and role-specific entitlements on agreements are robust to adding these control variables.

2.1.5 Discussion and Conclusion

In this paper, we investigated the effects of the provision of relative performance information and the assignment of hierarchical roles on subjective entitlements and their impact on negotiations on a jointly produced surplus. In sum, we find that both relative performance information and assigned hierarchical roles influence subjective entitlements and negotiation outcomes. In both cases, better performers and superiors feel entitled to a higher share of the joint output and realize favorable negotiation outcomes. With respect to superiors, this effect arises irrespective of the role assignment procedure (random versus performance-based). Moreover, when power and performance are aligned, i.e. performance-specific and role-specific subjective entitlements enforce each other, superiors reach the most favorable negotiation outcomes for themselves and inequity between the negotiation partners is highest.

¹⁵ Consistent with the results on perceptions of procedural fairness, we find negotiation partners to hold similar views on the fairness of their negotiation outcomes in distributive terms as well. For detailed descriptive statistics and statistical inference, see Appendix A.1-4 (p. 113).

¹⁶ For the detailed Tobit regression results, see Appendix A.1-3 (p. 108).

With respect to performance-specific subjective entitlements, these entitlements are stronger when relative performance information is provided. However, better and worse performers show different patterns of performance-specific entitlements. Better performers feel entitled to a larger share of the pie than the equal split in all treatments where either performance information is provided and/or hierarchical roles are assigned, whereas worse performers only ascribe more than the equal split to better performers when performance information is provided. Furthermore, negotiation partners' performance-specific entitlements are mutually inconsistent irrespective of the provision of relative performance information. These findings contrast with the results in Karagözoğlu and Riedl (2015) and might be due to the fact that the combination of relative performance information and the assignment of hierarchical roles has a different impact on entitlements than the combination of relative performance information and production uncertainties.

However, agreements in the negotiations on the jointly produced surplus are significantly influenced by the provision of relative performance information. That is, agreements reach or are close to the equal split when no performance information is provided, while they are skewed toward the better performer when performance information is provided. Consequently, better performers can only translate their entitlements into favorable negotiation outcomes when performance information is available. This might be due to the fact that it is only in this case that worse performers acknowledge the better performers' aspirations. Furthermore, as performance-specific subjective entitlements have an impact on agreements in all treatments in various ways, they seem to be an important driver of negotiations on a jointly produced surplus.

Turning to the role-specific subjective entitlements derived from the assignment of hierarchical roles, we find several significant differences. Superiors feel entitled to more than the equal split irrespective of whether hierarchical roles are assigned randomly or based on relative performance information. By contrast, subordinates only ascribe more than the equal split to superiors when the role assignment is accompanied by relative performance information. Thus, as for worse performers, subordinates need an indication of legitimacy to acknowledge the superiors' entitlements. Again, superiors' and subordinates' entitlements are mutually inconsistent irrespective of the assignment procedure.

In line with negotiation research, which reveals that powerful negotiators reach higher negotiation outcomes than less powerful negotiators (e.g., Giebels *et al.*, 2000; Olekalns, 1991; Pinkley *et al.*, 1994), agreements are skewed in favor of superiors irrespective of the role assignment procedure. However, it is only when the role assignment is related to relative

performance information that agreements are driven by the negotiation partners' subjective entitlements.

When performance-specific and role-specific subjective entitlements coincide because the assignment of hierarchical roles is based on relative performance information, better performers assigned to the role of the superior derive even higher entitlements compared to when only performance information is provided. Thus, performance-specific and role-specific entitlements seem to reinforce each other. However, this difference between treatments does not hold for the related worse performers in the role of the subordinate. Nevertheless, agreements favor better performers in the role of the superior more than better performers when only performance information is provided. In line with results showing that powerful individuals reach higher outcomes in economic games (Rode and Le Menestrel, 2011; Rodriguez-Lara, 2016), better performers assigned to the role of the superior might enforce their entitlements to a greater extent because of their ultimate decision power in the case of a negotiation impasse.

By contrast, when either performance information is provided or hierarchical roles are assigned randomly, better performers' performance-specific subjective entitlements and superiors' role-specific subjective entitlements are not different from each other. However, worse performers apportion larger entitlements to better performers than subordinates apportion to their superiors. This again shows that the apparently weaker negotiation partner needs a reliable indication to acknowledge the stronger party's entitlement. Nevertheless, the respective agreements favor better performers when relative performance information is provided and superiors when roles are assigned randomly in a similar way. Hence, as better performers' and superiors' entitlements do not differ from each other and subordinates apportion lower entitlements to superiors than worse performers apportion to better performers, it might again be the threat of the superior's ultimate decision power that drives this result.

The analysis of negotiation duration reveals that negotiation duration is hardly influenced by treatment effects. However, the tension in negotiation partners' performance-specific subjective entitlements increases negotiation duration when no hierarchical roles are assigned. By contrast, the tension in role-specific subjective entitlements does not have an impact on negotiation duration. These results highlight that although both types of entitlements have similar effects on agreements, they have a different impact on the negotiation process.

Supplementary analyses on perceptions of procedural fairness show that superiors perceive the random assignment of hierarchical roles to be less procedurally fair than better performers perceive the provision of relative performance information or than superiors perceive the

assignment of hierarchical roles related to relative performance information. This is in line with the general notion that random promotion processes are perceived as less fair (Fleiß, 2015). In contrast, worse performers and subordinates perceive the respective processes as similarly fair. Interestingly, negotiation partners in all treatments where performance information is provided and/or hierarchical roles are assigned hold similar perceptions of procedural fairness. However, as the differences of randomly assigned superiors' and better performers' perceptions of procedural fairness do not translate into distinct agreements, there is evidence to suggest that randomly assigned superiors do not attach as much importance to their fairness perceptions as to their role-specific entitlements. This is in line with the study conducted by Luhan *et al.* (2013) who showed that subjective entitlements of better performers who are assumed to have more bargaining power due to their higher performance are more important than their abstract distributive fairness ideals. Furthermore, this finding corresponds to results of a redistribution experiment indicating that the motive of self-interest can explain individuals' redistribution decisions (Rutström and Williams, 2000).

Finally, our main results on the marginal effects of subjective entitlements on agreements are shown to be robust against adding negotiation partners' perceptions of procedural fairness or negotiation partners' SVO to the respective analyses. Thus, we can conclude that the effects of performance-specific and role-specific entitlements are stable drivers of negotiations on a jointly produced surplus.

Our results have several theoretical and practical implications. With respect to theoretical considerations, we contribute to negotiation theory because theory-based models are mostly silent about the origins of entitlements serving as reference points and applied fairness norms (see also Karagözoğlu and Riedl, 2015). We go beyond previous findings on the reference points and fairness norms in negotiations by showing that subjective entitlements do not only originate from relative performance information but also from the assignment of hierarchical positions. Furthermore, as the comparison of these different sources of entitlements sheds light on their specific effects on negotiation outcomes as well as on psychological outcomes in the form of perceptions of procedural fairness, our findings can benefit existing bargaining models that explicitly take entitlement beliefs into account (e.g., Tomlinson, 2013).

In addition, as the provision of performance information and the assignment of hierarchical roles are factors that are endogenous to the economic environment and that can drive negotiation processes, organizations are supposed to be aware of their effects for practical purposes (see also Karagözoğlu and Riedl, 2015). In particular, organizations should realize that even a promotion which is (perceived as) random such as an ad hoc promotion or a

promotion based on irrelevant skills elicits role-specific entitlements that skew agreements on a jointly produced surplus toward superiors, irrespective of whether the superior contributed more or less to the surplus. Simultaneously, such a random procedure is perceived to be less fair than a meritocratic procedure which can lead to negative long-term consequences such as sabotage or discouragement (Johnson and Salmon, 2016).

Although our results contribute to existing negotiation literature by analyzing the emergence and influence of performance-specific and role-specific subjective entitlements on negotiations over a jointly produced surplus, further research is needed. For instance, it is interesting to explore how the assignment of hierarchical roles that is based on criteria other than the performance in joint production tasks has an impact on entitlements and negotiation outcomes. Moreover, as the organizational culture influences subjective entitlements (Tomlinson, 2013), our experimental setting might be employed to study the influence of an organizational culture on negotiation outcomes. Finally, as negotiation partners might have to work together following the negotiation, it might be valuable to examine whether and how negotiation partners' perceptions of the fairness of the negotiated distribution will affect subsequent cooperation. Consequently, our experimental study could be a very useful basis for further research.

References for Research Paper 1

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Appendix of Research Paper 1

This appendix contains supplementary analyses for the paper “Performance Information and Hierarchy in Negotiations: The Importance of Subjective Entitlements”. It is organized in the following way. Appendix A.1-1 contains detailed descriptive statistics and robust Tobit regressions on negotiation duration that are discussed in section 2.1.4.4 of the paper. In Appendix A.1-2, we report additional analyses on disagreements. Appendix A.1-3 contains detailed descriptive statistics on negotiation partners’ perceptions of procedural fairness and robustness checks of the Tobit regression analyses that are discussed in section 2.1.4.4 of the paper. In Appendix A.1-4, additional analyses on negotiation partners’ perceptions of distributive fairness are presented. Finally, the experimental instructions are depicted in Appendix A.1-5.

A.1-1 Influence of Subjective Entitlements on Negotiation Duration

In this section, we report additional analyses on negotiation duration that are discussed in section 4.4.1 of the paper. Detailed descriptive statistics on negotiation durations in all four treatments are depicted in Table A.1-1.1 (p. 103).

Table A.1-1.1: Negotiation Duration for Work Teams with Performance Differences in Each Treatment

	NOINFO- NOROLE		NOINFO- ROLE		INFO- NOROLE		INFO- ROLE	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Negotiation Duration	221.21	198.15	368.14	201.48	340.81	207.19	346.80	160.72
No. of obs.	24		18		24		15	

Note. The table reports means (*M*) and standard deviations (*SD*) of negotiation duration excluding work teams that disagree.

To test the influence of the tension between negotiation partners’ performance-specific or role-specific subjective entitlements on negotiation duration, we ran robust Tobit regressions on negotiation duration dependent on the tension in the winner’s and the loser’s subjective entitlements ($\Delta_Entitle$) in the separate treatments. The tension in the winner’s and the loser’s subjective entitlements was defined as the difference between the winner’s and the loser’s subjective entitlements. Furthermore, to investigate whether the influence of performance-specific subjective entitlements is affected by the provision of relative performance

information, we conducted a robust Tobit regression for negotiation duration with a dummy variable for the provision of relative performance information (*Info*), the tension in the winner's and the loser's subjective entitlements ($\Delta_Entitle$), and an interaction variable ($Info \times \Delta_Entitle$). The related Tobit regression results are presented in Table A.1-1.2 (p. 104).

Table A.1-1.2: Negotiation Duration as a Function of Tension in Performance-Specific Subjective Entitlements in Each Treatment and Pooled Across Treatments (Tobit Regressions)

Independent Variables	Dependent Variable: <i>Negotiation Duration</i>				
	NOINFO-NOROLE	NOINFO-ROLE	INFO-NOROLE	INFO-ROLE	Pooled Treatments
<i>Intercept</i>	179.12*** (33.32)	329.75*** (60.83)	252.24*** (42.94)	322.03*** (51.06)	232.53*** (33.70)
<i>Info</i>					46.54 (49.65)
$\Delta_Entitle$	1,505.65*** (218.76)	655.80 (576.76)	1,579.25*** (332.86)	481.69 (448.09)	1,257.91*** (285.88)
$Info \times \Delta_Entitle$					-78.26 (424.22)
Log-L	-154.77	-119.84	-156.93	-96.61	-532.72
<i>F</i>	47.37***	1.29	22.51***	1.16	11.95***
<i>N</i>	24	18	24	15	81

Notes. Robust standard errors are given in parentheses.

*** $p < 0.01$.

As revealed by the first four columns of Table A.1-1.2 (p. 104), the tension in the winner's and the loser's performance-specific subjective entitlements only has a significantly positive effect on negotiation duration in the NOROLE treatments ($p < 0.001$ in both cases). Furthermore, the column on the right-hand side shows that the provision of relative performance information does not significantly affect the influence of tension in negotiation partners' performance-specific subjective entitlements on negotiation duration ($p = 0.854$).

As for the influence of tension in role-specific entitlements on negotiation duration, we conducted robust Tobit regressions on negotiation duration dependent on the tension in the superior's and the subordinate's entitlements ($\Delta_Role_Entitle$) in the ROLE treatments. The tension in the superior's and the subordinate's subjective entitlements was defined as the difference between the superior's and the subordinate's subjective entitlements. To analyze

whether the influence of role-specific entitlements is affected by the provision of relative performance information, a robust Tobit regression for negotiation duration with a dummy variable for the provision of relative performance information (*Info*), the tension in the superior's and the subordinate's entitlements ($\Delta_Role_Entitle$), and an interaction variable ($Info \times \Delta_Role_Entitle$) was applied. The corresponding Tobit regression results are depicted in Table A.1-1.3 (p. 105).

Table A.1-1.3: Negotiation Duration as a Function of Tension in Role-Specific Subjective Entitlements in Each ROLE Treatment and Pooled Across ROLE Treatments (Tobit Regressions)

Independent Variables	Dependent Variable: <i>Negotiation Duration</i>		
	NOINFO-ROLE	INFO-ROLE	Pooled ROLE Treatments
<i>Intercept</i>	329.75*** (60.83)	322.03*** (51.06)	329.75*** (60.03)
<i>Info</i>			-7.72 (78.19)
$\Delta_Role_Entitle$	655.80 (576.76)	481.69 (448.09)	655.80 (569.20)
$Info \times \Delta_Role_Entitle$			-174.12 (719.21)
Log-L	-119.84	-96.61	-216.82
<i>F</i>	1.29	1.16	0.88
<i>N</i>	18	15	33

Notes. Robust standard errors are given in parentheses.

*** $p < 0.01$.

The first two columns of Table A.1-1.3 (p. 105) show that the tension in the superior's and the subordinate's role-specific subjective entitlements does not significantly influence negotiation duration ($p \geq 0.271$). Moreover, the role assignment procedure does not have a significant impact on the effect of tension in the superior's and the subordinate's role-specific subjective entitlements on negotiation duration ($p = 0.810$).

To investigate whether the influence of tension in the negotiation partners' entitlements on negotiation duration differs between the INFO-NOROLE and the INFO-ROLE treatments, and between the INFO-NOROLE and the NOINFO-ROLE treatments, respectively, we ran robust Tobit regressions for negotiation duration with a dummy variable for the assignment of

hierarchical roles (*Role* and *Info_Role*, respectively), the difference between the winner's or the superior's entitlement and the loser's or the subordinate's entitlements ($\Delta_Performance_Role_Entitle$), and an interaction variable ($Role \times \Delta_Performance_Role_Entitle$ and $Info_Role \times \Delta_Performance_Role_Entitle$, respectively). The Tobit regression results are presented in Table A.1-1.4 (p. 106).

Table A.1-1.4: Negotiation Duration as a Function of Performance-Specific and Role-Specific Subjective Entitlements in Treatment Comparisons (Tobit Regressions)

Independent Variables	Dependent Variable: <i>Negotiation Duration</i>	
	INFO-NOROLE versus INFO-ROLE	INFO-NOROLE versus NOINFO-ROLE
<i>Intercept</i>	252.24*** (42.59)	252.24*** (42.55)
<i>Role</i>	69.79 (65.66)	
<i>Info_Role</i>		77.51 (73.42)
$\Delta_Performance_Role_Entitle$	1,579.25*** (330.10)	1,579.25*** (329.80)
$Role \times \Delta_Performance_Role_Entitle$	-1,097.56* (548.90)	
$Info_Role \times \Delta_Performance_Role_Entitle$		-923.45 (656.20)
Log-L	-253.62	-276.91
F	8.08***	8.09***
N	39	42

Notes. Robust standard errors are given in parentheses.

* $p < 0.10$; *** $p < 0.01$.

When comparing the INFO-NOROLE and the INFO-ROLE treatments, the column on the left-hand side of Table A.1-1.4 (p. 106) reveals that the impact of tension in the negotiation partners' subjective entitlements on negotiation duration is significantly lower when the provision of relative performance information is related to the assignment of hierarchical roles ($p = 0.053$). The column on the right-hand side shows that the provision of relative performance

information and the random assignment of hierarchical roles have similar effects on negotiation duration ($p = 0.167$).

A.1-2 Disagreements and Entitlements

As disagreements become more likely when the tension between the negotiation partners' subjective entitlements increases (Birkeland and Tungodden, 2014), we examined the occurrence of disagreements. In total, 14 out of the 95 work teams did not reach an agreement within the negotiation time of 10 minutes: one in the NOINFO-NOROLE treatment, seven in the NOINFO-ROLE treatment, and six in the INFO-ROLE treatment. Thus, while the provision of relative performance information does not lead to more disagreements ($p = 0.7157$, MW test), the assignment of hierarchical roles gives rise to a significant difference in the occurrence of disagreements ($p = 0.0003$, MW test).

Using the pooled data, the robust Probit regression in the column on the left of Table A.1-2.1 (p. 107) estimating the likelihood of a disagreement dependent on the tension in the winner's and the loser's performance-specific subjective entitlements ($\Delta_Entitle$) shows that an increase in tension has a significantly positive effect on the likelihood of a disagreement ($p < 0.001$).

Table A.1-2.1: Likelihood of Disagreement as a Function of Tension in Performance-Specific or Role-Specific Subjective Entitlements Pooled Across Treatments (Probit Regressions)

Independent Variables	Dependent Variable: <i>Disagreement</i>	
	Tension in Performance-Specific Subjective Entitlements	Tension in Role-Specific Subjective Entitlements
<i>Intercept</i>	-1.90*** (0.27)	-1.50*** (0.34)
$\Delta_Entitle$	7.65*** (1.64)	
$\Delta_Role_Entitle$		8.06*** (2.19)
Log-L	-25.95	-18.94
<i>F</i>	21.85***	13.56***
<i>N</i>	95	46

Notes. Robust standard errors are given in parentheses.

*** $p < 0.01$.

The same pattern is found for the tension between the superior's and the subordinate's role-specific subjective entitlements ($\Delta_Role_Entitle$) in the column on the right of Table A.1-2.1 (p. 107) ($p < 0.001$). Hence, the tension in both performance-specific and role-specific subjective entitlements has a significant influence on the likelihood of a disagreement.

As superiors in the ROLE treatments have the ultimate decision power in case of a disagreement, we were also interested in examining whether superiors exploit this power. In case of a disagreement, the average superior's share amounts to 0.775 ($SD = 0.169$) when hierarchical roles are randomly assigned and to 0.742 ($SD = 0.143$) when the role assignment is related to performance information. Hence, superiors receive a significantly larger share of the surplus in the case of a disagreement than in the case of an agreement ($p \leq 0.0109$, MW tests). However, the superior's share in the case of a disagreement does not significantly differ between both treatments ($p = 0.5197$, MW test). Thus, it can be assumed that superiors exploit their power irrespective of the assignment procedure.

A.1-3 Robustness Checks

In this section, we report detailed statistics and the results of checks for the robustness of the marginal effects of subjective entitlements on reached agreements that are discussed in section 2.1.4.4 of the paper. First, we depict descriptive statistics on negotiation partners' perceptions of procedural fairness. Second, we present the results of robust Tobit regressions in which negotiation partners' perceptions of procedural fairness are included as control variables. Finally, we show the results of robust Tobit regressions in which negotiation partners' SVOs are comprised as control variables.

We measured the negotiators' perception of procedural fairness by four items in the post-negotiation questionnaire using a 7-point Likert scale (1 = "absolute rejection" to 7 = "absolute acceptance"). The items were as follows: "I considered the process which led to the performance evaluation (and to the promotion decision) to be fair."; "I considered the criteria which were defined for the performance evaluation (and for the promotion decision) to be fair."; "I would have behaved in the same way, if I had known the process of the performance evaluation (and the promotion process) better in advance."; "I would have behaved in the same way, if I had known the criteria of the performance evaluation (and the promotion criteria) better in advance." We tested the construct's validity with the Cronbach's α being 0.83 and deduced the factor values from a confirmatory factor analysis. Table A.1-3.1 (p. 109) reports descriptive statistics on winners' or superiors' as well as on losers' or subordinates' factor values for perceptions of procedural fairness.

Table A.1-3.1: Negotiation Partners' Perceptions of Procedural Fairness in Each Treatment (Excluding the Control Treatment)

	NOINFO-ROLE		INFO-NOROLE		INFO-ROLE	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Winner / Superior	-0.260	0.961	0.464	0.716	0.274	0.904
Loser / Subordinate	-0.376	1.087	0.078	0.929	-0.136	0.766
No. of obs.	25		24		21	

Notes. The table reports means (*M*) and standard deviations (*SD*) of factor values for the negotiation partners' perceptions of procedural fairness, respectively. In the NOINFO-ROLE treatment, factor values for superiors and subordinates are presented. In the INFO-NOROLE treatment, factor values for winners and losers are shown. In the INFO-ROLE treatment, factor values for winners in the role of the superior and losers in the role of the subordinate are illustrated.

To check the robustness of our main effects, we added the factor values of the negotiation partners' perceptions of procedural fairness as control variables. First, we ran robust Tobit regressions on agreements (winner's share) dependent on winners' and losers' performance-specific subjective entitlements (*Winner_Entitle* and *Loser_Entitle*) and their perceptions of procedural fairness (*Winner_Procedural* and *Loser_Procedural*) for the three separate treatments. The related Tobit regression results are depicted in Table A.1-3.2 (p. 110).

Table A.1-3.2: Robustness Check: Agreements as a Function of Performance-Specific Subjective Entitlements and Perception of Procedural Fairness in Each Treatment Excluding the Control Treatment (Tobit Regressions)

Independent Variables	Dependent Variable: <i>Agreed Share (Winner's Share)</i>		
	NOINFO-ROLE	INFO-NOROLE	INFO-ROLE
<i>Intercept</i>	-0.018 (0.238)	0.138 (0.123)	-0.530*** (0.104)
<i>Winner_Entitle</i>	0.765*** (0.197)	0.187 (0.115)	0.715*** (0.103)
<i>Loser_Entitle</i>	0.269 (0.374)	0.555** (0.232)	1.270*** (0.146)
<i>Winner_Procedural</i>	0.018 (0.032)	0.009 (0.009)	-0.006 (0.007)
<i>Loser_Procedural</i>	0.054 (0.044)	-0.009 (0.006)	-0.038*** (0.008)
<i>Log-L</i>	10.31	51.04	37.10
<i>F</i>	5.67***	2.98**	36.48***
<i>N</i>	18	24	15

Notes. Robust standard errors are given in parentheses.

** $p < 0.05$; *** $p < 0.01$.

The results in Table A.1-3.2 (p. 110) show that the winner's perception of procedural fairness does not significantly influence agreements ($p \geq 0.321$), while the loser's perception of procedural fairness only has a significantly negative impact on agreements in the INFO-ROLE treatment ($p = 0.001$). However, the effects of the winner's and the loser's performance-specific subjective entitlements on agreements are robust to adding the control variables for negotiation partners' perceptions of procedural fairness.

Second, we conducted robust Tobit regressions on agreements (superior's share) dependent on superiors' and subordinates' role-specific subjective entitlements (*Superior_Entitle* and *Subordinate_Entitle*) and their perceptions of procedural fairness (*Superior_Procedural* and *Subordinate_Procedural*) in the ROLE treatments. The related Tobit regression results are shown in Table A.1-3.3 (p. 111).

Table A.1-3.3: Robustness Check: Agreements as a Function of Role-Specific Subjective Entitlements and Perception of Procedural Fairness in Each ROLE Treatment (Tobit Regressions)

Independent Variables	Dependent Variable: <i>Agreed Share (Superior's Share)</i>	
	NOINFO-ROLE	INFO-ROLE
<i>Intercept</i>	0.626*** (0.183)	-0.530*** (0.104)
<i>Superior_Entitle</i>	0.082 (0.301)	0.715*** (0.103)
<i>Subordinate_Entitle</i>	-0.236 (0.154)	1.270*** (0.146)
<i>Superior_Procedural</i>	-0.049* (0.024)	-0.006 (0.007)
<i>Subordinate_Procedural</i>	-0.039 (0.030)	-0.038*** (0.008)
Log-L	14.60	37.10
F	1.67	36.48***
N	18	15

Notes. Robust standard errors are given in parentheses.

* $p < 0.10$; *** $p < 0.01$.

The results in Table A.1-3.3 (p. 111) reveal that the superior's perception of procedural fairness only significantly decreases agreements in the NOINFO-ROLE treatment ($p = 0.064$), whereas the subordinate's perception of procedural fairness only has a significantly negative impact on agreements in the INFO-ROLE treatment ($p = 0.001$). However, the effects of the superior's and the subordinate's role-specific subjective entitlements on agreements are robust to adding the control variables for negotiation partners' perceptions of procedural fairness.

To further check for the robustness of the marginal effects of subjective entitlements, we added control variables for the negotiation partners' SVO measured using the scale developed by Murphy *et al.* (2011) to our robust Tobit regressions. First, we ran robust Tobit regressions on agreements (winner's share) dependent on negotiation partners' performance-specific subjective entitlements (*Winner_Entitle* and *Loser_Entitle*) and negotiation partners' SVO angles (*Winner_SVO* and *Loser_SVO*) for the separate treatments. The related Tobit regression results are presented in Table A.1-3.4 (p. 112).

Table A.1-3.4: Robustness Check: Agreements as a Function of Performance-Specific Subjective Entitlements and SVO in Each Treatment (Tobit Regressions)

Independent Variables	Dependent Variable: <i>Agreed Share (Winner's Share)</i>			
	NOINFO-NOROLE	NOINFO-ROLE	INFO-NOROLE	INFO-ROLE
<i>Intercept</i>	0.493*** (0.005)	0.015 (0.192)	0.165* (0.079)	-0.352*** (0.108)
<i>Winner_Entitle</i>	0.010 (0.009)	0.726*** (0.207)	0.034 (0.069)	0.541*** (0.149)
<i>Loser_Entitle</i>	0.005** (0.002)	0.293 (0.335)	0.830*** (0.196)	1.052*** (0.160)
<i>Winner_SVO</i>	-4.17e-06 (8.08e-06)	-0.001 (0.001)	-0.001*** (0.0005)	0.001** (0.0005)
<i>Loser_SVO</i>	8.40e-06* (4.24e-06)	-0.001 (0.001)	-0.001* (0.001)	0.0003 (0.001)
Log-L	141.42	8.65	55.98	31.78
F	1.63	4.53**	5.73***	24.09***
N	24	18	24	15

Notes. Robust standard errors are given in parentheses.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

The results in Table A.1-3.4 (p. 112) indicate that the winner's SVO only has a significant impact on agreements in the INFO treatments ($p \leq 0.030$), while the loser's SVO significantly influences agreements in the NOROLE treatments ($p \leq 0.072$). However, the effects of the winner's and the loser's performance-specific subjective entitlements on agreements are robust to adding the control variables for negotiation partners' SVOs.

Second, we conducted robust Tobit regressions on agreements (superior's share) dependent on negotiation partners' role-specific subjective entitlements (*Superior_Entitle* and *Subordinate_Entitle*) and negotiation partners' SVO angles (*Superior_SVO* and *Subordinate_SVO*) in the ROLE treatments. The related Tobit regression results are depicted in Table A.1-3.5 (p. 113).

Table A.1-3.5: Robustness Check: Agreements as a Function of Role-Specific Subjective Entitlements and SVO in Each ROLE Treatment (Tobit Regressions)

Independent Variables	Dependent Variable: <i>Agreed Share (Superior's Share)</i>	
	NOINFO-ROLE	INFO-ROLE
<i>Intercept</i>	0.953 (0.599)	-0.352*** (0.108)
<i>Superior_Entitle</i>	-0.235 (0.565)	0.541*** (0.149)
<i>Subordinate_Entitle</i>	-0.188 (0.338)	1.052*** (0.160)
<i>Superior_SVO</i>	-0.006 (0.006)	0.001** (0.0005)
<i>Subordinate_SVO</i>	0.001 (0.002)	0.0003 (0.001)
Log-L	11.70	31.78
F	1.80	24.09***
N	18	15

Notes. Robust standard errors are given in parentheses.

** $p < 0.05$; *** $p < 0.01$.

The results in Table A.1-3.5 (p. 113) show that the superior's SVO only has a significant impact on agreements in the INFO-ROLE treatment ($p = 0.030$), whereas the subordinate's SVO does not significantly influence agreements ($p \geq 0.668$). However, the effects of the superior's and the subordinate's role-specific subjective entitlements on agreements are robust to adding the control variables for negotiation partners' SVOs.

A.1-4 Perceptions of Distributive Fairness

To shed light on whether the negotiators perceive their negotiation outcomes as fair in distributive terms in the case of an agreement, the negotiators' perception of distributive fairness was measured using four items (modified version from Colquitt, 2001; Scott *et al.*, 2007) in the post-negotiation questionnaire using a 7-point Likert scale (1 = "absolute rejection" to 7 = "absolute acceptance"). The Cronbach's α was 0.88. We deduced the factor values from a confirmatory factor analysis.

Table A.1-4.1 (p. 114) shows descriptive statistics on the winners' and losers' factor values for perceptions of distributive fairness in all four treatments.

Table A.1-4.1: Winners' and Losers' Perceptions of Distributive Fairness in Each Treatment

	NOINFO- NOROLE		NOINFO- ROLE		INFO- NOROLE		INFO- ROLE	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Winner	0.306	0.647	-0.204	1.121	0.375	0.704	0.390	0.779
Loser	0.176	0.738	-0.184	1.088	0.117	0.837	0.067	0.723
No. of obs.	24		18		24		15	

Note. The table reports means (*M*) and standard deviations (*SD*) of factor values for the winners' and losers' perceptions of distributive fairness, respectively.

Winners' perceptions of distributive fairness do not significantly differ across treatments ($p = 0.2146$, KW test). However, there is a significant difference in the winners' perceptions between the ROLE treatments ($p = 0.0890$, MW test). Thus, the role assignment procedure seems to influence winners' perceptions of distributive fairness. In contrast, losers' perceptions of distributive fairness are not influenced by treatment effects ($p \geq 0.3404$, KW test and MW tests). This latter result might be due to the fact that individuals with lower performance are less focused on distributive fairness. Furthermore, winners' and losers' perceptions of distributive fairness do not significantly differ from each other within the separate treatments ($p \geq 0.1451$, WSR tests). Thus, negotiation partners perceive their negotiation outcomes as similarly fair.

As for the ROLE treatments, summary statistics on superiors' and subordinates' factor values for perceptions of distributive fairness are depicted in Table A.1-4.2 (p. 114).

Table A.1-4.2: Superiors' and Subordinates' Perceptions of Distributive Fairness in ROLE Treatments

	NOINFO-ROLE		INFO-ROLE	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Superior	-0.007	1.028	0.390	0.779
Subordinate	-0.381	1.143	0.067	0.723
No. of obs.	18		15	

Note. The table reports means (*M*) and standard deviations (*SD*) of factor values for the superiors' and subordinates' perceptions of distributive fairness, respectively.

As both superiors' and subordinates' perceptions of distributive fairness do not significantly differ between treatments ($p \geq 0.2054$, MW tests), the role assignment procedure does not have an impact on the fairness perceptions of negotiation partners. Furthermore, differences between superiors' and subordinates' perceptions are not significantly different from each other in both treatments ($p \geq 0.1556$, WSR tests). Hence, once again we find that negotiation partners perceive their negotiation outcomes as similarly fair.

Finally, comparisons between the INFO-NOROLE and the NOINFO-ROLE treatments indicate that neither winners' and superiors' perceptions nor losers' and subordinates' perceptions significantly differ from each other ($p \geq 0.1473$, MW tests). Consequently, as agreements between both treatments do not significantly differ from one another, subsequent perceptions of distributive fairness do not significantly vary either.

With regard to the treatments where no relative performance information is provided and where agreements were on or close to the equal split, the finding of negotiation partners' similar perceptions of distributive fairness is not surprising as equality might be the preferred fairness principle when no further information is available (De Cremer, 2003). Interestingly, in case of the provision of relative performance information, worse performers seem to acknowledge the better performers' entitlement to a higher share. This result contrasts with findings from allocation decisions that showed that both better and worse performers make decisions in a self-serving way (Feng *et al.*, 2013) and might be due to the interactive nature of negotiations compared to individual decisions.

A.1-5 Experimental Instructions

Notes:

The instructions have been translated from the German; the original instructions are available upon request.

Abbreviations for the three experimental treatments:

- NOINFO-NOROLE: No relative performance information was provided and no hierarchical roles were assigned.
- NOINFO-ROLE: No relative performance information was provided and hierarchical roles were assigned independently of the participants' performances in the general knowledge quiz.
- INFO-NOROLE: Relative performance information was provided and no hierarchical roles were assigned.
- INFO-ROLE: Relative performance information was provided and hierarchical roles were assigned according to the participants' performances in the general knowledge quiz.

Text written in pink: Only participants in the INFO treatments were provided with this text. In the case that there is an alternative text in the NOINFO treatments, this text is shown below the respective screens.

Text written in green: Only participants who were assigned to hierarchical roles in the ROLE treatments were provided with this text. Below the respective screens, differences between the two ROLE treatments or differences between the ROLE treatments and the NOROLE treatments are shown.

Text written in orange: In half of the dyads in the ROLE treatments, the participant in the role of the superior had to make the first offer, whereas in the other half of the dyads in the ROLE treatments, it was the participant in the role of the subordinate who made the first offer. In the screens presented, the participant in the role of the subordinate makes the first offer. Below the respective screens, the text in the case of the participant in the role of the superior making the first offer is shown.

Text written in brown: Regarding the negotiation, only the screens for the participant in the role of the superior in the ROLE treatments are shown. Below the respective screens, differences in the text for participants in the role of the subordinate in the ROLE treatments, and differences in the text for the NOROLE treatments are shown.

The goal of this study is to find out how people conduct negotiations in their workplace. The experiment consists of several parts:

- 1) A section with INFORMATION about your today's task.
- 2) A section where you will LEARN something about the composition of your payment.
- 3) A section where you will work on TASKS.
- 4) A section where you will conduct a NEGOTIATION.
- 5) A final questionnaire.

[Click here to get started.](#)

INFORMATION: Initial Situation

In preparation for this experiment, please imagine that you work for a medium-sized company.

In this company, there is an available salary budget of 2210 ECU (= Experimental Currency Units) for the remuneration of a work team (consisting of two persons). However, the salary budget can be – depending on the performance of both persons in the work team – higher (2730 ECU), equal (2210 ECU) or lower (1690 ECU).

As the company's top management do not want to dictate a salary budget allocation between the two persons of the work team, the salary budget allocation between both persons in the work team has to be negotiated.

[Next](#)

LEARNING PROCESS: Your Today's Task

In your today's task, you will be randomly assigned to a work team, consisting of you and another person (= your partner). As the interaction will exclusively take place via the computer, you will never find out who the other person is, neither will your partner find out who you are.

You and your partner will work on a general knowledge quiz. Your performance and the performance of your partner will jointly determine the salary budget to be divided up. **In addition, dependent on your performances, the roles of the superior and the subordinate will be assigned to you and your partner.**

Subsequently, you will conduct a negotiation with your partner about the allocation of the salary budget between you and your partner.

In detail:

1. You will be assigned to a work team. Each team consists of two persons – you and your partner. The assignment to a work team will not change during the experiment.
2. You and your partner will work on a general knowledge quiz. Your performance and the performance of your partner will jointly determine the salary budget to be divided up.
3. **Depending on your performance and your partner's performance, you and your partner will be assigned to the roles of the superior and the subordinate. The role of the superior will be assigned to the one who has the better performance in task-processing, whereas the role of the subordinate will be assigned to the one with the worse performance.**
4. You and your partner will conduct a negotiation on the allocation of the salary budget.

A rectangular button with a grey gradient and a black border, containing the word "Next" in a black sans-serif font.

* For participants in the NOINFO-ROLE treatment, the first text written in green was replaced by "In addition, independent of your performance and your partner's performance, the roles of the superior and the subordinate will be assigned to you and your partner."

For participants in the NOINFO-ROLE treatment, the second text written in green was replaced by "Independent of your performance and your partner's performance, you and your partner will be assigned to the roles of the superior and the subordinate."

LEARNING PROCESS: Description of Your Task (1)**Part 1: Amount of the Salary Budget to Be Divided Up**

The amount of the salary budget will be determined by your and your partner's performance (= number of correct answers) in a general knowledge quiz, each quiz consisting of 16 questions from several areas of knowledge, as follows:

- If you and your partner jointly answer between 0 and 10 questions correctly, the salary budget to be divided up will be 1690 ECU.
- If you and your partner jointly answer between 11 and 20 questions correctly, the salary budget to be divided up will be 2210 ECU.
- If you and your partner jointly answer between 21 and 32 questions correctly, the salary budget to be divided up will be 2730 ECU.

After you and your partner have answered all questions, you will find out the amount of the salary budget to be divided up.

The one (either you or your partner) with the **most correct answers** has **the better performance**. *After answering the questions, you and your partner will find out who the better and who the worse performer was.*

Depending on your performance and your partner's performance, you and your partner will be assigned to the roles of the superior and the subordinate. The role of the superior will be assigned to the one who has the better performance in answering the questions, whereas the role of the subordinate will be assigned to the one with the worse performance.

Subsequently, you will conduct a negotiation with your partner on the allocation of the salary budget.

A rectangular button with a 3D effect, containing the word "Next" in a bold, sans-serif font.

- * For participants in the NOINFO treatments, the text written in pink was replaced by "After answering the questions, you and your partner will not find out who the better and who the worse performer was."
- * For participants in the NOINFO-ROLE treatment, the text written in green was replaced by "**Independent of your performance and your partner's performance**, you and your partner will be assigned to the roles of the superior and the subordinate."

LEARNING PROCESS: Description of Your Task (2)Part 2: Negotiation on the Allocation of the Salary Budget

After the announcement of the amount of the salary budget to be divided up, you will conduct a negotiation with your partner on the allocation of the salary budget between you and your partner.

Your goal is to maximize your individual utility.

Both you and your partner will have the opportunity to make offers concerning the allocation of the salary budget.

Overall, you will have 10 minutes to reach an agreement with your partner. The negotiation will end as soon as you and your partner reach an agreement concerning the allocation of the salary budget. You will have reached an agreement if both of you make the same offer in direct succession. **If you do not reach an agreement within the 10 minutes, the one in the role of the superior will determine the salary budget allocation without involving the one in the role of the subordinate.**

A rectangular button with a 3D effect, containing the word "Next" in a bold, sans-serif font.

* For participants in the NOROLE treatments, the text written in green was replaced by
“If you do not reach an agreement within the 10 minutes, the negotiation has failed and the salary budget to be divided up will be forfeited.”

LEARNING PROCESS: Composition of Your Payment

Both your payment and your partner's payment will depend on the allocation of the salary budget which you and your partner negotiate, as well as on your estimation of your own performance and of your partner's performance in the general knowledge quiz.

For reiteration:

The amount of the salary budget will be determined by your and your partner's joint performance (= number of correct answers) in the general knowledge quiz as follows:

- If you and your partner jointly answer between 0 and 10 questions correctly, the salary budget to be divided up will be 1690 ECU.
- If you and your partner jointly answer between 11 and 20 questions correctly, the salary budget to be divided up will be 2210 ECU.
- If you and your partner jointly answer between 21 and 32 questions correctly, the salary budget to be divided up will be 2730 ECU.

After the general knowledge quiz, you will be informed about the amount of the salary budget. Based on this, you will estimate your performance and your partner's performance. Depending on the accuracy of your estimation, you can earn an additional payment, which will not be incorporated into the negotiation:

- If your estimation is exactly equal to the actual number of correct answers, you will receive 52 ECU.
- If your estimation differs by -1 or +1 from the actual number of correct answers, you will receive 26 ECU.
- If your estimation differs by -2 or +2 from the actual number of correct answers, you will receive 13 ECU.
- Otherwise, you will receive 0 ECU.

Subsequently, you will negotiate on the allocation of the salary budget with your partner.

If you and your partner reach an agreement concerning the allocation of the salary budget, both your payoff and your partner's payoff, based on the negotiation result, will correspond to the negotiated allocation of the salary budget, i.e. both you and your partner will receive the amount of ECU that you both agreed on.

If you and your partner do not reach an agreement concerning the allocation of the salary budget, both your and your partner's payment, based on the negotiation result, will correspond to the allocation of the salary budget which was determined by the person in the role of the superior.

In addition to the payment which results from the accuracy of your estimation and the negotiation result, each of you will receive a basic payment in the amount of 520 ECU.

At the end of the experiment, the ECU will be converted into Euro at an **exchange rate of 130 ECU = 1 Euro**.

I have understood the details of payment.

* For participants in the NOROLE treatments, the text written in green was replaced by "If you and your partner do not reach an agreement concerning the allocation of the salary budget, both you and your partner's payment, based on the negotiation result, will be 0 ECU."

Please answer the following questions and then click on “Next”. You will not reach the next screen until you have answered all questions correctly.

1.	You will be randomly assigned to a work team consisting of you and another person (= your partner).	☐ Yes ☐ No
2.	You and your partner will negotiate on the allocation of the salary budget between the two of you.	☐ Yes ☐ No
3.	The amount of the salary budget to be divided up will be determined randomly.	☐ Yes ☐ No
4.	The amount of the salary budget to be divided up will be determined by the performance (= number of correct answers), that both you and your partner deliver in a general knowledge quiz.	☐ Yes ☐ No
5.	Following the general knowledge quiz, you and your partner will find out who the better and who the worse performer was.	☐ Yes ☐ No
6.	Independent of your performance and your partner’s performance, you and your partner will be assigned to the roles of the superior and the subordinate.	☐ Yes ☐ No
7.	Depending on your performance and your partner’s performance, you and your partner will be assigned to the roles of the superior and the subordinate.	☐ Yes ☐ No
8.	Overall, you will have 15 minutes to reach an agreement with your partner.	☐ Yes ☐ No
9.	Overall, you will have 10 minutes to reach an agreement with your partner.	☐ Yes ☐ No
10.	In the case that you and your partner do not reach an agreement within the given time, each of you will receive the entire salary budget.	☐ Yes ☐ No
11.	In the case that you and your partner do not reach an agreement within the given time, one of you will receive the entire salary budget.	☐ Yes ☐ No
12.	In the case that you and your partner do not reach an agreement within the given time, both you and your partner’s payment will correspond to the distribution of the salary budget which was determined by the person in the role of the superior. ¹	☐ Yes ☐ No

Next

¹ For participants in the NOROLE treatments, the text written in green was replaced by “In the case that you and your partner do not reach an agreement within the given time, the negotiation has failed and both you and your partner’s payment, based on the negotiation result, will be 0 ECU.”

Part 1: Amount of the Salary Budget to Be Divided Up

The amount of the salary budget will be determined by your and your partner's performance in a general knowledge quiz. Each of you will get the **same** 16 questions in the **same order**. The questions refer to several areas of knowledge. For each question, there is **exactly one correct** answer and several wrong answers.

The amount of the salary budget will be determined by your and your partner's joint performance (= number of correct answers) in the general knowledge quiz as follows:

- If you and your partner jointly answer between 0 and 10 questions correctly, the salary budget to be divided up will be 1690 ECU.
- If you and your partner jointly answer between 11 and 20 questions correctly, the salary budget to be divided up will be 2210 ECU.
- If you and your partner jointly answer between 21 and 32 questions correctly, the salary budget to be divided up will be 2730 ECU.

You will answer the questions at the computer. You will have **at most 30 seconds** to answer each question. Unanswered questions will count as wrong answers.

You can answer a question by choosing the option you believe is correct and subsequently clicking on "OK" within 30 seconds. The next question will then show up automatically. When you and your partner have answered all questions, you will find out the amount of the salary budget to be divided up.

The one (either you or your partner) with the **most correct answers** has **the better performance**. **After answering the questions, you and your partner will find out who the better and who the worse performer was.**

Depending on your performance and your partner's performance, you and your partner will be assigned to the roles of the superior and the subordinate. The role of the superior will be assigned to the one who has the better performance in answering the questions, whereas the role of the subordinate will be assigned to the one with the worse performance.

On the next screen, you will see an example screen with an example question.



* For participants in the NOINFO treatments, the text written in pink was replaced by "After answering the questions, you and your partner will not find out who the better and who the worse performer was."

* For participants in the NOINFO-ROLE treatment, the text written in green was replaced by "Independent of your performance and your partner's performance, you and your partner will be assigned to the roles of the superior and the subordinate."

Example Screen:

Remaining Time: 30 seconds
Which color is contained in the flag of all Islamic countries? ☐ Red ☐ Blue ☐ Green ☐ Yellow ☐ Orange OK

As soon as all participants have clicked on “Next”, the questions can start to be answered.

Next

In the following, the participants worked on the general knowledge quiz (adopted from Karagözoğlu and Riedl, 2015).

Based on your performance and your partner’s performance,
the amount of the salary budget to be divided up amounts to

2210 ECU

Next

In the following, please indicate your estimation of your own and of your partner's performance in the general knowledge quiz. Depending on the accuracy of your estimation, you can earn an additional payment, which will not be incorporated into the negotiation.

- If your estimation is exactly equal to the actual number of correct answers, you will receive 52 ECU.
- If your estimation differs by -1 or +1 from the actual number of correct answers, you will receive 26 ECU.
- If your estimation differs by -2 or +2 from the actual number of correct answers, you will receive 13 ECU.
- Otherwise, you will receive 0 ECU.

You have to estimate your own performance as well as your partner's performance.

Nobody except you will find out about your estimation.

Next

Please indicate your estimation of your own performance as well as of your partner's performance.

I answered questions correctly.

My partner answered questions correctly.

Next

Participants in the INFO treatments were provided with the following two screens. In addition, participants in the INFO-ROLE treatment were provided with the text written in green.

In the following, you will receive information about your actual performance in the general knowledge quiz compared to your partner's performance, and about the assignment of the roles of the superior and the subordinate.

If you have **more correct answers** in the general knowledge quiz than your partner, you are the **better** performer and your partner is the worse performer. In this case, the role of the **superior** will be assigned to you and the role of the subordinate will be assigned to your partner.

If you have **fewer correct answers** in the general knowledge quiz than your partner, you are the **worse** performer and your partner is the better performer. In this case, the role of the **subordinate** will be assigned to you and the role of the superior will be assigned to your partner.

If you and your partner have **the same number of correct answers** in the general knowledge quiz, you and your partner are **equal** performers. In this case, the roles of the superior and the subordinate will be **randomly** assigned to you and your partner.

Next

Here you will receive information about your actual performance in the general knowledge quiz compared to your partner's performance, and about the assignment of the roles of the superior and the subordinate.

As you have had **more correct answers** in the general knowledge quiz than your partner, you are the **better** performer and your partner is the worse performer.

Therefore, the role of the **superior** has been assigned to you and the role of the subordinate has been assigned to your partner.

Next

* Participants with the better performance were provided with the screen above.

In the case of the worse performer, the text was replaced by

“As you have had **fewer correct answers** in the general knowledge quiz than your partner, you are the **worse** performer and your partner is the better performer.

Therefore, the role of the **subordinate** has been assigned to you and the role of the superior has been assigned to your partner.”

In the case of equal performers, the text was replaced by

“As you and your partner have had **the same number of correct answers** in the general knowledge quiz, you and your partner are **equal** performers.”

In the case that an equal performer was assigned to the role of the superior, the following text was provided in the INFO-ROLE treatment:

“Therefore, the roles of the superior and the subordinate have been **randomly** assigned to you and your partner. The role of the **superior** has been randomly assigned to you and the role of the subordinate has been randomly assigned to your partner.”

In the case that an equal performer was assigned to the role of the subordinate, the following text was provided in the INFO-ROLE treatment:

“Therefore, the roles of the superior and the subordinate have been **randomly** assigned to you and your partner. The role of the **subordinate** has been randomly assigned to you and the role of the superior has been randomly assigned to your partner.”

Participants in the NOINFO-ROLE treatment were provided with the following screen.

Here you will receive information about the assignment of the roles of the superior and the subordinate. Please consider that this assignment is **independent of your performance and your partner's performance** in the general knowledge quiz.

The role of the **superior** has been assigned to you and the role of the subordinate has been assigned to your partner.

Next

* Participants who are assigned to the role of the superior were provided with the screen above.

In the case of participants who are assigned to the role of the subordinate, the text was replaced by

“Here you will receive information about the assignment of the roles of the superior and the subordinate. Please consider that this assignment is **independent of your performance and your partner's performance** in the general knowledge quiz.

The role of the **subordinate** has been assigned to you and the role of the superior has been assigned to your partner.”

Participants in the NOROLE treatments were provided with the following screen.

Please answer the following question:

According to your opinion, what would be a “fair” distribution of the salary budget from the vantage point of a noninvolved neutral arbitrator?

Please use exact amounts (no intervals) in ECU! The amounts have to sum up to the salary budget of 2210 ECU.

I should receive:

My partner should receive:

Participants in the ROLE treatments were provided with the following screen.

Please answer the following question:

According to your opinion, what would be a “fair” distribution of the salary budget from the vantage point of a noninvolved neutral arbitrator?

Please use exact amounts (no intervals) in ECU! The amounts have to sum up to the salary budget of 2210 ECU.

As the superior, I should receive: ECU

As the subordinate, my partner should receive: ECU

* Participants who are assigned to the role of the superior were provided with the screen above.

In the case of participants who are assigned to the role of the subordinate, the text was replaced by “As the subordinate, I should receive”, and “As the superior, my partner should receive”.

Participants in the NOROLE treatments were provided with the following screen.

Part 2: Negotiation on the Allocation of the Salary Budget

In the following, you will conduct a negotiation with your partner on the allocation of the salary budget between you and your partner.

Your goal is to maximize your individual utility.

Both you and your partner have the opportunity to make offers concerning the allocation of the salary budget. An offer consists of an integer amount in ECU for you and an integer amount in ECU for your partner. The sum of both amounts may neither undercut nor exceed the total salary budget. If you make an invalid offer, you will receive an error message. A sent offer is binding and cannot be revoked in this round. *At the beginning of the negotiation, your partner will make you the first offer. You can then respond to this offer.*

Overall, you will have 10 minutes to reach an agreement with your partner. The negotiation will end as soon as you and your partner reach an agreement concerning the allocation of the salary budget. You will have reached an agreement if both of you make the same offer in direct succession. If you do not reach an agreement within the 10 minutes, the negotiation has failed and the salary budget to be divided up will be forfeited.

Next

- * In the case that the participant made the first offer, the text written in orange was as follows:
 “At the beginning of the negotiation, you will make your partner the first offer. Your partner can then respond to this offer.”

Participants in the ROLE treatments were provided with the following screen.

Part 2: Negotiation on the Allocation of the Salary Budget

In the following, you will conduct a negotiation with your **subordinate** on the allocation of the salary budget between you and your **subordinate**.

Your goal is to maximize your individual utility.

Both you and your **subordinate** have the opportunity to make offers concerning the allocation of the salary budget. An offer consists of an integer amount in ECU for you and an integer amount in ECU for your **subordinate**. The sum of both amounts may neither undercut nor exceed the total salary budget. If you make an invalid offer, you will receive an error message. A sent offer is binding and cannot be revoked in this round. *At the beginning of the negotiation, your subordinate will make you the first offer. You can then respond to this offer.*

Overall, you will have 10 minutes to reach an agreement with your **subordinate**. The negotiation will end as soon as you and your **subordinate** reach an agreement concerning the allocation of the salary budget. You will have reached an agreement if both of you make the same offer in direct succession. If you do not reach an agreement within the 10 minutes, **you will determine the salary budget allocation without involving your subordinate.**

Next

- * For participants in the role of the subordinate, “subordinate” was replaced by “superior”, and “you will determine the salary budget allocation without involving your subordinate” was replaced by “your superior will determine the salary budget allocation without involving you”.
- * In the case that the superior made the first offer, the text written in orange was as follows:
 “At the beginning of the negotiation, you will make your subordinate the first offer. Your subordinate can then respond to this offer.”

	Remaining Time: 9 minutes 45 seconds
Please wait for your subordinate's offer.	

* For participants in the role of the subordinate, "subordinate's" was replaced by "superior's". For participants in the NOROLE treatments, "subordinate's" was replaced by "partner's".

	Remaining Time: 8 minutes 54 seconds				
You are negotiating on the allocation of the salary budget in the amount of 2210 ECU. Here you can see your subordinate's offer: Your subordinate's offer: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border: 1px solid black; padding: 5px; text-align: center;"> Your subordinate's salary claim (in ECU): </td> <td style="width: 50%; border: 1px solid black; padding: 5px; text-align: center;"> This salary claim will leave for you (in ECU): </td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">1210</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1000</td> </tr> </table>		Your subordinate's salary claim (in ECU):	This salary claim will leave for you (in ECU):	1210	1000
Your subordinate's salary claim (in ECU):	This salary claim will leave for you (in ECU):				
1210	1000				
Next					

* For participants in the role of the subordinate, "subordinate's" was replaced by "superior's". For participants in the NOROLE treatments, "subordinate's" was replaced by "partner's".

Remaining Time:	8 minutes 40 seconds				
You are negotiating on the allocation of the salary budget in the amount of 2210 ECU. Here you can make an offer to your subordinate concerning the allocation of the salary budget by entering your offered allocation of the salary budget into the boxes below. Your offer: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: 1px solid black; padding: 10px; text-align: center;"> My salary claim (in ECU): </td> <td style="width: 50%; border: 1px solid black; padding: 10px; text-align: center;"> This salary claim will leave for my subordinate (in ECU): </td> </tr> <tr> <td style="border: 1px solid black; height: 20px; background-color: #cccccc;"></td> <td style="border: 1px solid black; height: 20px; background-color: #cccccc;"></td> </tr> </table> Please consider that the sum of both figures has to correspond to the entire salary budget in the amount of 2210 ECU. Send offer		My salary claim (in ECU):	This salary claim will leave for my subordinate (in ECU):		
My salary claim (in ECU):	This salary claim will leave for my subordinate (in ECU):				

* For participants in the role of the subordinate, “subordinate” was replaced by “superior”. For participants in the NOROLE treatments, “subordinate” was replaced by “partner”.

In the case of an agreement, participants were provided with the following screen.

You have reached the following agreement with your subordinate concerning the allocation of the salary budget in the amount of 2210 ECU:	
You will receive (in ECU):	Your subordinate will receive (in ECU):
1200	1010
You will receive your overall payment (payment based on the precision of your performance estimation + payment based on the negotiation result + basic payment) at the end of the experiment.	
Next	

* For participants in the role of the subordinate, “subordinate’s” was replaced by “superior’s”. For participants in the NOROLE treatments, “subordinate’s” was replaced by “partner’s”.

In the case of no agreement, participants in the NOROLE treatments were provided with the following screen.

You have not reached an agreement with your partner concerning the allocation of the salary budget in the amount of 2210. Therefore, both your and your partner's payment, based on the negotiation result, amounts to 0 ECU.

You will receive your overall payment (payment based on the precision of your performance estimation + payment based on the negotiation result + basic payment) at the end of the experiment.

Next

In the case of no agreement, participants in the role of the subordinate in the ROLE treatments were provided with the following screen.

You have not reached an agreement with your superior. Therefore, your superior will now determine the allocation of the salary budget in the amount of 2210 ECU without involving you.

Next

In the case of no agreement, participants in the role of the superior in the ROLE treatments were provided with the following screen.

You have not reached an agreement with your subordinate. Therefore, please determine the allocation of the salary budget in the amount of 2210 ECU:

My salary claim (in ECU):	This salary claim will leave for my subordinate (in ECU):

Please consider that the sum of both figures has to correspond to the entire salary budget in the amount of 2210 ECU.

In the case of no agreement, participants in the ROLE treatments were provided with the following screen.

You have determined the following allocation of the salary budget in the amount of 2210 ECU:

You will receive (in ECU):	Your subordinate will receive (in ECU):
2000	210

You will receive your overall payment (payment based on the precision of your performance estimation + payment based on the negotiation result + basic payment) at the end of the experiment.

* For participants in the role of the subordinate, “You have” was replaced by “Your superior has”, and “subordinate” was replaced by “superior”.

Desk number:

Next

Participants in the INFO treatments were provided with the following manipulation check for the performance information.

Please indicate whether you were the better or the worse performer in your work team.

- I was the worse performer.
- I was the better performer.
- My partner and me were equal performers.

Next

Participants in the ROLE treatments were provided with the following manipulation check for hierarchical roles.

Please indicate the position which you had in your work team.

- ☐ I was the subordinate.
- ☐ I was the superior.

Next

Feelings of entitlement due to one's performance and / or one's hierarchical position were measured by the following items which were based on De Cremer (2003) and De Cremer and Van Dijk (2005).

Please indicate how strongly you agree with the following statements. There is no right or wrong answer. Therefore, simply indicate what reflects your attitude best.

The hierarchical role that I had in my team justifies my negotiation outcome.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
My performance based on answering the questions in the first round justifies my negotiation outcome.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I would consider it legitimate if I received more than an equal share of the salary budget.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I would consider it legitimate if I received more than an equal share of the salary budget because of my hierarchical role.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I would consider it legitimate if I received more than an equal share of the salary budget because of my performance in the general knowledge quiz.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I feel entitled to receive more than an equal share of the salary budget.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I feel entitled to receive more than an equal share of the salary budget because of my hierarchical role.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I feel entitled to receive more than an equal share of the salary budget because of my performance in the general knowledge quiz.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval

Next

Participants in the NOINFO NOROLE treatment were not provided with the following items which measured perceptions of procedural fairness.

Please indicate how strongly you agree with the following statements, which refer to the process and the criteria of the evaluation of your performance as well as to the promotion process and the promotion criteria for the assignment of your hierarchical role in the first part of the experiment.

“Process” denotes the system by which the performance evaluation and the promotion were implemented.

“Criteria” denote the features by which the performance was evaluated and the promotion decision was made.

There is no right or wrong answer. Therefore, simply indicate what reflects your attitude best.

I considered the process which led to the performance evaluation and to the promotion decision to be fair.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I considered the criteria which were defined for the performance evaluation and for the promotion decision to be fair.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I would have behaved in the same way if I had known the process of the performance evaluation and the promotion process better in advance.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I would have behaved in the same way if I had known the criteria of the performance evaluation and the promotion criteria better in advance.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval

Next

Perceptions of distributive fairness were measured by the following items which were based on Colquitt (2001) and Scott et al. (2007).

Please indicate how strongly you agree with the following statements, which refer to your negotiation outcome. There is no right or wrong answer. Therefore, simply indicate what reflects your attitude best.

My negotiation outcome reflects the effort I have put into my work in answering the questions in the first part of the experiment.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
My negotiation outcome is appropriate for the work I have completed in answering the questions in the first part of the experiment.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
My negotiation outcome reflects what I have contributed to the salary budget.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
My negotiation outcome is justified, given my performance based on answering the questions in the first part of the experiment.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval

Next

Equity sensitivity was measured by the following items which were adopted from Abele and Diehl (2008).

Please indicate how strongly you agree with the following statements, which refer to your negotiation outcome. There is no right or wrong answer. Therefore, simply indicate what reflects your attitude best.

Rewards should be distributed to persons in direct proportion to their inputs (i.e. their relative contributions).	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
The trouble with giving people equal rewards for work is that they very rarely work equally hard.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
If people work together on a task it is very important that the reward is distributed in proportion to the effort each puts in.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
When a task is completed by a team there is nothing wrong with distributing the reward equally regardless of unequal input.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
The relative input of each team-member does not necessarily provide a legitimate basis for claiming differential rewards.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval

Next

Social value orientation was measured by the method of Murphy et al. (2011; see the following three screens).

Please make the following hypothetical decisions. Each participant decides independently of the other one. You have to decide between different distributions for you and another hypothetical person. Your decision has no influence on either your negotiation results or on your payment.

1	You receive:	85	85	85	85	85	85	85	85	85
		○	○	○	○	○	○	○	○	○
	The other person receives:	85	76	68	59	50	41	33	24	15

2	You receive:	85	87	89	91	93	94	96	98	100
		○	○	○	○	○	○	○	○	○
	The other person receives:	15	19	24	28	33	37	41	46	50

Next

Please make the following hypothetical decisions. Each participant decides independently of the other one. You have to decide between different distributions for you and another hypothetical person. Your decision has no influence on either your negotiation results or on your payment.

3	You receive:	50	54	59	63	68	72	76	81	85
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	100	98	96	94	93	91	89	87	85

4	You receive:	50	54	59	63	68	72	76	81	85
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	100	89	79	68	58	47	36	26	15

Next

Please make the following hypothetical decisions. Each participant decides independently of the other one. You have to decide between different distributions for you and another hypothetical person. Your decision has no influence on either your negotiation results or on your payment.

5	You receive:	100	94	88	81	75	69	63	56	50
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	50	56	63	69	75	81	88	94	100

6	You receive:	100	98	96	94	93	91	89	87	85
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	50	54	59	63	68	72	76	81	85

Next

Participants' general attitudes were measured by the following items.

Please indicate how strongly you agree with the following statements. There is no right or wrong answer. Therefore, simply indicate what reflects your attitude best.

I enjoyed the experiment.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
The explanations in this experiment were easy to understand.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I have the feeling that the experimenters influenced my responses.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I think that my negotiation partner is a fair-minded person.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I think the negotiation result is fair.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I already have experience with negotiations.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval

Next

Perceptions of the general knowledge quiz were measured by the following items which were adopted from Karagözoğlu and Riedl (2015).

The following questions refer to the determination of the performance in the general knowledge quiz. Please indicate how strongly you agree with the following statements. There is no right or wrong answer. Therefore, simply indicate what reflects your attitude best.

In a knowledge quiz like this, pure luck decides who is able to answer more questions correctly.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
The one with the better general knowledge is able to answer more questions correctly.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
In my view, the knowledge questions have been difficult.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval

Next

The assessment of one's own knowledge was measured by the following question which was adopted from Karagözoğlu and Riedl (2015).

We would now like to know how you assess your own general knowledge. Not all people have an equally good general knowledge. We ask you, therefore, to compare your own knowledge with that of the other participants in this experiment. By definition, of course, there is somebody who has the least general knowledge and somebody who has the best general knowledge. We ask you to indicate on the scale below where you position yourself with respect to your general knowledge, within the group of the participants of this experiment. Of course, since you do not know all participants of this experiment this is a difficult task. Nevertheless, we ask you to make your self-assessment as accurate as possible. Please, position yourself by crossing the percentage interval - on the scale below - where you think your own position relative to the other participants in this experiment is with respect to general knowledge. If you think, for example, that you are with your general knowledge at the top ten percent, then cross the percentage interval 91-100. If you think, for example, that you are with your general knowledge at the lowest ten percent, then cross the percentage interval 0-10.

Your estimation of your position within the group of the participants of this experiment with respect to your general knowledge:

- ☐ 0 – 10
- ☐ 11 – 20
- ☐ 21 – 30
- ☐ 31 – 40
- ☐ 41 – 50
- ☐ 51 – 60
- ☐ 61 – 70
- ☐ 71 – 80
- ☐ 81 – 90
- ☐ 91 – 100

Next

Demography was measured as follows.

Demographic Questions

Please select your gender.

☐ male

☐ female

How old are you?

If you are studying or have studied,
please indicate your major subject.

Please enter your final high school grade.
(Please use a dot instead of a comma.)

How many months of real-life working experience in
private or public companies do you have?
(including internship time, but without school or college time)?

Next

If participants reached an agreement in considerably less than the 20 minutes scheduled or considerably faster than other participants did, they had to do math calculations (see the following three screens).

In the following, you will solve some arithmetic problems as part of a cognitive test. You will be informed about the result of your cognitive test but it will not influence your payment. To achieve a good result, it is necessary that you concentrate fully.

Next

$$7 \times 57 =$$

OK

You have no time left. You have solved 5 out of 6 arithmetic problems correctly. This is a very good performance.

Next

In the case of an agreement, participants were provided with the following screen.

You and your **subordinate** have reached the following agreement concerning the allocation of the salary budget in the amount of 2210 ECU:

Your payment based on the negotiation result:	1200 ECU
Your subordinate 's payment based on the negotiation result:	1010 ECU

As you answered 12 questions correctly and you estimated your own number of correct answers as 12, your estimation of your own performance and the associated payment are as follows:

exactly correct	52 ECU
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As your **subordinate** answered 5 questions correctly and you estimated your **subordinate**'s number of correct answers as 7, your estimation of your **subordinate**'s performance and the associated payment are as follows:

differs by +2 or -2 from the actual number	13 ECU
--	--------

Therefore, your overall payment amounts to:

Basic payment:	520 ECU
+ Payment based on the estimation of your own performance:	52 ECU
+ Payment based on the estimation of your subordinate 's performance:	13 ECU
+ Payment based on the negotiation result:	1200 ECU
= Payment in ECU:	1785 ECU
: Exchange rate (130 ECU = 1 Euro):	130 ECU/Euro
= Overall payment in Euro	13.80 Euro

You will receive your overall payment at the exit. Please wait until your desk number is called out.

Next

* For participants in the role of the subordinate, "subordinate" was replaced by "superior". For participants in the NOROLE treatments, "subordinate" was replaced by "partner".

In the case of no agreement, participants in the NOROLE treatments were provided with the following screen.

You and your partner have not reached an agreement concerning the allocation of the salary budget in the amount of 2210 ECU:

Your payment based on the negotiation result:	0 ECU
Your partner's payment based on the negotiation result:	0 ECU

As you answered 12 questions correctly and you estimated your own number of correct answers as 12, your estimation of your own performance and the associated payment are as follows:

exactly correct	52 ECU
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As your partner answered 5 questions correctly and you estimated your partner's number of correct answers as 7, your estimation of your partner's performance and the associated payment are as follows:

differs by +2 or -2 from the actual number	13 ECU
--	--------

Therefore, your overall payment amounts to:

Basic payment:	520 ECU
+ Payment based on the estimation of your own performance:	52 ECU
+ Payment based on the estimation of your partner's performance:	13 ECU
+ Payment based on the negotiation result:	0 ECU
= Payment in ECU:	585 ECU
: Exchange rate (130 ECU = 1 Euro):	130 ECU/Euro
= Overall payment in Euro	4.50 Euro

You will receive your overall payment at the exit. Please wait until your desk number is called out.

Next

In the case of no agreement, participants in the ROLE treatments were provided with the following screen.

You and your **subordinate** have not reached an agreement concerning the allocation of the salary budget in the amount of 2210 ECU. **You have** determined the following allocation of the salary budget:

Your payment based on the negotiation result:	2000 ECU
Your subordinate 's payment based on the negotiation result:	210 ECU

As you answered 12 questions correctly and you estimated your own number of correct answers as 12, your estimation of your own performance and the associated payment are as follows:

exactly correct	52 ECU
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As your **subordinate** answered 5 questions correctly and you estimated your **subordinate**'s number of correct answers as 7, your estimation of your **subordinate**'s performance and the associated payment are as follows:

differs by +2 or -2 from the actual number	13 ECU
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Therefore, your overall payment amounts to:

Basic payment:	520 ECU
+ Payment based on the estimation of your own performance:	52 ECU
+ Payment based on the estimation of your subordinate 's performance:	13 ECU
+ Payment based on the negotiation result:	2000 ECU
= Payment in ECU:	2585 ECU
: Exchange rate (130 ECU = 1 Euro):	130 ECU/Euro
= Overall payment in Euro	19.90 Euro

You will receive your overall payment at the exit. Please wait until your desk number is called out.

Next

* For participants in the role of the subordinate, "subordinate" was replaced by "superior", and "You have" was replaced by "Your superior has".

Thank you for participating in this experiment.

2.2 Research Paper 2 – On the Effectiveness of Corporate Guidelines: The Importance of Hierarchical Roles

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Abstract

Prior research has provided mixed results on the effectiveness of corporate guidelines, e.g. codes of conduct. Furthermore, the influence of unequal distributions of power in negotiations has not been conclusively explored. We contribute to closing these research gaps by arguing that the effectiveness of corporate guidelines might depend on hierarchical roles and the associated differences in psychological need satisfaction. Drawing on Self-Determination Theory, we argue that role adoption is influenced by (perceived) autonomy and relatedness of the negotiation partners. In a laboratory experiment, we show that the presence of corporate guidelines, i.e. a code of conduct and information on realizations compatible with the code from the company's perspective, only has a regulatory effect if transmitted via the more powerful employee (the superior). Due to this role effect, corporate guidelines presented to the superior translate into substantially more favorable negotiation outcomes for the less powerful employee (the subordinate) by mitigating the inequality of payoffs between superiors and subordinates.

Keywords: code of conduct, corporate guidelines, dyadic negotiation, hierarchical roles, Self-Determination Theory

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2.2.1 Introduction

Negotiations as an important form of social interaction in business life (Thompson, 1990) serve to solve conflicts between different parties. One specific type of intra-organizational negotiation is the negotiation between employees in hierarchically different positions, namely between a superior and a subordinate.

In an organizational context, hierarchical relationships are aimed at fostering coordination and cooperation to facilitate the achievement of organizational objectives (Halevy *et al.*, 2011; Magee and Galinsky, 2008). While corresponding hierarchical positions are associated with different expectations on privileges and responsibilities, they are also accompanied by different levels of power. That is, those on higher hierarchical levels (i.e. superiors) have more decision-making power, thereby affecting individual and group outcomes more than those on lower hierarchical levels (i.e. subordinates) (Rus *et al.*, 2012). Empirical results on the effect of power imbalances in negotiations are mixed. While some studies revealed that an unequal distribution of power leads to higher joint negotiation outcomes (e.g., Pinkley *et al.*, 1994; Sondak and Bazerman, 1991), others showed power imbalances to yield lower joint outcomes that favor the powerful individuals (e.g., Mannix and Neale, 1993; McAlister *et al.*, 1986; for a review, see Li *et al.*, 2007).

Intra-organizational negotiations are shaped by contextual factors. For instance, underlying values have a large impact on employees' decision-making (Coughlan, 2005). One common tool to make organizational key values explicit and to establish and communicate responsible business practices is a code of conduct (also referred to as code of ethics or code of business standards) (Coughlan, 2005; Erwin, 2011). Empirical results concerning the effectiveness of such codes are mixed. In a meta-analysis of 79 empirical studies, 41 studies found codes of conduct to be effective or marginally effective, while 26 found no significant impacts, 11 presented mixed results, and one study found codes to be counterproductive (Kaptein and Schwartz, 2008). According to Kaptein and Schwartz (2008), codes of conduct have to be viewed in relation to the company's external environment, the internal organizational context, as well as the management's and employees' characteristics.

To our knowledge, empirical research addressing the joint influence of power imbalances through the assignment of hierarchical roles and corporate guidelines on negotiation outcomes has not yet been conducted. Hence, our research attempts to contribute to existing research gaps in several aspects. First, we examine the influence associated with different hierarchical roles and analyze the question whether and how negotiation outcomes are influenced by the unequal distribution of power. Second, we study the effect of corporate guidelines including both a code

of conduct and explicit information on negotiation outcomes that are optimal from the company's perspective. Third, we combine the previously unrelated research areas on the effectiveness of corporate guidelines and on negotiations shaped by power imbalances and address the question of the extent to which the presence of corporate guidelines regulates the negotiation outcomes of individuals in different hierarchical positions. For this purpose, we stress the motivational aspects underlying the occupancy of power and the internalization of corporate guidelines by building on Self-Determination Theory (SDT; Ryan and Deci, 2000). SDT is a psychological theory which concentrates on social-contextual factors that influence the satisfaction of the basic psychological needs for competence, relatedness, and autonomy (Ryan and Deci, 2017). This approach is new to the extent that SDT has not yet been applied as a theoretical basis for explaining either the effectiveness of corporate guidelines or the realization of particular negotiation outcomes. As a consequence, we expand the application of SDT by introducing it to negotiation research.

To investigate our research questions, a laboratory experiment was conducted. We show that the presence of corporate guidelines, i.e. a code of conduct and information on desired negotiation outcomes from the company's perspective, only has a regulatory effect if transmitted via the more powerful employee (the superior) and translates into substantially more favorable negotiation outcomes for the less powerful employee (the subordinate) and for the organization. This is in line with theoretical predictions from SDT (Ryan and Deci, 2000), which points out that the satisfaction of the psychological needs for autonomy and relatedness fostered by the provision of both power and corporate guidelines leads employees to internalize organizational values (Deci and Ryan, 2000). As these results highlight that corporate guidelines are transmitted via hierarchical relationships, organizations should ensure the saliency of corporate guidelines for employees in more powerful positions in order to attenuate the influence of power imbalances on intra-organizational negotiations.

2.2.2 Theoretical Background and Hypothesis Development

2.2.2.1 Effectiveness of Corporate Guidelines

Although Simons (1995) argues that individuals are intrinsically motivated to commit themselves to organizational values and to work toward achieving organizational goals, unethical behavior does take place and undermines the performance of organizations (Cleck and Leonard, 1998). Therefore, most companies implement so-called codes of conduct. In the literature, there are multiple different definitions of such codes and descriptions of their scope (Stevens, 2008; Wood and Rimmer, 2003). Generally, a code of conduct is a visible statement

that highlights an organization's commitment to organizational values, obligations, and duties (Cassell *et al.*, 1997; Somers, 2001) as well as expectations about how these responsibilities are dealt with (McCabe *et al.*, 1996).

Empirical results concerning the effectiveness of codes of conduct are mixed. Some studies showed codes of conduct to increase ethical behavior (Hegarty and Sims, 1979), to foster cooperation in public goods provision tasks (Lauer *et al.*, 2008), to decrease self-reported unethical behavior in organizations (McCabe *et al.*, 1996), and to elicit perceptions of oneself and the work environment (subordinates, co-workers, superiors, etc.) as being more ethical (Adams *et al.*, 2001; Somers, 2001). Lauer *et al.* (2008) conclude that this positive impact originates from the code's explicit communication of expected behavior, which might guide employee behavior (Hegarty and Sims, 1979). Opposed to these results, other research found no evidence for the effect of codes of conduct on increases in ethical behavior (Cleek and Leonard, 1998; Laczniaik and Inderrieden, 1987; Marnburg, 2000), and on the appearance of fraudulent decisions (Brief *et al.*, 1996). Marnburg (2000) argues that a code of conduct is nothing more than a means to communicate rules that are either common-sense rules or duplicates of norms already incorporated in corporate rule-systems.

Another strand of the literature emphasizes that decisions in an organizational context are not solely influenced by the presence of codes but also by the interplay between their existence and other contextual factors, such as supervisor advice (Petersen and Krings, 2009). In line with this evidence, Balakrishnan and Letmathe (2017) revealed that the effectiveness of codes of conduct depends on their alignment with the company's incentive system. Consequently, we argue that codes of conduct should not be considered in isolation but must particularly be linked to explicitly communicated organizational goals. Hence, we focus on corporate guidelines that consist of the joint presence of a code of conduct and explicit organizational goals in terms of negotiation realizations compatible with this code.

According to Kimmerle *et al.* (2011), guidelines act as prescriptive social norms (see also Kallgren *et al.*, 2000; Reno *et al.*, 1993) and, therefore, specify appropriate behavior from the social group's perspective. Furthermore, if guidelines contain concrete goals, such as the explicit emphasis on desired negotiation realizations, they might function as indications for acceptable performance (Cress and Kimmerle, 2007; Huber and Neale, 1986; Kimmerle *et al.*, 2011) and provide a principle for acting in the organization's sense. In line with this reasoning, Cress and Kimmerle (2007) found that salient high-level guidelines had an impact on contributions in a social dilemma even if the non-adherence of the guidelines could neither be observed nor be punished. They argue that salient information in the form of guidelines could

enhance the accessibility of corresponding cognitions when managers strive to improve their decisions.

2.2.2.2 Corporate Guidelines and External Motivation

SDT (Ryan and Deci, 2000) posits that extrinsically motivated behavior varies in the degree to which it is controlled versus self-determined (Deci and Ryan, 2000; Gagné and Deci, 2005). Behavior is controlled or externally regulated if it is aimed at satisfying an external demand or at avoiding punishment (Deci and Ryan, 2000; Ryan and Deci, 2000). In contrast, behavior is self-determined if external regulations are transformed into internal ones (Ryan, 1993). This internalization process can take three different forms ranging from introjection via identification to integration (Deci and Ryan, 2000; Gagné and Deci, 2005). While introjection corresponds to externally controlled regulations that are not fully accepted as one's own, identification leads to the acceptance and the valuing of a regulation as personally important (Ryan and Deci, 2000). Integration, as the most complete form of internalization, occurs if identified regulations are assimilated with other aspects and values of the self and leads to self-determined motivation for performing associated activities (Deci and Ryan, 2000; Gagné, 2009; Ryan and Deci, 2000). The form of internalization depends on the degree to which the three innate psychological needs for autonomy, relatedness, and competence are satisfied (Deci and Ryan, 2000). Autonomy refers to the feeling that one's behavior is volitional (Sheldon *et al.*, 2003) and driven by one's sense of self (Deci and Ryan, 2000). The need for relatedness corresponds to the need to feel belongingness and attachment to others (Deci and Ryan, 2000; Ryan and Deci, 2000). Competence constitutes the need to feel effective in one's behavior (Vlachopoulos *et al.*, 2011). While autonomy and competence can be interpreted as self-oriented needs, relatedness represents a socially-based need (Sheldon and Bettencourt, 2002).

According to SDT, people naturally tend to internalize the values and norms of their social groups if their innate psychological needs are satisfied (Chirkov *et al.*, 2005; Deci and Ryan, 2000). The degree of internalization depends on the social context with autonomy-supportive contexts leading to more organizational commitment (Deci and Ryan, 2000; Gagné and Deci, 2005; Sheldon *et al.*, 2003) by encouraging people to freely choose goals and to behave in a certain manner (Deci *et al.*, 1994; Osbaldiston and Sheldon, 2003; Ryan and Deci, 2011; Sheldon *et al.*, 2003).

In an organizational context, especially the interplay of the needs for autonomy and for relatedness determines how individuals internalize organizational regulations (Ryan and Deci, 2011). Autonomy is supported if organizations communicate corporate guidelines but leave

their employees free to decide to comply with and to commit to these values (Balakrishnan *et al.*, 2017) or if they provide a meaningful rationale for requested activities (Deci *et al.*, 1994) or restricted choices (Osbaldeston and Sheldon, 2003). Autonomy can be supported in terms of job contexts (e.g. choice) and of interpersonal ambience (e.g. organizational climate) (Gagné and Deci, 2005).

Furthermore, corporate guidelines might promote a feeling of relatedness. As individuals have a natural need to belong (Baumeister and Leary, 1995), they strive for behaviors that are valued by people to whom they feel or want to be connected with (Ryan and Deci, 2000, 2011). Corporate guidelines provide a basis for such valued behaviors and lead employees to believe that other organizational members will also stick to these norms, thus building trust (Balakrishnan *et al.*, 2017).

Taken together, the provision of corporate guidelines can lead employees to feel autonomous in their behavior and thus to volitionally enact moral obligations as well as to feel related to their organization and its members (Deci *et al.*, 2001) even if they are extrinsically stimulated (Balkin *et al.*, 2015). Consequently, the provision of corporate guidelines might influence individuals' negotiation behavior and outcomes.

2.2.2.3 Interaction between Hierarchical Roles and the Internalization of Corporate Guidelines

The internalization of corporate guidelines and their effect on negotiation outcomes might depend on one's position in the organizational hierarchy and the associated power, as these factors influence the satisfaction of the needs for autonomy and relatedness.

A vast amount of research on power imbalances in negotiations has analyzed different forms of power as well as interactions of power with various other contextual cues (e.g., Mannix and Neale, 1993; Olekalns, 1991; Olekalns and Frey, 1994; Pinkley *et al.*, 1994; Tripp, 1993; Wolfe and McGinn, 2005). According to that, power imbalances can originate from the value and the quality of an alternative in the case of a negotiation impasse (e.g., Pinkley *et al.*, 1994), the number of possible negotiation partners (e.g., Olekalns, 1991), the number of controlled resources (e.g., Blader and Chen, 2012, Study 5), or authority (e.g., Tripp, 1993).

Within an organizational context, superiors have more control over resources and are less dependent on the resources of others (Lammers and Galinsky, 2009), and might have ultimate decision-making power (DeRue *et al.*, 2009). Hence, they are (more) in charge of creating and enforcing initiatives to serve the organization which might elicit a feeling of autonomy and the internalization of organizational goals (Overbeck and Park, 2006). Moreover, power enables

the engagement in actions facilitating the achievement of goals and, consequently, the maintenance of power (Galinsky *et al.*, 2003). Therefore, many individuals perceive powerful positions as desirable, which leads superiors to want to meet expectations and to retain their position and hence to commit themselves more to organizational goals (Halevy *et al.*, 2011; Joshi and Fast, 2013).

Besides the power's impact on the feeling of autonomy, power is also associated with responsibility-increasing interpersonal sensitivity (Joshi and Fast, 2013). As superiors are responsible for their subordinates and for reaching collective goals, they are forced to cut back on their self-interest and to help others (Chen *et al.*, 2001; Lammers *et al.*, 2016). This feeling of responsibility might increase feelings of relatedness to the organization and its members and hence the commitment to organizational norms and goals (Ashforth and Mael, 1989; Meyer *et al.*, 2006). Thus, if superiors feel a sense of belonging to the organization and its members, they should be more motivated to take on personal costs to preserve the interests of the organization and its members (Hoogervorst *et al.*, 2012). This is in line with former research showing that high-authority negotiators do not take advantage of their position when given the goal to appear fair (Tripp, 1993).

However, the effectiveness of corporate guidelines might be undermined if the organization's reward system contradicts the values incorporated in the corporate guidelines (Adams *et al.*, 2001), that is, acting according to the corporate guidelines is opposed to individual economic incentives. This applies to superiors because they have the ultimate decision-making power over resource allocation and, therefore, could exploit their employees by disregarding corporate guidelines and exclusively following their own economic interests. In such situations, voluntarily passing on economic benefits emerges from the internalization processes of corporate guidelines and not from external regulations of economic incentives (Balakrishnan *et al.*, 2017). Thus, when individuals can freely choose to follow corporate guidelines, their feeling of autonomy is supported. In addition, complying with corporate guidelines despite misaligned economic incentives elicits positive feelings and avoids negative feelings caused by norm-deviating behavior and, therefore, increases the feeling of relatedness (Balakrishnan *et al.*, 2017). Hence, superiors are thought to follow corporate guidelines despite misaligned economic incentives in order to satisfy their needs for autonomy and relatedness. This is in line with previous research revealing that high-power superiors who believe that their goals are positively linked to those of their subordinates are more willing to use their power to support their subordinates (Tjosvold, 1985).

In contrast, subordinates having no or less ultimate decision-making power do not have the control over valued resources, which undermines their sense of autonomy (Lammers *et al.*, 2016; Munduate and Medina, 2017). Moreover, subordinates lack the possibility of gaining a feeling of relatedness because they cannot display other-regarding behavior by ceding resources to their superiors. Rather, subordinates' economic incentives are aligned with corporate guidelines if these emphasize a fair treatment of employees. Thus, they have to rely on their superiors to follow these guidelines. Consequently, subordinates are (often) even willing to accept exploitative agreements because these are even better than their alternatives (Halevy *et al.*, 2011; Hoffman *et al.*, 1994; Magee *et al.*, 2007). Therefore, the provision of corporate guidelines to subordinates might not influence outcomes of negotiations with superiors because subordinates lack the autonomy to impact the allocation of resources. This argumentation is supported by Overbeck and Park (2006), who showed that unlike powerholders in a workgroup, low-power individuals are insensitive to stated organizational values and goals.

Based on the aforementioned reasoning, we argue that the provision of power satisfies the need for autonomy, which facilitates the internalization of corporate guidelines. The corporate guidelines then serve as a meaningful rationale for appropriate behavior and increase the feeling of relatedness to the organization and its members without decreasing the feeling of autonomy. Therefore, compared to the situation in which no negotiation partner receives corporate guidelines that emphasize the fair treatment of subordinates, we hypothesize that, if superiors are provided with these guidelines, negotiation outcomes will not exclusively favor superiors but shift towards more favorable outcomes for subordinates:

- H1. If the superior receives the corporate guidelines (i.e. a code of conduct and information on realizations compatible with the code),*
- a) the subordinate's total payoff will increase.*
 - b) the difference between the superior's and the subordinate's total payoffs will decrease.*

Note that, based on our expectation of an interaction between hierarchical roles and the presence of corporate guidelines, only providing the subordinate with the corporate guidelines should not impact the negotiation outcomes.

Nevertheless, as we argued that corporate guidelines lead employees to recognize interpersonal similarities and hence to build trust, we predict that the positive effect of providing corporate guidelines will be stronger if the guidelines are presented to both superiors and subordinates in comparison to if they are only presented to superiors:

- H2. If both the superior and the subordinate receive the corporate guidelines (i.e. a code of conduct and information on realizations compatible with the code) compared to if only the superior receives the corporate guidelines,*
- a) the subordinate's total payoff will be higher.*
 - b) the difference between the superior's and the subordinate's total payoffs will be lower.*

Despite our argumentation that the provision of corporate guidelines to superiors might lead to a shift of negotiation outcomes towards the subordinates, we assume that no perfect equality between superiors' and subordinates' payoffs will arise. This is due to the fact that more powerful superiors might take into account that they have more responsibilities and, therefore, expect that they are entitled to more resources than their subordinates (De Cremer, 2003; De Cremer and Van Dijk, 2005; Samuelson and Allison, 1994). Accordingly, empirical evidence shows that subjects in the role of a superior allocate more than half of the resources to themselves (De Cremer, 2003; Samuelson and Allison, 1994; Van Dijk and De Cremer, 2006). Thus, we hypothesize that although negotiation outcomes will shift towards more favorable outcomes for subordinates, they will still favor the superior:

- H3. The difference between the superior's and the subordinate's total payoffs will be greater than zero even in the presence of the corporate guidelines (i.e. a code of conduct and information on realizations compatible with the code).*

Finally, as the corporate guidelines contain information on negotiation outcomes that are desirable from the company's perspective, and superiors might be interested in meeting expectations in order to maintain their position, we predict that absolute deviations of negotiation outcomes from the company optimum will decrease if the superior is provided with these guidelines. Moreover, this effect will be stronger if the guidelines are presented to both negotiation partners in comparison to if they are only presented to superiors:

- H4. If the superior receives the corporate guidelines (i.e. a code of conduct and information on realizations compatible with the code), absolute deviations of negotiation outcomes from the company optimum will decrease.*
- H5. If both the superior and the subordinate receive the corporate guidelines (i.e. a code of conduct and information on realizations compatible with the code), absolute deviations of negotiation outcomes from the company optimum will be lower compared to if only the superior receives the corporate guidelines.*

2.2.3 Method

2.2.3.1 Procedure and Participants

We employed a computer-based role-play experiment. Superior-subordinate-dyads negotiated on the subordinate's incentive scheme, which addressed the number of paid vacation days and the bonus pay (based on O'Connor *et al.*, 2005). For each issue, the superior-subordinate-dyads could reach an agreement on five different levels. As the issues were variable-sum, superiors and subordinates valued these issues differently, allowing for trade-offs between the issues to achieve higher individual outcomes. From the superior's economic perspective, the bonus pay was more valuable, whereas from the subordinate's economic point of view, the paid vacation days were more important. Participants had the possibility of making offers to each other via computer accompanied by prewritten messages.¹⁷ In half of the dyads, the superior had to make the first offer, whereas in the other half of the dyads it was the subordinate who made the first offer. A mutual agreement was reached if both negotiation partners successively made the same offer for both negotiation issues. To make the hierarchical roles more salient and realistic, we implemented a 'natural' power inequality. That is, if dyads did not reach a mutual agreement within 20 minutes, the superior unilaterally determined the number of paid vacation days and the bonus pay, giving her or him ultimate decision-making power.

To test our hypotheses, we manipulated the presentation of corporate guidelines consisting of a code of conduct and information on negotiation outcomes compatible with the code to the participants: In the baseline condition (NCG-NCG), neither the superior nor the subordinate received the corporate guidelines. In the remaining three conditions, the corporate guidelines were made available to the subordinate (NCG-CG), the superior (CG-NCG), and both the superior and the subordinate (CG-CG), respectively.

Upon arrival in the laboratory, participants were randomly seated in individual cubicles behind a computer. In an introductory Information Phase, subjects learned about the task and the company. In the CG conditions, experimental materials included a statement about the company's code of conduct, which emphasized values such as integrity, trust, and high performance and outlined the criteria on which the compensation was based.¹⁸ Next, the random assignment to the roles of the superior and the subordinate, the anonymous matching of dyads,

¹⁷ Most of the prewritten messages were taken from O'Connor *et al.* (2005; based on Hilty and Carnevale, 1993). The messages are included in the experimental instructions in Appendix A.2-7 (p. 200).

¹⁸ The code is based on the Code of Conduct at Chevron (2014) and is included in the experimental instructions in Appendix A.2-7 (pp. 192, 193).

the payment mechanism, and the negotiation task were explained. Subjects then were asked several control questions that they had to answer correctly in order to proceed.

The Negotiation Phase began with the random role assignment and the presentation of individual payoff schemes. Subjects in the role of the superior were informed that an agreement on the number of zero paid vacation days and a bonus pay of 0% of the company's profit would lead to their maximum individual outcome of 200 ECU. Subjects in the role of the subordinate learned that their maximum individual outcome of 200 ECU would be achieved when both partners agreed on 4 paid vacation days and a bonus pay of 12% of the company's profit. Individual payoffs were private knowledge and could not be disclosed to the negotiation partner. We ensured that the superiors and the subordinates understood their payoff schemes by providing them with all relevant information. In the CG conditions, subjects were further told that from the company's perspective, two paid vacation days and a bonus pay of 6% of the company's profit were compatible with the code of conduct. Subjects were instructed that their goal was to maximize their individual utility. Dyads then had 20 minutes to negotiate. The negotiation concluded when dyads reached a mutual agreement or when the superior unilaterally determined a realization for both issues after the 20 minutes had elapsed. After the negotiation, participants answered a post-negotiation questionnaire, which included, among others, constructs for organizational commitment (OC) and social value orientation (SVO; adopted from Murphy *et al.*, 2011). If dyads reached an agreement far before other dyads came to an agreement or the 20 minutes had elapsed, participants had to do math calculations framed as a cognition test to make sure that the other dyads were not disturbed. Finally, based on their individual negotiation outcome plus a show-up fee of 60 ECU, subjects were paid at an exchange rate of 20 ECU equaling 1 Euro.

The experiment was programmed in z-Tree (Fischbacher, 2007). Students at a large German University participated in our experiment in seven sessions and we collected data from 172 participants (86 superior-subordinate dyads). Out of these 172 participants, five subjects opened the envelope with the code of conduct although they were neither authorized nor asked to do so. Due to other issues (understanding the task structure, language problems, use of cell phone), five other subjects were excluded prior to the statistical analysis. Eliminating data of these subjects and their dyads led to 152 data points regarding individual negotiation outcomes and 76 data points for joint negotiation outcomes. In our four conditions – NCG-NCG, NCG-CG, CG-NCG, CG-CG – we analyzed data from 42, 30, 44, and 36 participants, respectively. The average participant was 23.57 years old, with 44.74% being female. The average subject earned 8.45 Euros for participating in the experiment (which lasted on average one hour).

2.2.3.2 Dependent Variables

Subordinate's Total Payoff. We summed the subordinate's payoffs resulting from the negotiated paid vacation days and the negotiated bonus pay.

Difference between the Superior's and the Subordinate's Total Payoffs. For both the superior and the subordinate, we computed the sum of the individuals' payoffs resulting from the negotiated paid vacation days and the negotiated bonus pay. On this basis, we calculated the difference between the superior's and the subordinate's payoffs.

Absolute Combined Deviation from the Company Optimum. For both negotiation issues, we computed the equidistant absolute differences between the company optimum (i.e., two paid vacation days and a bonus pay of 6% of the company's profit) and the negotiated levels, respectively. Afterwards, we summed both differences.

2.2.3.3 Independent Variables

The independent variables are the treatment dummy variables for the presentation of the corporate guidelines to the superior (*CG SUP*; absent = 0, present = 1) and the presentation of the corporate guidelines to the subordinate (*CG SUB*; absent = 0, present = 1). In addition, we tested for the interaction between the presentation of the corporate guidelines to the superior and to the subordinate (*CG SUP* $\times$ *CG SUB*).

2.2.4 Results

We employ OLS regression models and *t*-tests to test our hypotheses. Additionally, we report supplementary analyses serving to check for the robustness of and to explain our main results in greater depth.

2.2.4.1 Influence of Corporate Guidelines on the Subordinate's Total Payoff and the Difference between the Superior's and the Subordinate's Payoffs

As superiors were provided with the power to decide on the paid vacation days and the bonus pay in case of a negotiation impasse, they were able to lower their subordinate's negotiation outcomes and thus could increase the difference between their own and their subordinate's payoff. Given our argumentation that superiors experience a feeling of autonomy through their ultimate decision-making power and a feeling of relatedness through the internalization of corporate guidelines, we expected that providing superiors with the corporate guidelines would lead them to cede a part of their payoff in order to increase their subordinate's payoff and to decrease the difference between their own and their subordinate's payoff.

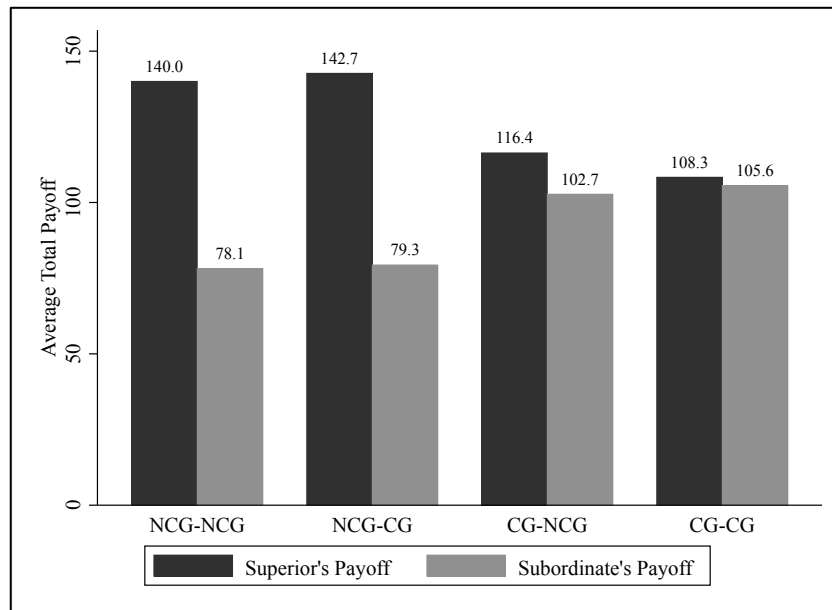


Figure 2.3: Superior's and Subordinate's Average Total Payoffs as a Function of Treatment
Notes. NCG-NCG = neither the superior nor the subordinate received the corporate guidelines; NCG-CG = only the subordinate received the corporate guidelines; CG-NCG = only the superior received the corporate guidelines; CG-CG = both the superior and the subordinate received the corporate guidelines.

Figure 2.3 (p. 161) and the statistics in Table 2.9 (p. 162) indicate a strong role effect. That is, if the superior receives the corporate guidelines, the subordinate's total payoff is higher and the difference between the superior's and the subordinate's total payoffs is lower than if the superior is not provided with the guidelines. Nevertheless, as the difference between the superior's and the subordinate's total payoffs remain positive in all treatments, superiors earn more than subordinates irrespective of the provision of corporate guidelines. However, we do not find substantial differences if the subordinate receives the corporate guidelines. This suggests that roles are an important factor for the effectiveness of corporate guidelines.

Table 2.9: Descriptive Statistics by Treatment

	NCG-NCG (<i>N</i> = 21)		NCG-CG (<i>N</i> = 15)		CG-NCG (<i>N</i> = 22)		CG-CG (<i>N</i> = 18)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Subordinate's Total payoff	78.10	36.14	79.33	34.74	102.73	25.29	105.56	14.23
Difference between the Superior's and the Subordinate's Total Payoffs	61.90	65.01	63.33	61.14	13.64	44.14	2.78	20.81
Absolute Combined Deviation from the Company Optimum	2.48	1.36	2.60	1.18	2.09	1.48	1.39	1.54

Notes. Means (*M*) and standard deviations (*SD*) are shown. NCG-NCG = treatment in which neither the superior nor the subordinate received the corporate guidelines; NCG-CG = treatment in which only the subordinate received the corporate guidelines; CG-NCG = treatment in which only the superior received the corporate guidelines; CG-CG = treatment in which both the superior and the subordinate received the corporate guidelines.

Regression analyses in Table 2.10 (p. 163) support H1a and H1b. If the superior receives the corporate guidelines, the subordinate's total payoff significantly increases ($b = 24.63$, $p = 0.007$; see Model 1) and the difference between the superior's and the subordinate's total payoffs significantly decreases ($b = -48.27$, $p = 0.003$; see Model 2). As expected, providing the subordinate with the corporate guidelines does not significantly impact outcomes.¹⁹

¹⁹ We further performed nonparametric comparisons between treatments by applying Mann-Whitney (MW) tests. With respect to the influence of providing either the superior or the subordinate with the corporate guidelines, these tests yield similar results. Comparing the treatment where no negotiation partner receives the corporate guidelines with the treatment where only the superior is provided with them, there is a significant difference in the subordinate's total payoff (NCG-NCG versus CG-NCG: $p = 0.0196$, MW test, two-tailed) and in the difference between the superior's and the subordinate's total payoffs (NCG-NCG versus CG-NCG: $p = 0.0103$, MW test, two-tailed). Furthermore, providing no negotiation partner with the corporate guidelines and providing only the subordinate with them do not have a significantly different effect on either the subordinate's total payoff (NCG-NCG versus NCG-CG: $p = 0.9611$, MW test, two-tailed) or the difference between the superior's and the subordinate's total payoffs (NCG-NCG versus NCG-CG: $p = 0.8410$, MW test, two-tailed).

Table 2.10: Results of Regression Analyses for the Subordinate's Total Payoff and the Difference between the Superior's and the Subordinate's Total Payoffs

Independent Variables	Dependent Variable					
	Model 1: <i>Subordinate's Total Payoff</i>			Model 2: <i>Difference between the Superior's and the Subordinate's Total Payoffs</i>		
	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI
<i>Intercept</i>	78.10 (6.29)	< 0.001	65.55, 90.64	61.90 (11.07)	< 0.001	39.85, 83.96
<i>CG SUP</i>	24.63 (8.80)	0.007	7.09, 42.17	-48.27 (15.47)	0.003	-79.11, -17.43
<i>CG SUB</i>	1.24 (9.75)	0.899	-18.20, 20.68	1.43 (17.14)	0.934	-32.74, 35.60
<i>CG SUP x CG SUB</i>	1.59 (13.38)	0.906	-25.09, 28.27	-12.29 (23.53)	0.603	-59.19, 34.62
<i>F</i> (3, 72)	4.93	0.004		7.25	< 0.001	
<i>R</i> ²	0.17			0.23		
Adjusted <i>R</i> ²	0.14			0.20		

Notes. *N* = 76. Unstandardized regression coefficients (*b*) are shown, with standard errors (*SE*) in parentheses. Two-tailed *p*-values are presented. CI = confidence interval. *CG SUP* = provision of corporate guidelines to the superior; *CG SUB* = provision of corporate guidelines to the subordinate; *CG SUP x CG SUB* = interaction between *CG SUP* and *CG SUB*.

However, H2a and H2b are not supported according to both models in Table 2.10 (p. 163). Hence, if both the superior and the subordinate are provided with the corporate guidelines, neither the subordinate's total payoff nor the difference between the superior's and the subordinate's total payoffs are significantly affected as compared to if only the superior is provided with the corporate guidelines ($b = 1.59$, $p = 0.906$, and $b = -12.29$, $p = 0.603$, respectively).²⁰ Taken together, we find a significant role effect: If superiors receive the corporate guidelines, they tend to cede a part of their outcomes in favor of their subordinates,

²⁰ MW tests yield similar results. Comparing the treatment where only the superior receives the corporate guidelines and the treatment where both negotiators are provided with them, there is neither a significant difference in the subordinate's total payoff (CG-NCG versus CG-CG: $p = 0.9335$, MW test, two-tailed) nor in the difference between the superior's and the subordinate's total payoffs (CG-NCG versus CG-CG: $p = 0.2522$, MW test, two-tailed).

while providing the subordinate with the guidelines does not significantly influence the negotiation outcomes.²¹

Despite the hypothesized positive impact of corporate guidelines on the concession behavior of superiors, we also expected that as the corporate guidelines were not perfectly aligned with the company's incentive system, superiors would still earn higher payoffs than their subordinates. One-tailed *t*-tests show that the mean difference between the superior's and the subordinate's total payoffs is significantly greater than zero if the superior does not receive the corporate guidelines (NCG-NCG: $M = 61.90$, $SD = 65.01$, $t(20) = 4.36$, $p = 0.0002$; NCG-CG: $M = 63.33$, $SD = 61.14$, $t(14) = 4.01$, $p = 0.0006$), and at a marginal significance level if only the superior receives the corporate guidelines (CG-NCG: $M = 13.64$, $SD = 44.14$, $t(21) = 1.45$, $p = 0.0810$). Only if both negotiators receive the corporate guidelines is the mean difference between the superior's and the subordinate's total payoffs not significantly greater than zero (CG-CG: $M = 2.78$, $SD = 20.81$, $t(17) = 0.57$, $p = 0.2893$). These results (mostly) support H3: Even though superiors provided with corporate guidelines benefit their subordinates, they ensure that they themselves earn more. However, if both the superior and the subordinate receive the corporate guidelines, their payoffs are statistically equal which can be interpreted as a more pronounced relatedness of both negotiation partners based on the shared corporate guidelines although the underlying economic situation remains unchanged.

2.2.4.2 Influence of Corporate Guidelines on Absolute Combined Deviations of Negotiation Outcomes from the Company Optimum

In 16 out of 76 dyads (21.05%), participants realized the company optimum suggested by the corporate guidelines. Considering the absolute combined deviations from the company optimum within the separate treatments, Table 2.9 (p. 162) depicts that while it does not differ much between the NCG-NCG and NCG-CG treatments, it is much lower in the CG-NCG and CG-CG treatments, i.e. treatments in which the superior receives corporate guidelines. These results indicate that negotiation outcomes shift towards the company optimum if the superior is provided with the guidelines.

²¹ To investigate potential drivers of our results in greater detail, we examined the subordinate's payoffs and the differences between the superior's and the subordinate's payoffs for the separate negotiation issues. The results that are presented in Appendices A.2-1 (p. 179) and A.2-2 (p. 181) show that only variables for the bonus pay are significantly affected if the superior is provided with the corporate guidelines.

Not supporting H4, regression results of Model 1 in Table 2.11 (p. 166) show that the absolute combined deviation from the company optimum does not significantly decrease ($b = -0.39, p = 0.373$) if the superior receives the corporate guidelines. As expected, providing the subordinate with the guidelines does not have a significant impact on the absolute combined deviation. Furthermore, H5 is not supported, as the absolute combined deviation does not significantly decrease if both parties receive the corporate guidelines ($b = -0.83, p = 0.211$).²²

However, the absolute combined deviation from the company optimum comprises deviations favoring either superiors or subordinates. But as only superiors have the ultimate decision-making power to direct negotiation outcomes to the company optimum by following the guidelines, we analyzed whether absolute combined deviations from the company optimum favoring superiors decrease if the superior is provided with corporate guidelines. For this purpose, for both negotiation issues, we coded deviations from the company optimum favoring the subordinate as well as realizations of the company optimum with zero. For deviations favoring the superior, we computed the equidistant absolute differences between the company optimum and the negotiated levels for both issues. Afterwards, we summed both differences.

²² MW tests yield similar results. The absolute combined deviation from the company optimum does not significantly differ between the treatment where no negotiation partner receives the corporate guidelines and both the treatment where only the superior receives them (NCG-NCG versus CG-NCG: $p = 0.3842$, MW test, two-tailed) and the treatment where only the subordinate receives them (NCG-NCG versus NCG-CG: $p = 0.9339$, MW test, two-tailed). Moreover, the absolute combined deviation from the company optimum in the treatment where only the superior receives the corporate guidelines is not significantly different from the absolute combined deviation in the treatment where both negotiation partners are provided with them (CG-NCG versus CG-CG: $p = 0.1305$, MW test, two-tailed).

Table 2.11: Results of Regression Analyses for Absolute Combined Deviations from the Company Optimum

Independent Variables	Dependent Variable					
	Model 1: <i>Absolute Combined Deviation from the Company Optimum</i>			Model 2: <i>Absolute Combined Deviation from the Company Optimum Favoring Superiors</i>		
	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI
<i>Intercept</i>	2.48 (0.31)	< 0.001	1.86, 3.09	1.86 (0.20)	< 0.001	1.46, 2.26
<i>CG SUP</i>	-0.39 (0.43)	0.373	-1.24, 0.47	-0.68 (0.28)	0.018	-1.23, -0.12
<i>CG SUB</i>	0.12 (0.48)	0.796	-0.83, 1.07	0.08 (0.31)	0.806	-0.54, 0.69
<i>CG SUP x CG SUB</i>	-0.83 (0.65)	0.211	-2.13, 0.48	-0.54 (0.42)	0.211	-1.38, 0.31
<i>F</i> (3, 72)	2.64	0.056		7.14	< 0.001	
<i>R</i> ²	0.10			0.23		
Adjusted <i>R</i> ²	0.06			0.20		

Notes. *N* = 76. Unstandardized regression coefficients (*b*) are shown, with standard errors (*SE*) in parentheses. Two-tailed *p*-values are presented. CI = confidence interval. *CG SUP* = provision of corporate guidelines to the superior; *CG SUB* = provision of corporate guidelines to the subordinate; *CG SUP x CG SUB* = interaction between *CG SUP* and *CG SUB*.

Supporting H4, Model 2 in Table 2.11 (p. 166) shows that the absolute combined deviation from the company optimum favoring superiors significantly decreases ($b = -0.68, p = 0.018$) if the superior receives the corporate guidelines. Providing the subordinate with the corporate guidelines still does not have a significant impact. Moreover, H5 is again not supported ($b = -0.54, p = 0.211$; see Model 2 in Table 2.11, p. 166).²³ In sum, we find further support for the prediction that corporate guidelines are only effective if presented to superiors, as they forego a part of their payoffs in order to bring the outcomes closer to the company optimum.²⁴

2.2.4.3 Supplementary Analyses

To check for the robustness of our results, we examine potential mediating aspects that might affect the negotiation outcomes. In particular, we analyze the influence of control variables regarding whether an agreement was reached, the negotiators' OC, and their SVO.²⁵

Influence of Whether an Agreement Was Reached

As a negotiation impasse would allow superiors to determine the realization of both negotiation issues, we were interested in analyzing whether reaching an agreement had a significant effect on the subordinates' total payoff. Across our 76 superior-subordinate dyads, 61 dyads (80.26%) reached an agreement within the given time. The distribution of dyads not reaching an agreement across treatments was as follows: six dyads in the NCG-NCG condition, four dyads in the NCG-CG condition, four dyads in the CG-NCG condition, and one dyad in the CG-CG

²³ MW tests yield the following results. The absolute combined deviation from the company optimum favoring superiors significantly differs between the treatment where no negotiation partner receives the corporate guidelines and the treatment where only the superior receives them (NCG-NCG versus CG-NCG: $p = 0.0367$, MW test, two-tailed). Furthermore, there is no significant difference in the absolute combined deviation from the company optimum favoring superiors between the treatment where no negotiation partner receives the corporate guidelines and the treatment where only the subordinate receives them (NCG-NCG versus NCG-CG: $p = 0.8292$, MW test, two-tailed). In contrast to the regression results, the absolute combined deviation from the company optimum favoring superiors is significantly different if both negotiation partners receive the corporate guidelines as compared to if only the superior receives them (CG-NCG versus CG-CG: $p = 0.0836$, MW test, two-tailed).

²⁴ The results on the absolute deviations of the separate negotiation issues from the company optimum are presented in Appendix A.2-3 (p. 183) and indicate that only the deviation of the bonus pay significantly decreases if the superior is provided with the corporate guidelines. In contrast, the respective deviations that favor superiors both significantly decrease if the superior receives the corporate guidelines.

²⁵ We discuss the main results in the text. The detailed regression results are provided in Appendices A.2-4 (p. 186), A.2-5 (p. 187), and A.2-6 (p. 188). The items measuring OC are included in Appendix A.2-5 (p. 187).

condition. Moreover, we ran regressions with the subordinate's total payoff as the dependent variable, the three independent variables for the treatment effects and a dummy variable for whether an agreement was reached or not (no = 0, yes = 1). Adding the latter dummy variable for reaching an agreement improved the prediction of the subordinate's total payoff, $R^2 = 0.50$, $F(4, 71) = 17.81$, $p < 0.001$. Whether an agreement was reached has a significantly positive impact on the subordinate's total payoff ($b = 45.68$, $SE = 6.66$, $t = 6.86$, 95% CI [32.39, 58.96], $p < 0.001$). However, the significance levels of the dummy treatment variables remain stable (*CG SUP*: $b = 19.89$, $SE = 6.91$, $t = 2.88$, 95% CI [6.11, 33.66], $p = 0.005$; *CG SUB*: $b = 0.37$, $SE = 7.62$, $t = 0.05$, 95% CI [-14.82, 15.56], $p = 0.962$; *CG SUP x CG SUB*: $b = -3.31$, $SE = 10.48$, $t = -0.32$, 95% CI [-24.20, 17.59], $p = 0.753$), which provides evidence of the robustness of the treatment effects.

Effect of Organizational Commitment (OC) and Social Value Orientation (SVO)

To further check for the robustness of our main results, we included control variables for OC and SVO derived from the post-negotiation questionnaire in our regressions. Four items tested OC using a 7-point Likert Scale (1 = perfect rejection to 7 = perfect acceptance). Cronbach's α was 0.84. The factor values deduced from a confirmatory factor analysis were then included in the regression analysis. SVO was measured through the scale developed by Murphy *et al.* (2011).

Adding OC to the regression on the subordinate's total payoff improves the model's predictive power with $R^2 = 0.22$, $F(5, 70) = 4.03$, $p = 0.003$. We find that the subordinate's OC has a significantly positive influence on their own total payoff ($b = 7.40$, $SE = 3.58$, $t = 2.07$, 95% CI [0.27, 14.53], $p = 0.042$). In contrast, the superior's OC has no significant influence on the subordinate's total payoff ($b = 3.33$, $SE = 4.16$, $t = 0.80$, 95% CI [-4.97, 11.63], $p = 0.426$). However, the main treatment effects do not change (*CG SUP*: $b = 24.18$, $SE = 8.76$, $t = 2.76$, 95% CI [6.71, 41.64], $p = 0.007$; *CG SUB*: $b = 6.73$, $SE = 9.93$, $t = 0.68$, 95% CI [-13.07, 26.54], $p = 0.500$; *CG SUP x CG SUB*: $b = -7.04$, $SE = 13.75$, $t = -0.51$, 95% CI [-34.46, 20.38], $p = 0.610$).

When controlling for the influence of the participants' SVO, we find that adding the participants' SVO to the regression analysis only marginally improves the model's power to predict the subordinate's total payoff with $R^2 = 0.18$, $F(5, 70) = 3.02$, $p = 0.016$. Neither the subordinate's nor the superior's SVO significantly impact the subordinate's total payoff ($b = 0.19$, $SE = 0.30$, $t = 0.66$, 95% CI [-0.39, 0.78], $p = 0.512$ and $b = 0.12$, $SE = 0.32$, $t = 0.37$, 95% CI [-0.51, 0.75], $p = 0.710$, respectively). This might be due to the fact that corporate

guidelines act as a robust instrument for influencing behavior regardless of the subjects' SVO (Kimmerle *et al.*, 2011). Nevertheless, the main effects remain stable (*CG SUP*: $b = 23.44$, $SE = 9.04$, $t = 2.59$, 95% CI [5.41, 41.47], $p = 0.012$; *CG SUB*: $b = 0.29$, $SE = 9.94$, $t = 0.03$, 95% CI [-19.54, 20.12], $p = 0.977$; *CG SUP* $\times$ *CG SUB*: $b = 2.32$, $SE = 13.71$, $t = 0.17$, 95% CI [-25.02, 29.66], $p = 0.866$), again indicating the robustness of our treatment effects.

2.2.5 Discussion and Conclusion

In this paper, we examined the effects of corporate guidelines on the negotiation between a superior and a subordinate in an organizational context. Interactions between superiors and subordinates are characterized by an unequal distribution of power. Previous research has shown both how power differences impact negotiation outcomes and how corporate guidelines influence decision-making, but effects were mixed. However, we are not aware of any studies that have analyzed the role-specific consequences of corporate guidelines in negotiations with power imbalances.

Our study sheds light on the effectiveness of corporate guidelines, that is, the convergence of negotiation outcomes, in negotiations with an unequal distribution of power. We manipulated the presentation of corporate guidelines to subjects in hierarchically different roles. Our results emphasize that the effectiveness of corporate guidelines depends on the roles individuals take on. We find corporate guidelines to be effective only if presented to negotiators in the role of the superior. While the presentation of corporate guidelines to superiors leads to a significant increase of subordinates' payoffs as well as a significant decrease of the differences between the superiors' and subordinates' payoffs, the presentation of the corporate guidelines to subordinates has no such significant impact. Hence, even if superiors have the power to exploit their subordinates by determining the negotiation outcomes in the case of a negotiation impasse, we find evidence that the presentation of corporate guidelines to superiors makes them cede a part of their surplus in favor of their subordinates. However, as superiors still reach higher mean individual payoffs despite the presence of corporate guidelines, the presence of corporate guidelines reduces superiors' use of power in their own favor but does not fully eliminate it. Moreover, providing the superior with corporate guidelines significantly decreases absolute deviations from the company optimum favoring superiors.

The influence of hierarchically different roles on negotiations has hardly been researched. For example, Polzer and Neale (1995), examining the influence of different goals on negotiation outcomes, report no significant differences between the negotiation behaviors of participants in the role of the recruiter and participants in the role of the candidate. The divergence between

our and their results arises from the different experimental designs, in that we combine the roles with associated power allocations in accordance with realistic conditions. In contrast, Pinkley *et al.* (1994), who analyzed the influence of differential power on, among other things, negotiation outcomes, found subjects in the role of the recruiter to obtain higher average individual negotiation outcomes than subjects in the role of the candidate irrespective of the distribution of power. However, this finding was only a by-product which could not be conclusively explained. We add to these results by showing that superiors with ultimate decision-making power reach higher individual payoffs than subordinates.

In addition, we contribute to negotiation research on unequal distributions of power by investigating a new contextual cue, that is, corporate guidelines in the form of a code of conduct and information on realizations compatible with this code. Previous research already showed that powerful negotiators provided with the goal of appearing fair take less of the resources than powerful negotiators without such a goal (Tripp, 1993). We add to the picture by revealing another mechanism, i.e. corporate guidelines, which can mitigate negotiation outcomes favoring the (more) powerful negotiation partner.

Finally, our study provides an enrichment of research concerning the effectiveness of corporate guidelines by linking it to intra-organizational negotiations shaped by an unequal distribution of power. For this purpose, SDT (Ryan and Deci, 2000) as a new theoretical basis in this research field can explain the dependence of the effectiveness of corporate guidelines on their role-dependent internalization. According to that, the internalization of corporate guidelines seems to primarily depend on the satisfaction of the basic psychological needs for autonomy and relatedness. The provision of power can lead to the satisfaction of these needs in such a way that powerful superiors internalize the corporate guidelines, which leads them to meet organizational goals and to cede a part of their payoffs in favor of their subordinates. In contrast, powerless subordinates lack the feelings of autonomy and relatedness with the result that the provision of corporate guidelines does not impact their negotiation behavior and the respective negotiation outcomes.

Our results have important practical implications. First, organizations have to be aware of the impact of the unequal distribution of power on intra-organizational negotiations and should take countermeasures if they are in the organization's interest. As shown by our experiment, such countermeasures can consist of the provision of corporate guidelines that emphasize organizational values and explicitly state organizationally desired realizations. Second, these corporate guidelines should especially be communicated to superiors. As individuals in hierarchically higher positions are thought to identify more with both their role and corporate

guidelines, they are predestinated to transfer the organizational values and goals to lower organizational levels. This idea is supported by previous research conducted by Petersen and Krings (2009), who found the effectiveness of codes of conduct to be mostly influenced by the superior.

Our work is subject to several limitations which might be addressed in future research. First, we consider corporate guidelines without detection and punishment of noncompliance. In reality, corporate guidelines are often enforced by imposing sanctions for non-adherence. Accordingly, as just the presentation of corporate guidelines to the subordinate does not have a significant influence on negotiation outcomes, future research should examine the influence of the enforcement of corporate guidelines. Second, our prescribed company optimum represents a compromise solution, that is, the solution that lies in the middle of both negotiation partners' payoff schedules. Thus, to meet corporate guidelines, subjects do not have to sacrifice more than one-half of their payoff. Even if this assumption is realistic, it is important to analyze how corporate guidelines that require the abandonment of higher amounts of the individual payoffs influence negotiation behavior, particularly the behavior of superiors.

References for Research Paper 2

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Appendix of Research Paper 2

This appendix contains supplementary material for Research Paper 2 “On the Effectiveness of Corporate Guidelines: The Importance of Hierarchical Roles”. First, to investigate potential drivers of our results presented in the paper in greater detail, we examined the negotiation issues, i.e. paid vacation days and the bonus pay, separately. Hence, we considered descriptive statistics and conducted regression analyses for the separate negotiation issues of paid vacation days and the bonus pay regarding the subordinate’s payoffs (Appendix A.2-1), the differences between the superior’s and the subordinate’s payoffs (Appendix A.2-2), and the absolute deviations from the company optimum (Appendix A.2-3). Second, the detailed regression analyses regarding the inclusion of control variables for whether an agreement was reached (Appendix A.2-4), the participants’ organizational commitment (OC; Appendix A.2-5), and the participants’ social value orientation (SVO; Appendix A.2-6) are presented.

In all regression analyses, the main independent variables are the treatment dummy variables for the presentation of the corporate guidelines to the superior (*CG SUP*; absent = 0, present = 1) and the presentation of the corporate guidelines to the subordinate (*CG SUB*; absent = 0, present = 1). In addition, we tested for the interaction between the presentation of the corporate guidelines to the superior and to the subordinate (*CG SUP* $\times$ *CG SUB*).

Finally, the experimental instructions are depicted (Appendix A.2-7).

A.2-1 Subordinate’s Payoffs for the Separate Negotiation Issues

First, we present descriptive statistics and regression analyses concerning the subordinate’s payoffs for paid vacation days and for the bonus pay, respectively. As depicted in Table A.2-1.1 (p. 180), the subordinate’s payoff for paid vacation days does not vary much between treatments. In contrast, the subordinate’s payoff for bonus pay varies as a function of whether the superior receives the corporate guidelines, with the subordinate’s payoff being higher when the superior is provided with the guidelines. This indicates that the increase in the subordinate’s payoff is driven by the bonus pay, the negotiation issue which is more valuable from the superior’s economic perspective.

Table A.2-1.1: Descriptive Statistics on the Subordinate's Payoffs for the Separate Negotiation Issues

	NCG-NCG (<i>N</i> = 21)		NCG-CG (<i>N</i> = 15)		CG-NCG (<i>N</i> = 22)		CG-CG (<i>N</i> = 18)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Subordinate's Payoff for Paid Vacation Days	68.57	35.68	74.00	33.76	84.55	30.19	80.00	25.21
Subordinate's Payoff for the Bonus Pay	9.52	16.27	5.33	11.87	18.18	16.22	25.56	15.04

Notes. Means (*M*) and standard deviations (*SD*) are shown. NCG-NCG = treatment in which neither the superior nor the subordinate received the corporate guidelines; NCG-CG = treatment in which only the subordinate received the corporate guidelines; CG-NCG = treatment in which only the superior received the corporate guidelines; CG-CG = treatment in which both the superior and the subordinate received the corporate guidelines.

The results reported in Table A.2-1.2 (p. 181) show that the subordinate's payoff for paid vacation days cannot be explained by any of the independent variables, while the subordinate's payoff for the bonus pay significantly increases if the superior is provided with the corporate guidelines. Given that the issue of bonus pay is economically more important to the superior, corporate guidelines lead superiors to benefit their subordinates.

Table A.2-1.2: Results of Regression Analyses on the Subordinate's Payoffs for the Separate Negotiation Issues

Independent Variables	Dependent Variable:					
	<i>Subordinate's Payoff for Paid Vacation Days</i>			<i>Subordinate's Payoff for the Bonus Pay</i>		
	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI
<i>Intercept</i>	68.57 (6.87)	< 0.001	54.88, 82.27	9.52 (3.32)	0.005	2.91, 16.14
<i>CG SUP</i>	15.97 (9.60)	0.101	-3.17, 35.12	8.66 (4.64)	0.066	-0.59, 17.90
<i>CG SUB</i>	5.43 (10.64)	0.612	-15.79, 26.65	-4.19 (5.14)	0.418	-14.44, 6.05
<i>CG SUP x CG SUB</i>	-9.97 (14.61)	0.497	-39.09, 19.15	11.56 (7.05)	0.105	-2.50, 25.63
<i>F</i> (3, 72)	1.02	0.388		6.14	< 0.001	
<i>R</i> ²	0.04			0.20		
Adjusted <i>R</i> ²	0.00			0.17		

Notes. *N* = 76. Unstandardized regression coefficients (*b*) are shown, with standard errors (*SE*) in parentheses. Two-tailed *p*-values are presented. CI = confidence interval. *CG SUP* = provision of corporate guidelines to the superior; *CG SUB* = provision of corporate guidelines to the subordinate; *CG SUP x CG SUB* = interaction between *CG SUP* and *CG SUB*.

A.2-2 Difference between the Superior's and the Subordinate's Payoffs for the Separate Negotiation Issues

In this section, we depict descriptive statistics and regression analyses concerning the differences between the superior's and subordinate's payoffs for paid vacation days and for the bonus pay, respectively. As shown in Table A.2-2.1 (p. 182), the difference between the superior's and the subordinate's payoffs for paid vacation days is negative in all treatments, although it is higher if the superior receives the corporate guidelines. In the case of the difference between the superior's and the subordinate's payoffs for the bonus pay, this difference is greater than zero in all treatments, and varies as a function of whether the superior receives the corporate guidelines with the subordinate's payoff being higher when the superior is provided with the guidelines.

Table A.2-2.1: Descriptive Statistics on Differences between the Superior's and the Subordinate's Payoffs for the Separate Negotiation Issues

	NCG-NCG (<i>N</i> = 21)		NCG-CG (<i>N</i> = 15)		CG-NCG (<i>N</i> = 22)		CG-CG (<i>N</i> = 18)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Difference between the Superior's and the Subordinate's Payoffs for Paid Vacation Days	-34.29	59.46	-43.33	56.27	-60.91	50.32	-53.33	42.01
Difference between the Superior's and the Subordinate's Payoffs for the Bonus Pay	96.19	40.68	106.67	29.68	74.55	40.56	56.11	37.60

Notes. Means (*M*) and standard deviations (*SD*) are shown. NCG-NCG = treatment in which neither the superior nor the subordinate received the corporate guidelines; NCG-CG = treatment in which only the subordinate received the corporate guidelines; CG-NCG = treatment in which only the superior received the corporate guidelines; CG-CG = treatment in which both the superior and the subordinate received the corporate guidelines.

The results in Table A.2-2.2 (p. 183) show that the difference between the superior's and the subordinate's payoffs for paid vacation days cannot be explained by any of the independent variables. The difference between the superior's and the subordinate's payoffs for the bonus pay significantly decreases if the corporate guidelines are presented to the superior. This shows that superiors follow corporate guidelines and benefit their subordinates.

Table A.2-2.2: Results of Regression Analyses on Differences between the Superior's and the Subordinate's Payoffs for the Separate Negotiation Issues

Independent Variables	Dependent Variable:					
	<i>Difference between the Superior's and the Subordinate's Payoffs for Paid Vacation Days</i>			<i>Difference between the Superior's and the Subordinate's Payoffs for the Bonus Pay</i>		
	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI
<i>Intercept</i>	-34.29 (11.45)	0.004	-57.11, -11.46	96.19 (8.29)	< 0.001	79.66, 112.72
<i>CG SUP</i>	-26.62 (16.01)	0.101	-58.53, 5.29	-21.65 (11.59)	0.066	-44.76, 1.47
<i>CG SUB</i>	-9.05 (17.74)	0.612	-44.41, 26.31	10.48 (12.85)	0.418	-15.14, 36.09
<i>CG SUP x CG SUB</i>	16.62 (24.35)	0.497	-31.91, 65.16	-28.91 (17.63)	0.105	-64.06, 6.24
<i>F</i> (3, 72)	1.02	0.388		6.14	< 0.001	
<i>R</i> ²	0.04			0.20		
Adjusted <i>R</i> ²	0.00			0.17		

Notes. *N* = 76. Unstandardized regression coefficients (*b*) are shown, with standard errors (*SE*) in parentheses. Two-tailed *p*-values are presented. CI = confidence interval. *CG SUP* = provision of corporate guidelines to the superior; *CG SUB* = provision of corporate guidelines to the subordinate; *CG SUP x CG SUB* = interaction between *CG SUP* and *CG SUB*.

A.2-3 Absolute Deviations from the Company Optimum of the Separate Negotiation Issues

To examine the absolute deviations of the separate negotiation issues from the company optimum, we computed for each issue the equidistant absolute difference between the company optimum (i.e., two paid vacation days and a bonus pay of 6% of the company's profit, respectively) and the negotiated level of the respective issue. The descriptive statistics in Table A.2-3.1 (p. 184) show that the average absolute deviation of paid vacation days does not vary much between treatments. In contrast, the average absolute deviation of the bonus pay varies as a function of whether the superior receives the corporate guidelines with the absolute deviation from the company optimum being smaller when the superior is provided with the guidelines. This is an indication that the reduction of absolute combined deviation from the

company optimum is driven by the bonus pay – the negotiation issue which is more valuable from the superior's economic perspective.

Table A.2-3.1: Descriptive Statistics on Absolute Deviations from the Company Optimum for the Separate Negotiation Issues

	NCG-NCG (<i>N</i> = 21)		NCG-CG (<i>N</i> = 15)		CG-NCG (<i>N</i> = 22)		CG-CG (<i>N</i> = 18)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Absolute Deviation from the Company Optimum of Paid Vacation Days	0.95	0.74	0.87	0.83	1.00	0.82	0.67	0.84
Absolute Deviation from the Company Optimum of the Bonus Pay	1.52	0.81	1.73	0.59	1.09	0.81	0.72	0.75

Notes. Means (*M*) and standard deviations (*SD*) are shown. NCG-NCG = treatment in which neither the superior nor the subordinate received the corporate guidelines; NCG-CG = treatment in which only the subordinate received the corporate guidelines; CG-NCG = treatment in which only the superior received the corporate guidelines; CG-CG = treatment in which both the superior and the subordinate received the corporate guidelines.

The results reported in Table A.2-3.2 (p. 185) show that the absolute deviation of paid vacation days from the company optimum cannot be explained by any of the independent variables, while the absolute deviation of the bonus pay from the company optimum significantly decreases if the superior is provided with the corporate guidelines. As the issue of bonus pay is economically more important to the superior, corporate guidelines lead superiors to follow corporate norms and to cede a part of their economic outcomes to benefit their subordinates.

Table A.2-3.2: Results of Regression Analyses on Absolute Deviations from the Company Optimum of the Separate Negotiation Issues

Independent Variables	Dependent Variable:					
	<i>Absolute Deviation from the Company Optimum of Paid Vacation Days</i>			<i>Absolute Deviation from the Company Optimum of the Bonus Pay</i>		
	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI
<i>Intercept</i>	0.95 (0.18)	< 0.001	0.60, 1.30	1.52 (0.17)	< 0.001	1.19, 1.85
<i>CG SUP</i>	0.05 (0.25)	0.847	-0.44, 0.54	-0.43 (0.23)	0.066	-0.90, 0.03
<i>CG SUB</i>	-0.09 (0.27)	0.754	-0.63, 0.46	0.21 (0.26)	0.418	-0.30, 0.72
<i>CG SUP x CG SUB</i>	-0.25 (0.37)	0.510	-0.99, 0.50	-0.58 (0.35)	0.105	-1.28, 0.12
<i>F</i> (3, 72)	0.64	0.591		6.14	< 0.001	
<i>R</i> ²	0.03			0.20		
Adjusted <i>R</i> ²	-0.01			0.17		

Notes. *N* = 76. Unstandardized regression coefficients (*b*) are shown, with standard errors (*SE*) in parentheses. Two-tailed *p*-values are presented. CI = confidence interval. *CG SUP* = provision of corporate guidelines to the superior; *CG SUB* = provision of corporate guidelines to the subordinate; *CG SUP x CG SUB* = interaction between *CG SUP* and *CG SUB*.

To analyze absolute deviations from the company optimum of the separate negotiation issues that favor superiors, we coded deviations from the company optimum favoring the subordinate as well as realizations of the company optimum for the respective issue with zero. For deviations favoring the superior, we computed the equidistant absolute difference between the company optimum and the negotiated level of the respective issue.

The results reported in Table A.2-3.3 (p. 186) show that both the absolute deviation from the company optimum of paid vacation days favoring superiors and the absolute deviation from the company optimum of the bonus pay favoring superiors significantly decrease if the superior is provided with the corporate guidelines. This reinforces the main results that corporate guidelines only have a significant effect if they are presented to superiors.

Table A.2-3.3: Results of Regression Analyses on Absolute Deviations from the Company Optimum Favoring Superiors of the Separate Negotiation Issues

Independent Variables	Dependent Variable:					
	<i>Absolute Deviation of Paid Vacation Days Favoring Superiors</i>			<i>Absolute Deviation of the Bonus Pay Favoring Superiors</i>		
	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI
<i>Intercept</i>	0.33 (0.10)	0.001	0.14, 0.53	1.52 (0.17)	< 0.001	1.19, 1.85
<i>CG SUP</i>	-0.24 (0.14)	0.085	-0.52, 0.03	-0.43 (0.23)	0.066	-0.90, 0.03
<i>CG SUB</i>	-0.13 (0.15)	0.389	-0.44, 0.17	0.21 (0.26)	0.418	-0.30, 0.72
<i>CG SUP x CG SUB</i>	0.04 (0.21)	0.841	-0.38, 0.46	-0.58 (0.35)	0.105	-1.28, 0.12
<i>F</i> (3, 72)	1.97	0.127		6.14	< 0.001	
<i>R</i> ²	0.08			0.20		
Adjusted <i>R</i> ²	0.04			0.17		

Notes. *N* = 76. Unstandardized regression coefficients (*b*) are shown, with standard errors (*SE*) in parentheses. Two-tailed *p*-values are presented. CI = confidence interval. *CG SUP* = provision of corporate guidelines to the superior; *CG SUB* = provision of corporate guidelines to the subordinate; *CG SUP x CG SUB* = interaction between *CG SUP* and *CG SUB*.

A.2-4 Influence of Whether an Agreement Was Reached

In this section, we present the detailed results of the regression concerning the supplementary analysis in the paper on the influence of whether an agreement was reached. The independent variables are the treatment dummy variables for the presentation of the corporate guidelines to the superior (*CG SUP*; absent = 0, present = 1) and the presentation of the corporate guidelines to the subordinate (*CG SUB*; absent = 0, present = 1). In addition, we tested for the interaction between the presentation of the corporate guidelines to the superior and to the subordinate (*CG SUP x CG SUB*). Furthermore, a dummy variable for whether an agreement was reached or not (no = 0, yes = 1) was included.

The results reported in Table A.2-4.1 (p. 187) show that reaching an agreement has a significantly positive effect on the subordinate's total payoff. However, the significance levels of the treatment variables are consistent with the main results presented in the paper.

Table A.2-4.1: Results of Regression Analyses on the Subordinate's Total Payoff with a Control Variable for Reaching an Agreement

Independent Variables	Dependent Variable: <i>Subordinate's Total Payoff</i>		
	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI
<i>Intercept</i>	45.47 (6.84)	< 0.001	31.83, 59.11
<i>CG SUP</i>	19.89 (6.91)	0.005	6.11, 33.66
<i>CG SUB</i>	0.37 (7.62)	0.962	-14.82, 15.56
<i>CG SUP x CG SUB</i>	-3.31 (10.48)	0.753	-24.20, 17.59
<i>Agreement</i>	45.68 (6.66)	< 0.001	32.39, 58.96
<i>F</i> (3, 72)	17.81	< 0.001	
<i>R</i> ²	0.50		
Adjusted <i>R</i> ²	0.47		

Notes. *N* = 76. Unstandardized regression coefficients (*b*) are shown, with standard errors (*SE*) in parentheses. Two-tailed *p*-values are presented. CI = confidence interval. *CG SUP* = provision of corporate guidelines to the superior; *CG SUB* = provision of corporate guidelines to the subordinate; *CG SUP x CG SUB* = interaction between *CG SUP* and *CG SUB*. *Agreement* is a control dummy variable for whether an agreement was reached (no = 0, yes = 1).

A.2-5 Influence of Participants' Organizational Commitment (OC)

Next, we show the detailed results of the regression concerning the supplementary analysis in the paper on the influence of participants' OC. The independent variables are the treatment dummy variables for the presentation of the corporate guidelines to the superior (*CG SUP*; absent = 0, present = 1) and the presentation of the corporate guidelines to the subordinate (*CG SUB*; absent = 0, present = 1). In addition, we tested for the interaction between the presentation of the corporate guidelines to the superior and to the subordinate (*CG SUP x CG SUB*). Furthermore, the factor values for the superior's and the subordinate's OC, which was tested by four items using a 7-point Likert Scale (1 = "perfect rejection" to 7 = "perfect acceptance"; Cronbach's $\alpha = 0.84$), were deduced from a confirmatory factor analysis and included in the regression analysis. The items were "I am ready to make a bigger effort than expected so that UNODO is successful", "In my opinion, my moral values and the values of

UNODO are very similar”, “I regard myself as someone who is strongly attached to their company”, and “I would like to work for a company like UNODO”.

The results in Table A.2-5.1 (p. 188) show that the subordinate’s OC has a significantly positive effect on the subordinate’s total payoff. The treatment effects remain stable compared to the main results presented in the paper.

Table A.2-5.1: Results of Regression Analyses on the Subordinate’s Total Payoff with Control Variables for Participants’ Organizational Commitment (OC)

Independent Variables	Dependent Variable: <i>Subordinate’s Total Payoff</i>		
	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI
<i>Intercept</i>	78.28 (6.30)	< 0.001	65.71, 90.85
<i>CG SUP</i>	24.18 (8.76)	0.007	6.71, 41.64
<i>CG SUB</i>	6.73 (9.93)	0.500	-13.07, 26.54
<i>CG SUP x CG SUB</i>	-7.04 (13.75)	0.610	-34.46, 20.38
<i>OC SUB</i>	7.40 (3.58)	0.042	0.27, 14.53
<i>OC SUP</i>	3.33 (4.16)	0.426	-4.97, 11.63
<i>F</i> (3, 72)	4.03	0.003	
<i>R</i> ²	0.22		
Adjusted <i>R</i> ²	0.17		

Notes. *N* = 76. Unstandardized regression coefficients (*b*) are shown, with standard errors (*SE*) in parentheses. Two-tailed *p*-values are presented. CI = confidence interval. *CG SUP* = provision of corporate guidelines to the superior; *CG SUB* = provision of corporate guidelines to the subordinate; *CG SUP x CG SUB* = interaction between *CG SUP* and *CG SUB*. *OC SUB* = subordinate’s organizational commitment; *OC SUP* = superior’s organizational commitment. The factor values for organizational commitment were deduced from a confirmatory factor analysis.

A.2-6 Influence of Participants’ Social Value Orientation (SVO)

Finally, the detailed results of the regression concerning the supplementary analysis in the paper on the influence of participants’ SVO are depicted. The independent variables are the treatment

dummy variables for the presentation of the corporate guidelines to the superior (*CG SUP*; absent = 0, present = 1) and the presentation of the corporate guidelines to the subordinate (*CG SUB*; absent = 0, present = 1). In addition, we tested for the interaction between the presentation of the corporate guidelines to the superior and to the subordinate (*CG SUP* $\times$ *CG SUB*). Furthermore, the superior's and the subordinate's SVO, which was measured through the scale developed by Murphy *et al.* (2011), were included in the regression analysis.

The results reported in Table A.2-6.1 (p. 189) show that neither the subordinate's SVO nor the superior's SVO have a significant effect on the subordinate's total payoff. However, the significance levels of the treatment variables are consistent with the main results in the paper.

Table A.2-6.1: Results of Regression Analyses on the Subordinate's Total Payoff with Control Variables for Participants' Social Value Orientation (SVO)

Independent Variables	Dependent Variable: <i>Subordinate's Total Payoff</i>		
	<i>b</i> (<i>SE</i>)	<i>p</i>	95% CI
<i>Intercept</i>	69.96 (12.72)	< 0.001	44.60, 95.32
<i>CG SUP</i>	23.44 (9.04)	0.012	5.41, 41.47
<i>CG SUB</i>	0.29 (9.94)	0.977	-19.54, 20.12
<i>CG SUP</i> $\times$ <i>CG SUB</i>	2.32 (13.71)	0.866	-25.02, 29.66
<i>SVO SUB</i>	0.19 (0.30)	0.512	-0.39, 0.78
<i>SVO SUP</i>	0.12 (0.32)	0.710	-0.51, 0.75
<i>F</i> (3, 72)	3.02	0.016	
<i>R</i> ²	0.18		
Adjusted <i>R</i> ²	0.12		

Notes. *N* = 76. Unstandardized regression coefficients (*b*) are shown, with standard errors (*SE*) in parentheses. Two-tailed *p*-values are presented. CI = confidence interval. *CG SUP* = provision of corporate guidelines to the superior; *CG SUB* = provision of corporate guidelines to the subordinate; *CG SUP* $\times$ *CG SUB* = interaction between *CG SUP* and *CG SUB*. *SVO SUB* = subordinate's social value orientation; *SVO SUP* = superior's social value orientation. The values for social value orientation correspond to the subordinate's and the superior's SVO angles.

A.2-7 Experimental Instructions

Notes:

The instructions have been translated from the German; the original instructions are available upon request.

The negotiation task is based on O'Connor *et al.* (2005).

Abbreviations for the four experimental treatments:

- NCG-NCG: Neither the participant in the role of the superior nor the participant in the role of the subordinate received the corporate guidelines.
- NCG-CG: Only the participant in the role of the subordinate received the corporate guidelines.
- CG-NCG: Only the participant in the role of the superior received the corporate guidelines.
- CG-CG: Both the participant in the role of the superior and the participant in the role of the subordinate received the corporate guidelines.

Text written in green: Only participants who received the corporate guidelines were provided with this text, i.e. participants

- in the role of the superior in the CG-NCG and in the CG-CG treatment, and
- in the role of the subordinate in the NCG-CG and in the CG-CG treatment.

Text written in red: In half of the dyads, the participant in the role of the superior had to make the first offer, whereas in the other half of the dyads it was the participant in the role of the subordinate who made the first offer. In the screens presented, the participant in the role of the subordinate makes the first offer. Below the respective screens, the text in the case of the participant in the role of the superior making the first offer is shown.

Text written in blue: Regarding the negotiation, only the screens for the participant in the role of the superior are shown. Below the respective screens, the alternative texts for the participant in the role of the subordinate are shown.

The goal of this study is to find out how people conduct negotiations in their workplace. The experiment consists of several parts:

- 1) A section with INFORMATION about your today's task.
- 2) A section where you will LEARN something about the composition of your payment.
- 3) A section where you will conduct a NEGOTIATION.
- 4) A final questionnaire.

[Click here to get started.](#)

INFORMATION: Introduction to the Company

In preparation for this experiment, please imagine that you are working for the medium-sized company UNODO. The company enjoys an excellent reputation as a good employer who treats and gives promotion to its employees fairly. UNODO has been profitable within the last years and it is expected that this trend will continue in the future.

On your desk you will find a sealed envelope. Please open this envelope when and only when you are instructed to do so during the experiment. At the end of the experiment the envelope has to be marked with your desk number and handed in.

[Next](#)

Participants who received the corporate guidelines were provided with the following three screens.

As part of its strategic regulation, UNODO has introduced the following code of conduct that employees should adhere to regarding their behavior.

Please read the following code of conduct.

Now, please open the envelope on your desk and remove the printed code of conduct.

If you accept the code of conduct, please sign it as indication of your agreement on the right-hand side next to “I agree to the code of conduct and will adhere to it”.

If you do not accept the code of conduct, please sign it on the left-hand side next to “I do not agree to the code of conduct”.

It is imperative that you hand in the signed code of conduct together with the opened envelope at the end of the experiment because, otherwise, you cannot be paid for the experiment.

Next

UNODO Code of Conduct

Values

Our company’s foundation is built on our values, which distinguish us and guide our actions. We conduct our business in a socially responsible and ethical manner. We respect the law, support universal human rights, protect the environment, and benefit the communities where we work.

Integrity

We are honest with others and ourselves. We meet the highest ethical standards in all business dealings. We do what we say we will do. We accept responsibility and hold ourselves accountable for our work and our actions.

Trust

We trust, respect and support each other, and we strive to earn the trust of our colleagues and partners.

I do not agree to the code of conduct.

I agree to the code of conduct and will adhere to it.

UNODO Code of Conduct

High Performance

We are committed to excellence in everything we do, and we strive to continually improve. We are passionate about achieving results that exceed expectations – our own and those of others. We drive for results with energy and a sense of urgency.

Subordinate Compensation and Tenure

Our Company has a “pay-for-performance” philosophy. We administer wages, salaries and benefits to maintain our competitive position in the marketplace. It allows us to attract and retain top-notch personnel, provide incentives, and reward excellence. This approach to compensation supports our value of High Performance. UNODO does not guarantee employment in a specific job or for any particular period of time to any subordinate.

I do not agree to the code of conduct.

I agree to the code of conduct and will adhere to it.

If you accept the code of conduct, please sign the printed code of conduct on the right-hand side next to “I agree to the code of conduct and will adhere to it”.

If you do not accept the code of conduct, please sign the printed code of conduct on the left-hand side next to “I do not agree to the code of conduct”.

LEARNING PROCESS: Your Today’s Task

In your today’s task, you will conduct a negotiation with another person. For this purpose, you will either take on the role of the superior or the role of the subordinate. Role assignment will occur randomly. At any one time, one superior will negotiate with one subordinate. You will never find out who the other person is, because the interaction will exclusively take place via the computer. Also, your partner will not find out who you are. Your payment will depend on the result of the negotiation that you and your partner reach. In detail:

1. You will be assigned to a team. Each team consists of two persons – you and your partner. The role of the superior will be assigned to one of you. The respective partner will take on the role of the subordinate. The roles will not change during the experiment.
2. You and your partner will conduct a negotiation on the subordinate’s incentive system.
3. Your payment will be calculated based on the negotiation result. Your payment will be paid out to you at the end of today’s session.

Next

LEARNING PROCESS: Composition of Your Payment

Your payment will depend on the negotiation result that you and your partner reach together. You will only receive information about your own utility regarding the possible incentive systems. You will not receive information about your partner's utility.

In addition to the payment depending on the negotiation result, each of you will receive a basic payment in the amount of 60 ECU (= Experimental Currency Units).

At the end of the experiment the ECU will be converted into Euro at an **exchange rate of 20 ECU = 1 Euro**.

I have understood the details of payment.

LEARNING PROCESS: Description of Your Task

You will conduct a negotiation with your partner (either from the perspective of the superior or of the subordinate) on the subordinate's incentive system. For this purpose, you will negotiate two independent aspects:

1. Paid vacation days per month
2. Bonus pay per month

For each aspect, there are five possible levels that will lead to different utilities. Depending on the assigned role, you will receive a summary regarding the utility of the different levels of the two aspects.

Your goal is to maximize your individual utility. **The company expects you to act in terms of the code of conduct.**

Both you and your partner will have the opportunity to make offers concerning certain levels of the two aspects. Additionally, you and your partner can send messages to each other.

Overall, you will have 20 minutes to reach an agreement with your partner. The negotiation will end as soon as you and your partner reach an agreement concerning the two aspects of the incentive system. You will have reached an agreement if both of you make the same offer in direct succession. If you do not reach an agreement within the 20 minutes, the superior will determine the levels of the two aspects of the incentive system without involving the subordinate.

Continue to the control questions

Please answer the following questions and then click on “Next”. You will not reach the next screen until you have answered all questions correctly.

1. The company UNODO is considered to be a good employer that treats its employees fairly.	☐ Yes ☐ No
2. The role of either the superior or the subordinate will be assigned to you randomly.	☐ Yes ☐ No
3. You will negotiate with several persons.	☐ Yes ☐ No
4. You and your partner will negotiate two independent aspects of the subordinate’s incentive system.	☐ Yes ☐ No
5. For each of these two aspects there are five possible levels that can be negotiated.	☐ Yes ☐ No
6. Overall, you have 10 minutes to reach an agreement with your partner.	☐ Yes ☐ No
7. Overall, you have 20 minutes to reach an agreement with your partner.	☐ Yes ☐ No
8. You will have reached an agreement with your partner if both of you make the same offer in direct succession.	☐ Yes ☐ No
9. In the case that you do not reach an agreement within the given time, the superior will determine the levels of the two aspects of the incentive system.	☐ Yes ☐ No

Next

Participants in the role of the superior were provided with the following two screens.

You are going to be the superior.

In the following, you will negotiate with your subordinate on two aspects of his or her incentive system:

1. Paid vacation days per month
2. Bonus pay per month

There are five different levels for each aspect that will lead to different utilities. On the next screen, you will receive a summary regarding the utility of the different levels of the two aspects.

Your goal is to maximize your individual utility. **The company expects you to act in terms of the code of conduct.**

Both you and your subordinate will have the opportunity to make offers concerning certain levels of the two aspects. Additionally, you and your subordinate can send messages to each other. **At the beginning of the negotiation, your subordinate will make the first offer and will have the possibility to send a message to you. You can then respond to this offer.**

Overall, you will have 20 minutes to reach an agreement with your subordinate. The negotiation will end as soon as you and your subordinate reach an agreement concerning the two aspects of the incentive system. You will have reached an agreement if both of you make the same offer in direct succession. If you do not reach an agreement within the 20 minutes, you will determine the levels of the two aspects of the incentive system without involving the subordinate.

I have understood the negotiation task.

* In the case that the superior made the first offer, the text written in red was as follows:

“At the beginning of the negotiation, you will make the first offer and will have the possibility to send a message to your subordinate. Your subordinate can then respond to this offer.”

Paid Vacation Days per Month	
Number of Paid Vacation Days per Month	Resulting Payout (in ECU)
0	80
1	60
2	40
3	20
4	0

Bonus Pay per Month	
Bonus Pay per Month (Share of Company Profit in %)	Resulting Payout (in ECU)
0%	120
3%	90
6%	60
9%	30
12%	0

The more paid vacation days per month you allow your subordinate, the less financially optimal the situation will be for you because, on vacation days, you will be paying your subordinate even though the subordinate is not working. Furthermore, additional opportunity costs due to the absence of the subordinate might occur. Each paid vacation day corresponds to an additional utility loss of 20 ECU.

The more bonus pay per month you allow your subordinate, the less financially optimal the situation will be for you because you will be paying the subordinate beyond his or her regular salary. Each increase in the bonus pay per month corresponds to an additional utility loss of 30 ECU.

From your own financial point of view, 0 paid vacation days per month and a bonus pay per month of 0% of the company profit would be optimal because this combination would lead to the highest possible utility of $(80 + 120 =) 200$ ECU (and therefore to your highest possible payout).

Next

Participants in the role of the subordinate were provided with the following two screens.

You are going to be the subordinate.

In the following, you will negotiate with your superior on two aspects of your incentive system:

1. Paid vacation days per month
2. Bonus pay per month

There are five different levels for each aspect that will lead to different utilities. On the next screen, you will receive a summary regarding the utility of the different levels of the two aspects.

Your goal is to maximize your individual utility. **The company expects you to act in terms of the code of conduct.**

Both you and your superior will have the opportunity to make offers concerning certain levels of the two aspects. Additionally, you and your superior can send messages to each other. **At the beginning of the negotiation, you will make the first offer and will have the possibility to send a message to your superior. Your superior can then respond to this offer.**

Overall, you will have 20 minutes to reach an agreement with your superior. The negotiation will end as soon as you and your superior reach an agreement concerning the two aspects of the incentive system. You will have reached an agreement if both of you make the same offer in direct succession. If you do not reach an agreement within the 20 minutes, your superior will determine the levels of the two aspects of the incentive system without involving you.

I have understood the negotiation task.

* In the case that the superior made the first offer, the text written in red was as follows:

“At the beginning of the negotiation, your superior will make the first offer and will have the possibility to send a message to you. You can then respond to this offer.”

Paid Vacation Days per Month		Bonus Pay per Month	
Number of Paid Vacation Days per Month	Resulting Payout (in ECU)	Bonus Pay per Month (Share of Company Profit in %)	Resulting Payout (in ECU)
0	0	0%	0
1	30	3%	20
2	60	6%	40
3	90	9%	60
4	120	12%	80

The more paid vacation days per month that you negotiate for yourself, the more your quality of life will improve. Each paid vacation day per month corresponds to an additional utility of 30 ECU.

The higher the bonus pay per month that you negotiate for yourself, the more your financial situation will improve because you will receive this payment in addition to your regular salary and you will not have to repay it. Each increase in the bonus pay per month corresponds to an additional utility of 20 ECU.

From your own financial point of view, 4 paid vacation days per month and a bonus pay per month of 12% of the company profit would be optimal because this combination would lead to the highest possible utility of $(120 + 80 =) 200$ ECU (and therefore to your highest possible payout).



Participants who received the corporate guidelines were provided with the following screen.

Furthermore, the company UNODO has established which levels of the two aspects of the subordinate's incentive system are compatible with UNODO's code of conduct.

Paid Vacation Days per Month	Bonus Pay per Month
As UNODO wants its employees to be well-adjusted, and the company's business is subject to seasonal fluctuations, two paid vacation days per month are compatible with its code of conduct. Fewer than two paid vacation days would infringe on the employees' work-life-balance. More than two paid vacation days would compromise the company's financial situation.	As UNODO wants to reward its employees' performance in a fair and appropriate manner, a bonus pay per month of 6% of the company profit is compatible with the code of conduct. A bonus pay per month of more than 6% would place a financial strain on the company.



	Remaining Time: 19 minutes 45 seconds
Please wait for your subordinate's offer.	

* For participants in the role of the subordinate, "subordinate's" was replaced by "superior's".

	Remaining Time: 18 minutes 54 seconds				
Here you can see your subordinate's offer and message:					
Your subordinate's offer:					
<table border="1" style="width: 100%;"><tr><th style="padding: 5px;">Paid Vacation Days per Month</th></tr><tr><td style="text-align: center; padding: 5px;">4</td></tr></table>	Paid Vacation Days per Month	4	<table border="1" style="width: 100%;"><tr><th style="padding: 5px;">Bonus Pay per Month (Share of Company Profit in %)</th></tr><tr><td style="text-align: center; padding: 5px;">12</td></tr></table>	Bonus Pay per Month (Share of Company Profit in %)	12
Paid Vacation Days per Month					
4					
Bonus Pay per Month (Share of Company Profit in %)					
12					
Your subordinate's message:					
I hope this works for you.					
<table border="1" style="display: inline-table;"><tr><td style="padding: 5px 10px;">Next</td></tr></table>		Next			
Next					

* For participants in the role of the subordinate, "subordinate's" was replaced by "superior's".

Remaining Time:

18 minutes
40 seconds

Here you can see a summary of the different utilities of each aspect again:

Paid Vacation Days per Month	
Number of Paid Vacation Days per Month	Resulting Payout (in ECU)
0	80
1	60
2	40
3	20
4	0

Bonus Pay per Month	
Bonus Pay per Month (Share of Company Profit in %)	Resulting Payout (in ECU)
0%	120
3%	90
6%	60
9%	30
12%	0

Here you can make an offer to your [subordinate](#) by entering the number of paid vacation days per month as well as the bonus pay per month in the lower boxes.

Your offer:

Paid Vacation Days per Month

Bonus Pay per Month (Share of Company Profit in %)

On the next screen you will also have the possibility to send a message to your [subordinate](#).

Send offer

* For participants in the role of the subordinate, “subordinate’s” was replaced by “superior’s”.

Most of the messages on the following screen were adopted from O'Connor et al. (2005); based on Hilty and Carnevale, 1993). There were some messages added to represent the interest of acting according to the corporate guidelines.

	Remaining Time: 18 minutes 18 seconds
Here you can send one of the following messages to your subordinate by clicking the appropriate box. Please note that you can only send one message per offer. If you do not want to send a message, please choose the box "Send no message". Your message: - o Accept this or there will be consequences. - o This is the last offer. Take it or leave it. - o That's a deal. We're finished! - o Think about the interests of the company as a whole and give in. ¹ - o Think about the values of the company as a whole and give in. ¹ - o This offer is a gift. What more do you want? - o This is the very best offer possible. - o It is important that we are both happy with an agreement. ² - o I gave a little here, you give a little next time. - o I hope this works for you. - o I hope that this offer is good for you. - o Your offer sucks. - o Your needs and interests are important to me. ² - o Let's make offers that are good for us both. - o Let's find a creative solution that makes everyone happy. - o Let's try to find a solution that is acceptable for both of us. ² - o Let's try to consider both our needs and interests. - o Negotiating with you is a major waste of time. - o Come on, I conceded last time. - o You are engaging in unethical bargaining practices. - o You are too stubborn – make some concessions. - o You should try to see my point of view. - o You wouldn't see a good deal staring you in the face. - o Improve your offer if you want an agreement. - o There is hardly any time left to negotiate. - o We should both make some profit in the deal. ² - o We should work on having good personal relations for the future. - o We should try harder to find a solution which we can both take profit from. ¹ - o We should consider the needs and interests of the company as a whole. ¹ - o We should find a good solution for the company as a whole. ¹ - o We should try harder to find a deal that benefits us both. - o Let's hurry. - o Send no message. ¹ Send message	

¹ Messages were additionally included.

² Messages were modified compared to the original messages.

* For participants in the role of the subordinate, "subordinate's" was replaced by "superior's".

In the case of an agreement, participants in the role of the superior were provided with the following screen.

You have reached the following agreement with your subordinate:

Paid Vacation Days per Month	
Number of Paid Vacation Days per Month	Resulting Payout (in ECU)
2	40

Bonus Pay per Month	
Bonus Pay per Month (Share of Company Profit in %)	Resulting Payout (in ECU)
6	60

You will receive your overall payment (payment on the basis of the negotiation result + basic payment) at the end of the experiment.

Next

In the case of an agreement, participants in the role of the subordinate were provided with the following screen.

You have reached the following agreement with your superior:

Paid Vacation Days per Month	
Number of Paid Vacation Days per Month	Resulting Payout (in ECU)
2	60

Bonus Pay per Month	
Bonus Pay per Month (Share of Company Profit in %)	Resulting Payout (in ECU)
6	40

You will receive your overall payment (payment on the basis of the negotiation result + basic payment) at the end of the experiment.

Next

In the case of no agreement, participants in the role of the subordinate were provided with the following screen.

You have not reached an agreement with your superior. Therefore, your superior will now determine the levels of the two aspects of the incentive system without involving you.

Next

In the case of no agreement, participants in the role of the superior were provided with the following screen.

You have not reached an agreement with your subordinate. Therefore, please determine the levels of the two aspects of the incentive system.

Here you can see a summary of the different utilities of each aspect again:

Paid Vacation Days per Month	
Number of Paid Vacation Days per Month	Resulting Payout (in ECU)
0	80
1	60
2	40
3	20
4	0

Bonus Pay per Month	
Bonus Pay per Month (Share of Company Profit in %)	Resulting Payout (in ECU)
0%	120
3%	90
6%	60
9%	30
12%	0

Paid Vacation Days per Month

Bonus Pay per Month (Share of Company Profit in %)

Next

In the case of no agreement, participants in the role of the superior were then provided with the following screen.

You have determined the following levels of the two aspects of the incentive system:

Paid Vacation Days per Month	
Number of Paid Vacation Days per Month	Resulting Payout (in ECU)
0	80

Bonus Pay per Month	
Bonus Pay per Month (Share of Company Profit in %)	Resulting Payout (in ECU)
3	90

You will receive your overall payment (payment on the basis of your decision + basic payment) at the end of the experiment.

Next

In the case of no agreement, participants in the role of the subordinate were then provided with the following screen.

Your superior has determined the following levels of the two aspects of the incentive system:

Paid Vacation Days per Month	
Number of Paid Vacation Days per Month	Resulting Payout (in ECU)
0	0

Bonus Pay per Month	
Bonus Pay per Month (Share of Company Profit in %)	Resulting Payout (in ECU)
3	20

You will receive your overall payment (payment on the basis of your superior's decision + basic payment) at the end of the experiment.

Next

Desk number:

Individual goals were measured by the following items which were based on Beersma and De Dreu (2002).

Please indicate how strongly you agree with the following statements. There is no right or wrong answer. Therefore, simply indicate what reflects your attitude best.

I had to try to achieve as many points as possible for my group.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I was trying to achieve as many points as possible for my group.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I had to achieve as many points as possible for myself regardless of the amount of points my partner would receive.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I was particularly trying to achieve as many points as possible for myself.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I was particularly trying to benefit from my negotiation partner.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I had to try to achieve a good solution for the company as a whole.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I was trying to achieve a good solution for the company as a whole.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval

Participants' understanding of hierarchical roles in negotiations was measured by the following items.

Please indicate how strongly you agree with the following statements. There is no right or wrong answer. Therefore, simply indicate what reflects your attitude best.

Superiors are better at negotiating than subordinates.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
Superiors have a greater bargaining power than subordinates.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
Subordinates do not assert themselves in negotiations with superiors because they fear future consequences.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
Superiors use their bargaining power to place themselves in a better position than subordinates.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval

Next

Participants' organizational commitment was measured by the following items.

Please indicate how strongly you agree with the following statements. There is no right or wrong answer. Therefore, simply indicate what reflects your attitude best.

I am ready to make a bigger effort than expected so that UNODO is successful.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
In my opinion, my moral values and the values of UNODO are very similar.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I regard myself as someone who is strongly attached to their company.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I would like to work for a company like UNODO.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval

Next

Social value orientation was measured by the method of Murphy et al. (2011; see the following three screens).

Please make the following hypothetical decisions. Each participant decides independently of the other one. You have to decide between different distributions for you and another hypothetical person. Your decision has no influence on either your negotiation results or on your payment.

1	You receive:	85	85	85	85	85	85	85	85	85
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	85	76	68	59	50	41	33	24	15

2	You receive:	85	87	89	91	93	94	96	98	100
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	15	19	24	28	33	37	41	46	50

Next

Please make the following hypothetical decisions. Each participant decides independently of the other one. You have to decide between different distributions for you and another hypothetical person. Your decision has no influence on either your negotiation results or on your payment.

3	You receive:	50	54	59	63	68	72	76	81	85
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	100	98	96	94	93	91	89	87	85

4	You receive:	50	54	59	63	68	72	76	81	85
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	100	89	79	68	58	47	36	26	15

Next

Please make the following hypothetical decisions. Each participant decides independently of the other one. You have to decide between different distributions for you and another hypothetical person. Your decision has no influence on either your negotiation results or on your payment.

5	You receive:	100	94	88	81	75	69	63	56	50
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	50	56	63	69	75	81	88	94	100

6	You receive:	100	98	96	94	93	91	89	87	85
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	50	54	59	63	68	72	76	81	85

Next

Relational capital was measured by the following items which were adopted from Curhan et al. (2008).

Please indicate how strongly you agree with the following statements. There is no right or wrong answer. Therefore, simply indicate what reflects your attitude best.

How much did negotiating with your negotiation partner make you like him or her?	Not at all ☐ ☐ ☐ ☐ ☐ ☐ ☐ Absolutely
How much do you trust your negotiation partner?	Not at all ☐ ☐ ☐ ☐ ☐ ☐ ☐ Absolutely
How much do you think your negotiation partner likes you?	Not at all ☐ ☐ ☐ ☐ ☐ ☐ ☐ Absolutely

Next

Participants' general attitudes were measured by the following items.

Please indicate how strongly you agree with the following statements. There is no right or wrong answer. Therefore, simply indicate what reflects your attitude best.

I enjoyed the experiment.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
The explanations in this experiment were easy to understand.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I have the feeling that the experimenters influenced my responses.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I think that my negotiation partner is a fair-minded person.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I think the negotiation result is fair.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
The code of conduct influenced my decisions in the experiment.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I think UNODO's code of conduct is good.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I already have experience with negotiations.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval

Next

If participants reached an agreement in considerably less than the 20 minutes scheduled or considerably faster than other participants did, they had to do math calculations (see the following three screens).

In the following, you will solve some arithmetic problems as part of a cognitive test. You will be informed about the result of your cognitive test but it will not influence your payment. To achieve a good result, it is necessary that you concentrate fully.

Next

$$7 \times 57 =$$

You have no time left. You have solved 5 out of 6 arithmetic problems correctly. This is a very good performance.

Demography was measured as follows.

Demographic Questions

Please select your gender. ☐ male

☐ female

How old are you?

If you are studying or have studied,
please indicate your major subject.

Please enter your final high school grade.
(Please use a dot instead of a comma.)

How many months of real-life working experience in
private or public companies do you have?
(including internship time, but without school or college time)?

In the case of an agreement, participants in the role of the superior were provided with the following screen.

You and your subordinate have determined the following levels of the two aspects of the incentive system:

Number of paid vacation days per month:	2
Resulting payment:	40 ECU
Bonus pay per month (share of company profit in %):	6
Resulting payment:	60 ECU
Therefore, your overall payment amounts to:	
Basic payment:	60 ECU
+ Payment on the basis of paid vacation days per month:	40 ECU
+ Payment on the basis of bonus pay per month:	60 ECU
= Payment in ECU:	160 ECU
: Exchange rate (20 ECU = 1 Euro):	20 ECU/Euro
= Overall payment in Euro	8.00 Euro

You will receive your overall payment at the exit. Please mark the sealed envelope on your desk with your desk number, and submit the sealed envelope at the exit. Please wait until your desk number is called out.

* For participants who received the corporate guidelines, the text written in green was replaced by “Please put your signed code of conduct back into the envelope, mark your envelope with your desk number, and submit the envelope together with your code of conduct at the exit.”

In the case of an agreement, participants in the role of the subordinate were provided with the following screen.

You and your superior have determined the following levels of the two aspects of the incentive system:	
Number of paid vacation days per month:	2
Resulting payment:	60 ECU
Bonus pay per month (share of company profit in %):	6
Resulting payment:	40 ECU
Therefore, your overall payment amounts to:	
Basic payment:	60 ECU
+ Payment on the basis of paid vacation days per month:	60 ECU
+ Payment on the basis of bonus pay per month:	40 ECU
= Payment in ECU:	160 ECU
: Exchange rate (20 ECU = 1 Euro):	20 ECU/Euro
= Overall payment in Euro	8.00 Euro
You will receive your overall payment at the exit. Please mark the sealed envelope on your desk with your desk number, and submit the sealed envelope at the exit. Please wait until your desk number is called out.	
	

* For participants who received the corporate guidelines, the text written in green was replaced by "Please put your signed code of conduct back into the envelope, mark your envelope with your desk number, and submit the envelope together with your code of conduct at the exit."

In the case of no agreement, participants in the role of the superior were provided with the following screen.

You have determined the following levels of the two aspects of the incentive system:	
Number of paid vacation days per month:	0
Resulting payment:	80 ECU
Bonus pay per month (share of company profit in %):	3
Resulting payment:	90 ECU
Therefore, your overall payment amounts to:	
Basic payment:	60 ECU
+ Payment on the basis of paid vacation days per month:	80 ECU
+ Payment on the basis of bonus pay per month:	90 ECU
= Payment in ECU:	230 ECU
: Exchange rate (20 ECU = 1 Euro):	20 ECU/Euro
= Overall payment in Euro	11.50 Euro
You will receive your overall payment at the exit. Please mark the sealed envelope on your desk with your desk number, and submit the sealed envelope at the exit. Please wait until your desk number is called out.	
	

* For participants who received the corporate guidelines, the text written in green was replaced by "Please put your signed code of conduct back into the envelope, mark your envelope with your desk number, and submit the envelope together with your code of conduct at the exit."

In the case of no agreement, participants in the role of the subordinate were provided with the following screen.

Your superior has determined the following levels of the two aspects of the incentive system:

Number of paid vacation days per month:	0
Resulting payment:	0 ECU

Bonus pay per month (share of company profit in %):	3
Resulting payment:	20 ECU

Therefore, your overall payment amounts to:

Basic payment:	60 ECU
+ Payment on the basis of paid vacation days per month:	0 ECU
+ Payment on the basis of bonus pay per month:	20 ECU
= Payment in ECU:	80 ECU
: Exchange rate (20 ECU = 1 Euro):	20 ECU/Euro
= Overall payment in Euro	4.00 Euro

You will receive your overall payment at the exit. Please mark the sealed envelope on your desk with your desk number, and submit the sealed envelope at the exit. Please wait until your desk number is called out.

Next

* For participants who received the corporate guidelines, the text written in green was replaced by "Please put your signed code of conduct back into the envelope, mark your envelope with your desk number, and submit the envelope together with your code of conduct at the exit."

Thank you for participating in this experiment.

2.3 Research Paper 3 – Representing Future Generations in Today's Negotiations

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Abstract

The present generation including many organizations contributes to enduring environmental and social problems and is therefore morally obliged and/or legally required to promote sustainability to preserve options for the well-being of future generations. However, organizational decision makers often take a short-term perspective and neglect investments in intergenerational justice. Previous theoretical work has acknowledged the importance of representing future generations in today's decision-making processes to adopt a long-term perspective in order to promote intergenerational justice. In a laboratory experiment, we show that appointing representatives of future generations at the organizational level can foster investments in intergenerational justice. Although this outcome is more pronounced when aligned with individual incentives, it even persists for a representative who is monetarily penalized for advocating the interests of future generations.

Keywords: sustainability, intergenerational justice, negotiation, representative of future generations, Social Identity Theory

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2.3.1 Introduction

Due to persisting environmental and social problems and the fact that future generations do not have the opportunity to participate in or influence today's decisions by themselves (Ekeli, 2005, 2009; O'Neill, 2001; Padilla, 2002), present generations have a moral obligation to preserve options and possibilities for future generations to create the same well-being as present generations (Anderson, 2013), and thus to promote intergenerational justice (Wade-Benzoni and Plunkett Tost, 2009). Intergenerational justice guarantees that each generation has the right to be equipped with, to use, and to benefit from the same diversity of natural and cultural resources as previous generations (Summers and Smith, 2014). Therefore, it is argued that the interests of future generations should be directly brought to the negotiating table (Göpel, 2012) and that formal mechanisms to represent future generations in decision-making processes are needed to solve intergenerational conflicts. As organizations unquestioningly contribute to environmentally unsustainable outcomes through their use of natural resources (Shrivastava, 1995; Wade-Benzoni, 2002), and their generation of waste, polluted water and emissions, it is argued that organizations in particular have to extend their current primary economic focus to include ecological rationality (Shrivastava, 1995). However, this is not without problems as decision makers in organizations mostly take a short-term perspective and act on behalf of the organization's best interest within the time period of their tenure. In particular, decision makers often aim to reduce present costs rather than recognize that incurring costs for the benefit of future generations might be in the organization's best long-term interest (Wade-Benzoni, 1999). Therefore, the concept of a representative of future generations (similar to the establishment of institutions such as an "Ombudsman for Future Generations" in the political arena, see e.g., Göpel, 2012; Javór, 2006; Padilla, 2002; Tremmel, 2006) seems to be advantageous for organizations because it constitutes an independent representation of the interests of future generations in today's intra-organizational decision-making processes. Such a representative of future generations can potentially foster intergenerational justice (Javór, 2006) and the organization's long-term viability.

However, a representation of the interests of future generations brings about certain problems. As future generations cannot vote for their representatives, authorization and accountability are lacking (Ekeli, 2005, 2009; O'Neill, 2001). Furthermore, the interests of future generations cannot be assumed to be identical to those of the present generation (O'Neill, 2001; Wade-Benzoni, 2008). Hence, representatives are required to abstract from their actual interests (Bovenkerk, 2015) and to be committed to act in the best interest of future generations

(Howard, 2012). Thus, it is questionable as to how representatives might cope with such conflicting roles.

To our knowledge, laboratory research addressing the impact of a representative of future generations on intra-organizational negotiations has not yet been conducted. Indeed, literature exists on the resolution of environmental disputes via negotiation (Gray and Wondolleck, 2013). For example, Howard (2012) developed a mathematical model incorporating a societal agency that represents future generations. Furthermore, previous research revealed that appointing representatives of future generations in intergenerational sustainability dilemmas leads to resource allocations that favor future generations (Kamijo *et al.*, 2017; Shahrier *et al.*, 2017). As for the inclusion of representatives in negotiations, former studies have shown that the negotiation behavior of representatives depends on variables such as their social value orientation (SVO), anticipated rewards and punishments, and identity variables (Druckman, 2015). Conclusively, research in environmental economics (Sturm and Weimann, 2006) shows that people care about other generations' interests under certain circumstances (Chermak and Krause, 2002; Wade-Benzoni, 2002, 2008) and recognize their intergenerational responsibility (Fischer *et al.*, 2004). However, individual cooperation requires that people are convinced of the negative consequences for future generations in the case of non-cooperation and are incentivized for promoting future-oriented policies and technologies such as investments in climate protection (Milinski *et al.*, 2008).

Our research attempts to contribute to existing research in several aspects. First, we look at the effect of a person engaging in the role of a representative of future generations in an intra-organizational setting and aim to answer the question as to whether and how such a representative can drive negotiation results in a favorable direction regarding intergenerational justice. Second, we are interested in answering the question of whether a person assigned to the role of the representative of future generations voluntarily acts on behalf of future generations or whether this person needs monetary incentives to align her or his payoff with the enforcement of future generations' interests. Third, we concentrate on personality traits such as future orientation and SVO, because they were shown to influence cooperation in social dilemmas (Bogaert *et al.*, 2008; Joireman, 2005).

To address these research questions, a laboratory experiment was conducted. Negotiators in a dyad received an endowment and had to negotiate the amount that each of them would invest in intergenerational justice operationalized as intra-organizational investments in long-term emissions reductions. We analyzed three experimental conditions: While in the control treatment, two executive board members formed a negotiation dyad, in the other two treatments,

negotiation dyads comprised one representative of future generations and one executive board member. Role manipulations were accompanied by detailed role descriptions emphasizing expected role-congruent behavior. Furthermore, we manipulated the incentive system of the representative of future generations to analyze whether monetary incentives influenced the respective behavior in this role.

Our results show that appointing a representative of future generations leads to higher negotiated investments in intergenerational justice than if a representative of future generations is not appointed. This even holds for a representative of future generations who is financially penalized for achieving a positive investment and who, thus acts against her or his own financial interests. However, negotiated investments are even larger if the representative's incentive system financially rewards future-oriented behavior. These results highlight that detailed role definitions with precise descriptions of role-congruent behavior can encourage one to act on the behalf of unknown others. This is in line with theoretical predictions from Social Identity Theory (SIT; Tajfel and Turner, 1986), Self-Categorization Theory (SCT; Turner *et al.*, 1987) and Goal-Framing Theory (GFT; Lindenberg and Steg, 2007), which emphasize that even in the absence of a supportive incentive system, people can identify with future generations through the priming of normative and hedonic goals.

Our results can have substantial implications for achieving goals that promote intergenerational justice as a core concept of sustainability. Based on our findings, using representatives of future generations at the organizational level can foster long-term orientation and decisions that are better aligned with sustainable development goals.

2.3.2 Theoretical Background and Hypotheses

2.3.2.1 Influence of Role Assignments on Negotiation Outcomes

The role of a representative imposes a serious role conflict on individuals as they have to cope with both the group they represent and the negotiation partner at the same time (Benton and Druckman, 1974; Frey and Adams, 1972; Gray and Wondolleck, 2013). Previous research has shown that the negotiation behavior of representatives depends on several contextual and situational variables (Druckman, 1994, 2015; Reinders Folmer *et al.*, 2012). For instance, representatives express more competitive behavior if they are confronted with competitive goals or competitive incentives (Benton and Druckman, 1974; Blake and Mouton, 1961; Vidmar, 1971), while representatives display cooperation if they assume that their constituencies prefer such norms (Steinel *et al.*, 2009, 2010). In contrast, Enzle *et al.* (1992) show that representatives adjust their negotiation tactics to the situation in order to achieve good

outcomes for their constituencies. The aforementioned results seem to have in common that representatives try to achieve favorable outcomes for their constituencies, as they may experience a feeling of responsibility towards the group they are representing (Reinders Folmer *et al.*, 2012). This behavior can be explained by SIT (Tajfel and Turner, 1986) and SCT (Turner *et al.*, 1987). According to these theories, people obtain an important aspect of their self-concept from their classification into social groups (Tajfel and Turner, 1986; Van Kleef *et al.*, 2007). This identification corresponds to the perception of oneness with a group and enables people to find her- or himself in the social environment (Ashforth and Mael, 1989). As people have a natural desire to feel included in and accepted by their group (Baumeister and Leary, 1995; Van Kleef *et al.*, 2007), such an identification may lead to an attachment to and the motivation to succeed in one's role (Reitzes and Mutran, 2002). For a social category to become salient and therefore guide people's behavior (Haslam *et al.*, 2000), it has to reflect the social field and one's place within the social context subjectively and most meaningfully (Hogg and Terry, 2000). There are several empirical findings showing that even (assigned) group memberships determined on a random basis lead to actions to protect one's own group interests (Dawes and Messick, 2000; Wade-Benzoni and Plunkett Tost, 2009). This behavior particularly occurs if a shared social identity is made salient (Kramer *et al.*, 1993). Therefore, it can be argued that the assignment of certain roles accompanied by detailed role descriptions makes a certain group identity salient. As a consequence, assigned representatives might identify themselves as members of their associated groups and thus act on their behalf in negotiations. That is, subjects in the role of an executive board member might identify themselves with the company they represent and thus defend the company's interests in negotiations even when there are negative consequences involved for third parties such as the environment or future generations.

In contrast, the behavior of representatives of future generations is not that straightforward as individuals occupying this role have to defend the interests of future generations against the representatives of this generation and at the same time remain members of this present generation. Consequently, they are confronted with two distinct group memberships, that is, naturally belonging to the present generation and the assigned affiliation to future generations. This ambiguity might have an influence on the representative's negotiation behavior. In an experimental study, Breugh and Klimoski (1977) showed that representatives that are members of their constituencies were more committed to their constituencies' positions than representatives that were not part of their represented group.

However, previous research has also revealed that people can identify with future others without knowing or interacting with them (Wade-Benzoni, 2008). That is, if individuals

perceive their ingroup as comprising not only their own generation but also future generations, then intergenerational identification and the feeling of a common group identity increase (Wade-Benzoni, 2003; Wade-Benzoni and Plunkett Tost, 2009) leading to increased intergenerational justice (Wade-Benzoni and Plunkett Tost, 2009). Several factors have been identified that affect the extent of intergenerational identification such as social group identity, the motivation of the decision maker for self-enhancement, the integral needs of the decision maker, specificity with which future others are identified, decision framing, or relations to previous generations (Wade-Benzoni, 2003; Wade-Benzoni and Plunkett Tost, 2009). Thus, we suggest that appointing representatives of future generations and providing them with a detailed role description that makes a common group identity salient leads these individuals to identify with future generations and therefore to take their specific needs into account. Consequently, representatives of future generations are willing to give up some of their own economic outcome and increase investments in intergenerational justice:

H1. Negotiations between a representative of future generations and an executive board member will result in higher investments in intergenerational justice than negotiations between two executive board members.

2.3.2.2 Interaction between the Assigned Role and the Representative's Incentive System

As representatives are usually members of the group they represent, it can be assumed that their interests are compatible with those of their group. However, in the case of representatives not being members of the represented groups, it is possible that the representative's interests are not only different from those of the represented group but may even be aligned with the opposing group's interests (Aaldering *et al.*, 2013). In the case of such misaligned interests, representatives tend to achieve agreements that are beneficial to themselves, even at the expense of their constituencies (Bazerman *et al.*, 1992; Valley *et al.*, 1992).

Thus, executive board members whose monetary self-interests are aligned with the organization's interest of avoiding costs for investments in intergenerational justice are thought to defend the organization's interests. However, representatives of future generations might face a conflict of interest depending on how their (monetary) incentives are designed. That is, if the incentive system imposes financial costs on the representative by financially penalizing the representative when investment in intergenerational justice is increased, the feeling of belonging to the present generation is emphasized which might weaken the identification with future generations. In contrast, if the representative's incentive system financially rewards the

effort of increasing intergenerational justice, the role as a representative of future generations is accentuated which might strengthen the identification with future generations.

According to GFT (Lindenberg and Steg, 2007), human behavior is guided by one of three different goals. “Hedonic goals” aim to improve an individual’s feeling in a certain situation, “gain goals” increase an individual’s sensitivity to changes in their personal resources such as their monetary rewards, and “normative goals” prompt individuals to focus on the appropriateness of actions (Lindenberg and Steg, 2007; Steg *et al.*, 2014). In any situation, one of these goals is focal (i.e., the goal-frame) and influences cognitive processes and actions the most, while the other goals are in the background and complement the focal goal in the case of goal compatibility or question the focal goal in the case of goal incompatibility (Lindenberg and Steg, 2007; Steg *et al.*, 2014). Determining the focal goal is an unconscious process which depends on internal and external cues that automatically prime this goal (Lindenberg and Steg, 2013). In accordance with Steg *et al.* (2014), normative goals are strengthened when individuals endorse particular values activated by situational cues. In such instances, people focus more on the appropriateness of their behavior, such as, among other things, benefitting future generations, even if this behavior incurs personal costs.

With regard to representatives of future generations who have to bear costs to accomplish their role, we argue that the detailed role description emphasizes the normative goal of helping future generations while not prioritizing the gain goal. Furthermore, participants might assume a feeling of power by recognizing the powerlessness of future generations (Wade-Benzoni *et al.*, 2008). This power asymmetry stems from the fact that present generations have the unilateral decisional power on resource allocations across generations while future generations do not have the opportunity of reciprocating the actions of past generations (Li *et al.*, 2007). The related feeling of power activates a feeling of social responsibility (Greenberg, 1978) for taking future generations’ interests into account and thus tempers self-interest (Wade-Benzoni and Plunkett Tost, 2009). Previous research has shown that in modified ultimatum games, offers increase when recipients are completely powerless (Handgraaf *et al.*, 2008; Wade-Benzoni *et al.*, 2008). Therefore, we suggest that representatives of future generations might feel better if they act on behalf of future generations. In this case, the normative goal of helping future generations is supported by the hedonic goal of feeling good. Taken together, we hypothesize that even if representatives of future generations face a conflict between their monetary interests and their role, they will still identify with future generations and increase investments in intergenerational justice:

H2. Negotiations between a representative of future generations and an executive board member will result in higher investments in intergenerational justice than negotiations between two executive board members even if the incentive system of the representative of future generations financially penalizes higher investments.

However, if the representative's incentive system financially rewards the effort of negotiating higher investments in intergenerational justice by increasing monetary earnings, the representative's normative goal of helping future generations is not only supported by the hedonic goal of feeling good but also by the gain goal of realizing a financial profit. In this case, the identification with future generations is complemented by the other two goals so that these representatives are assumed to negotiate higher investments in intergenerational justice than representatives who have to bear costs when negotiating for these investments:

H3. Negotiations between a representative of future generations and an executive board member will result in higher investments in intergenerational justice if the incentive system of the representative of future generations financially rewards higher investments than if when the incentive system of the representative of future generations financially penalizes higher investments.

2.3.2.3 Influence of Future Orientation on Negotiation Outcomes

Investments in intergenerational justice can be interpreted as a social and intertemporal conflict as a present action is called for, which imposes immediate costs on individuals and generates collective benefits in the future (Joireman, 2005). Therefore, people's future orientation might have a considerable impact on the decision for investments in intergenerational justice. The concept of future orientation is represented by the construct of concern for future consequences (CFC) which "refers to the extent to which individuals consider the potential distant outcomes of their current behaviors and the extent to which they are influenced by these potential outcomes" (Strathman *et al.*, 1994, p. 743). That is, people showing a high CFC are more concerned with the future consequences of their behavior compared to people with a low CFC, who are more concerned with their immediate needs (Joireman *et al.*, 2008; Strathman *et al.*, 1994). Previous research has shown that compared to present-oriented people, future-oriented individuals exhibit more pro-environmental behaviors such as recycling (Ebreo and Vining, 2001; Lindsay and Strathman, 1997), the use of public transport (Joireman *et al.*, 2004), engaging in pro-environmental political activism (Joireman *et al.*, 2001), and other environmentally friendly behavior (Arnon and Carmi, 2014; Corral-Verdugo *et al.*, 2009).

Furthermore, individuals high in both CFC and environmentalism cooperate more in hypothetical and real resource dilemmas (Kortenkamp and Moore, 2006). A more detailed finding revealed that environmental behavior is only positively correlated with future orientation if this behavior is associated with a personal benefit (Carmi, 2013). Based on these results, we argue that future-oriented individuals are willing to invest more in intergenerational justice than present-oriented individuals:

H4. Irrespective of the assigned role, there will be a positive effect from negotiators' future orientation on the investments in intergenerational justice. That is, future-oriented negotiators will agree on higher investments in intergenerational justice than present-oriented negotiators.

2.3.2.4 Influence of Social Value Orientation on Negotiation Outcomes

Other factors which have been shown to influence negotiation and social dilemma outcomes are social motives (Joireman, 2005). Social motives can either be derived from individual differences or from the presentation of the situation (De Dreu *et al.*, 2000). With regard to individual differences, the leading concept is that of SVO, an approach which classifies people according to their concern for their own outcomes as well as for the outcomes of others (Messick and McClintock, 1968). While prosocial individuals are interested in maximizing joint outcomes and individualists only care about their own outcomes regardless of the outcome to others, competitors try to maximize the difference between their own and others' outcomes (e.g., Beggan *et al.*, 1988; Kuhlman and Marshello, 1975; Liebrand and Van Run, 1985).

According to previous research, SVO plays a role in negotiations since prosocials demand less and concede more (De Dreu and Van Lange, 1995), as well as show a higher concern for the negotiation partner's goals (Nauta *et al.*, 2002) when compared to individualists or competitors. In terms of negotiations led by representatives, Aaldering *et al.* (2013) showed that when representatives' interests were misaligned to those of their constituencies, then negotiation behavior became a function of SVO. While prosocials engaged in self-sacrificing behavior, prosocials only benefitted themselves.

As for pro-environmental behavior, two studies analyzing the effects of SVO and CFC failed to reveal that SVO has a significant effect on different forms of pro-environmental behavior such as commuting by using public transport (Joireman *et al.*, 2004) and pro-environmental political activism (Joireman *et al.*, 2001). In contrast, Gärling *et al.* (2003) showed that prosocial individuals' intention for pro-environmental behavior is more influenced by the awareness of personal environmental consequences, while prosocials were more

influenced by the awareness of collective environmental consequences. In line with this result, proselves are focused on personal costs associated with a pollution reduction program in the transportation sector and are more likely to oppose this program compared to prosocials who are more likely to support the program (Cameron *et al.*, 1998). Accordingly, we argue that prosocials might agree on higher investments in intergenerational justice irrespective of their assigned role and the experimental treatment:

H5. Irrespective of the assigned role, there will be a positive effect of negotiators' SVO on the investments in intergenerational justice. That is, prosocial negotiators will agree on higher investments in intergenerational justice compared to proselves.

2.3.3 Methods

2.3.3.1 Negotiation Task Structure and Manipulated Conditions

We used a computer-based role-play simulation of a two-party negotiation in which two parties forming a dyad had to reach an agreement on the investment in intergenerational justice materialized in an investment in long-term emissions reductions. For this purpose, each negotiator received an endowment of 200 experimental currency units (ECU) and the negotiation partners had to jointly decide which integer amount of the endowment each of them would invest to reduce negative consequences for the future. Participants were given the possibility to make offers to one another over the computer accompanied by prewritten messages.²⁶ A mutual agreement was reached if both negotiation partners successively made the same offer. If negotiation dyads did not reach an agreement within 10 minutes, the negotiation concluded with an impasse and the participants only received the show-up fee.

To test our hypotheses, we analyzed three experimental conditions: In the control treatment (NORFG-NOINC), two executive board members formed a negotiation dyad. In the two other conditions, a negotiation dyad consisted of one representative of future generations and one executive board member with manipulation of the representative's incentive system: In the RFG-NOINC treatment, the representative was financially penalized in order to increase the investment, i.e., the representative's payoff equaled the residual between the endowment and the negotiated investment, and in the RFG-INC treatment, the representative's payoff equaled

²⁶ The prewritten messages are inspired by the messages used by O'Connor *et al.* (2005; based on Hilty and Carnevale, 1993). Most of the original messages were replaced by new messages to represent the different interests that might play a role in the negotiation (see experimental instructions in the Appendix for Research Paper 3, p. 259).

the negotiated investment and thus financially rewarded the increase in the investment. The executive board member's payoff always corresponded to the residual between the endowment and the negotiated investment, that is, the executive board member was financially penalized for increasing the investment. In all conditions, the roles were randomly assigned to the participants. To make these roles more salient, we presented detailed role descriptions emphasizing which kind of behavior would lead to the fulfillment of one's role.²⁷ The role-dependent payoff functions were made common knowledge in the instructions.²⁸ Furthermore, while making or receiving an offer, participants saw the respective investment as well as their own and their negotiation partner's associated payoffs. We ensured that subjects understood the payoff consequences by providing them with all relevant information.²⁹

2.3.3.2 Experimental Procedure

Upon arrival in the laboratory, participants were randomly seated in individual cubicles behind a computer. We started with an Information Phase in which subjects were informed about the initial situation and the task. Participants learned that if nothing was changed, CO₂ emissions would not sufficiently be reduced until 2100, which would have severe negative consequences for the future. They could reduce these negative consequences by coming to an agreement in a joint decision on the investment in long-term emissions reductions. However, such an investment would impose costs on the company. Subjects were further told that their negotiated investment would be donated to one of two organizations, namely Climate without Borders or OroVerde which aim at sustaining the living conditions for future generations by initiating and financing projects on the compensation and avoidance of CO₂ emissions and on the protection of tropical forest. A description of both organizations was provided for all participants. In the control treatment, the organization was randomly selected. In the RFG treatments, the

²⁷ The role description for participants in the role of the representative of future generations is depicted in the experimental instructions in the Appendix for Research Paper 3 (first screenshot on p. 254). The role description for participants in the role of the executive board member is shown in the experimental instructions in the Appendix for Research Paper 3 (first screenshot on p. 256).

²⁸ The role-dependent payoff functions are depicted in the experimental instructions in the Appendix for Research Paper 3 (pp. 251, 252).

²⁹ The rationale for the payoff consequences for participants in the role of the representative of future generations is shown in the experimental instructions in the Appendix for Research Paper 3 (second paragraph in the screenshot on p. 255). The rationale for the payoff consequences for participants in the role of the executive board member is depicted in the experimental instructions in the Appendix for Research Paper 3 (second paragraph in the second screenshot on p. 256).

representatives of future generations could choose the organization through which they would increase their role commitment.

In the Learning Phase, subjects learned about the random assignment of roles, the anonymous matching of dyads, the payment mechanism and the negotiation task. They then answered several control questions, which had to be answered correctly to proceed.

The Negotiation Phase began with the random role assignment and the detailed role descriptions. Dyads had 10 minutes to negotiate. The negotiation concluded when dyads reached a mutual agreement or when the 10 minutes elapsed. At the end of the negotiation, participants answered follow-up questions, which included, among others, constructs for measuring SVO (adopted from Murphy *et al.*, 2011), and CFC (adopted from Joireman *et al.*, 2008; based on Strathman *et al.*, 1994). If dyads reached an agreement long before other dyads had come to an agreement or before the 10 minutes had elapsed, participants did math calculations disguised as a cognition test to make sure that the other dyads were not disturbed. Finally, based on their individual negotiation outcome plus the show-up fee of 80 ECU, subjects were paid at an exchange rate of 25 ECU equaling 1 Euro.

2.3.3.3 Data

The experiment was programmed in z-Tree (Fischbacher, 2007). Undergraduate students at a large German University participated in our experiment in February 2017. We collected data from 198 participants (99 dyads). Out of the 198 participants, three subjects and their dyads were excluded prior to the statistical analysis due to problems of understanding. Eliminating data from these subjects and their dyads led to 192 data points regarding individual negotiation outcomes and 96 data points for joint negotiation outcomes. In total, the three conditions – NORFG-NOINC, RFG-NOINC, and RFG-INC – included data from 64, 66, and 62 participants, respectively.

The average participant was 24.12 years old, 35.94 percent of which were female. The average subject earned 9.03 Euros for participating in the experiment which lasted less than one hour. Negotiated investments donated to the two organizations amounted to 368.00 Euros with 227.40 Euros for Climate without Borders and 140.60 Euros for OroVerde.

2.3.3.4 Analysis Methodology

We used generalized linear models with robust standard errors to analyze the negotiation outcomes of 96 dyads. Our dependent variable was the investment in a long-term emissions reduction negotiated by the negotiation dyads.

To test the influence of the presence of a representative of future generations, the independent variable was a treatment dummy variable for the presence of a representative of future generations (*Rep*; 0 = absent, 1 = present). The independent variable for analyzing the difference between investments in the control treatment and the RFG-NOINC treatment is a treatment dummy variable for the presence of a representative of future generations with an incentive system that financially penalizes investments (*Rep_NoInc*; 0 = absent, 1 = present). To examine the influence of the representative's incentive system, we used a treatment dummy variable for the presence of an incentive system that financially penalized or financially rewarded the investment in a long-term emissions reduction (*Rep_Inc*; 0 = financially penalizing, 1 = financially rewarding). Finally, we analyzed the influence of the participants' CFC and SVO derived from the post-negotiation questionnaire.

2.3.4 Results

2.3.4.1 Influence of the Presence of a Representative of Future Generations

The means of the investment in a long-term emissions reduction in the three treatments are depicted in Figure 2.4 (p. 225). The average investment in a long-term emissions reduction is lowest in the control treatment ($M = 10.1$; $SD = 10.87$). When both RFG treatments are compared, the average investment is higher in the RFG-INC treatment ($M = 87.0$; $SD = 34.86$) than in the RFG-NOINC treatment ($M = 45.7$; $SD = 39.31$).

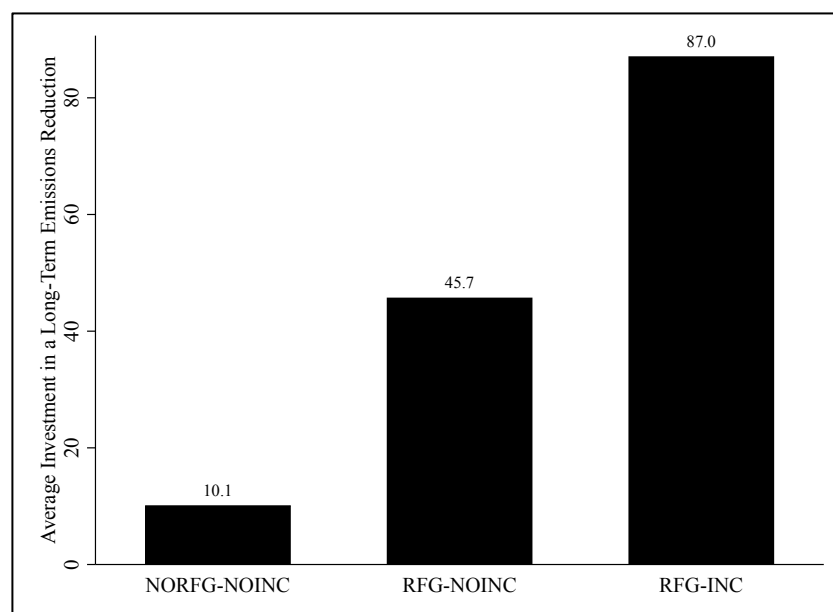


Figure 2.4: Average Investment in a Long-Term Emissions Reduction by Treatments

These results show that the investment in a long-term emissions reduction differs with regard to the presence of a representative of future generations and thus indicates a role effect. If there is a representative of future generations in a negotiation dyad, the investment increases substantially. Moreover, the investment in a long-term emissions reduction further increases if the representative's incentive system financially rewards the investment compared to when an investment is financially penalized. These findings provide preliminary support for our hypotheses. However, even in the RFG-INC treatment, the average investment in a long-term emissions reduction of 87.0 ECU ($SD = 34.86$) is smaller than half of the negotiators' endowment. This might be due to the idiosyncrasy of this treatment. While executive board members have to relinquish a share of their endowment and can therefore only lose money, representatives of future generations are rewarded according to the investment. These different frames might cause negotiation results below the equal split.

To test H1 and H2, we computed generalized linear models with robust standard errors for the investment in a long-term emissions reduction as the dependent variable in order to compare the control treatment with both RFG treatments (Model 1) and to compare the control treatment with the RFG-NOINC treatment (Model 2). Results are depicted in Table 2.12 (p. 227).

Consistent with our reasoning based on SIT and thus supporting H1, the investment in a long-term emissions reduction increases by 55.64 ECU (27.82% of the endowment) if a representative of future generations is present.³⁰ Thus, we find a significant role effect: If a representative of future generations participates in a negotiation affecting the interests of future generations, negotiation dyads agree on higher investments than if no such representative is present.

³⁰ We further performed nonparametric comparisons by applying Mann-Whitney (MW) tests. With respect to the presence of a representative of future generations, these tests yield similar results. The negotiated investment in the control treatment is significantly different from the negotiated investment in the pooled treatments, where a representative of future generations is present (NORFG-NOINC versus pooled RFG treatments: $p < 0.0001$, MW test, two-tailed). Moreover, pairwise comparisons between the control treatment and the separate RFG treatments show the following: The negotiated investment significantly differs between the control treatment and both the treatment where the representative of future generation is financially penalized for increasing the investment (NORFG-NOINC versus RFG-NOINC: $p = 0.0001$, MW test, two-tailed) and the treatment where the representative of future generations is financially rewarded for doing so (NORFG-NOINC versus RFG-INC: $p < 0.0001$, MW test, two-tailed).

Table 2.12: Influence of the Presence of a Representative of Future Generations

Independent Variables	Prediction	Dependent Variable: <i>Investment in a Long-Term Emissions Reduction</i>					
		Model 1		Model 2		Model 3	
<i>Intercept</i>		10.06 (1.90)	[< 0.001]	10.06 (1.91)	[< 0.001]	45.67 (6.79)	[< 0.001]
<i>Rep</i> ^a	H1 (+)	55.64 (5.62)	[< 0.001]				
<i>Rep_NoInc</i> ^b	H2 (+)			35.60 (7.05)	[< 0.001]		
<i>Rep_Inc</i> ^c	H3 (+)					41.37 (9.20)	[< 0.001]
<i>N</i>		96		65		64	

Notes. *p*-values in square brackets (two-tailed); robust standard errors in parentheses.

^a Dummy variable for the presence of a representative of future generations (0 = absent, 1 = present).

^b Dummy variable for the presence of a representative of future generations with an incentive system that financially penalizes the investment in a long-term emissions reduction (0 = absent, 1 = present).

^c Dummy variable for the presence of an incentive system that financially penalizes or financially rewards the investment in a long-term emissions reduction (0 = financially penalizing, 1 = financially rewarding).

Furthermore, H2 is supported. That is, even if the representative of future generations is financially penalized for investing, the investment in a long-term emissions reduction significantly increases by 35.6 ECU compared to the condition where no such representative being present.³¹ As this increase corresponds to 17.80 percent of the endowment, this finding indicates both that the assignment of the special role of the representative of future generations is sufficient to incorporate the interests of not yet existing generations and that additional monetary incentives are not the only motive to elicit role-congruent behavior. Rather, an individual in the role of the representative of future generations is even willing to sacrifice some of her or his own payoff in favor of an increased investment benefitting her or his constituency.

³¹ According to footnote 30, the MW test for comparing the control treatment with the treatment where the representative of future generations is financially penalized for increasing the investment yields a similar result (NORFG-NOINC versus RFG-NOINC: $p = 0.0001$, MW test, two-tailed).

2.3.4.2 Influence of the Representative's Incentive System

Next, we focus on the influence of the presence of an incentive system that rewards the representative's investment in a long-term emissions reduction. In the RFG-INC treatment, the representative is rewarded proportionally to the negotiated investment. Thereby, the representative of future generations has an incentive to negotiate an investment that is as high as possible. According to GFT, which states that gain goals can support normative goals, we expected that the presence of a representative of future generations who is financially rewarded for a higher negotiated investment will lead to a higher investment in a long-term emissions reduction than the presence of a representative of future generations whose investment is financially penalized. To test the corresponding H3, we again computed a generalized linear model with robust standard errors for investing in a long-term emissions reduction as the dependent variable in order to compare the two RFG treatments (see Model 3 in Table 2.12, p. 227).

Our data supports H3. Investment in a long-term emissions reduction is significantly higher if the representative's payoff increases with the negotiated investment compared to when it decreases with an increasing investment.³² The increase of the investment which amounts to 41.37 ECU corresponds to 20.69 percent of the endowment. As this increase is even larger than the increase of the investment in the case of a representative who is financially penalized for increasing the investment, this result is consistent with the reasoning that the interplay between the role of the representative of future generations and the incentive system prompts individuals in this role to engage in negotiating an even higher investment in a long-term emissions reduction.

2.3.4.3 Influence of Future Orientation

To shed further light on our main effects and to test H4, we included variables of the participants' future and present orientation in our generalized linear models. These traits were measured by employing the CFC construct (Joireman *et al.*, 2008) which includes a sub-factor for concern with future consequences, i.e. future orientation, and a sub-factor for concern with immediate consequences, i.e. present orientation. When testing the validity of the factor 'present orientation', we had to remove three items because their factor loadings were lower

³² The MW test for comparing the treatments where the representative of future generations is either financially penalized or financially rewarded for increasing the investment yields a similar result, as the difference in the negotiated investment between both treatments is significant (RFG-NOINC versus RFG-INC: $p = 0.0005$, MW test, two-tailed).

than 0.5. Cronbach's α was 0.69 for future orientation and 0.72 for present orientation. The factor values deduced from a confirmatory factor analysis were included in the analysis as follows: We examined the influence of future and present orientation on the investment in a long-term emissions reduction within each of the three treatments. In the generalized linear model for the control treatment (Model 1), we integrated the executive board members' composite future orientation (*Comp_EBM_Future*), i.e. the mean between both executive board members' factor values for their future orientation, and the executive board members' composite present orientation (*Comp_EBM_Present*), i.e. the mean between both executive board members' factor values for their present orientation. In the generalized linear models for the RFG treatments (Models 2 and 3), we inserted four control variables, respectively: the future orientation of both the representative of future generations and of the executive board member as well as the present orientation of both negotiation partners. The results from all three models are shown in Table 2.13 (p. 230).

Model 1 in Table 2.13 (p. 230) indicates that neither the executive board members' composite future orientation nor their composite present orientation have a significant effect on the negotiated investment in a long-term emissions reduction. As for the treatment with an incentive system that financially penalizes the representative of future generations for increases in the investment (Model 2), an increase in the representative's future orientation leads to an increase of the negotiated amount by 20.42 ECU which corresponds to 10.21 percent of the endowment. Measures of future or present orientation for all other role effects in Model 2 are not significant. Finally, Model 3 shows that the present orientation of the representative with an incentive system financially rewarding the investment has a significantly negative effect on the negotiated investment. Furthermore, the executive board member's future orientation has a significantly positive effect on the negotiated investment. The influences of the representative's present orientation with -15.75 ECU and the executive board's future orientation with 16.39 ECU offset each other in quantitative terms. All other control variables, especially the future orientation of the representative with an incentive system that financially rewards the investment, have no significant impact.

Table 2.13: Influence of Future and Present Orientation

Independent Variables	Prediction	Dependent Variable: <i>Investment in a Long-Term Emissions Reduction</i>					
		Model 1		Model 2		Model 3	
<i>Intercept</i>		9.72 (1.82)	[< 0.001]	46.37 (5.95)	[< 0.001]	91.41 (6.48)	[< 0.001]
<i>Comp_EBM_Future</i> ^a	H4 (+)	-5.33 (4.68)	[0.254]				
<i>Comp_EBM_Present</i> ^a		-7.12 (4.57)	[0.119]				
<i>RFG_Future</i> ^b	H4 (+)			20.42 (6.43)	[0.001]	-12.10 (11.83)	[0.306]
<i>RFG_Present</i> ^c				-1.12 (6.48)	[0.863]	-15.75 (7.24)	[0.030]
<i>EBM_Future</i> ^b	H4 (+)			-4.92 (9.55)	[0.606]	16.39 (8.06)	[0.042]
<i>EBM_Present</i> ^c				-1.05 (6.81)	[0.878]	9.19 (11.36)	[0.418]
<i>N</i>		32		33		31	

Notes. *p*-values in square brackets (two-tailed); robust standard errors in parentheses.

^a Composite value of both executive board members' factor values for their future orientation (*Comp_EBM_Future*) and for their present orientation (*Comp_EBM_Present*).

^b Factor values for the future orientation of the representative of future generations (*RFG_Future*) and of the executive board member (*EBM_Future*).

^c Factor values for the present orientation of the representative of future generations (*RFG_Present*) and of the executive board member (*EBM_Present*).

These results indicate that in the absence of an incentive system that financially rewards the investment, the representative's future orientation plays a crucial role in explaining negotiation results. By contrast, the representative's future orientation does not have a significant impact on negotiation results in the presence of such an incentive system. Taken together, these results provide evidence that even though representatives of future generations always lead to higher investments that will favor future generations, the motives differ substantially depending on whether an incentive system is present. As for the executive board member, results are also mixed. Consequently, we find only partial support for H4.

2.3.4.4 Influence of Social Value Orientation

In H5, we hypothesized a positive effect of the negotiators' SVO on the investment in a long-term emissions reduction. SVO was measured using the method from Murphy *et al.* (2011). The analysis of the influence of SVO was organized as follows: First, we examined the influence of the executive board members' composite SVO, i.e. the mean between both executive board members' SVOs on the investment in a long-term emissions reduction in the control treatment (Model 1). Second, we analyzed whether the influence of the negotiation partners' SVO differs in the RFG treatments (Models 2 and 3). Results concerning all three models are shown in Table 2.14 (p. 231).

Table 2.14: Influence of Social Value Orientation

Independent Variables	Prediction	Dependent Variable: <i>Investment in a Long-Term Emissions Reduction</i>					
		Model 1		Model 2		Model 3	
<i>Intercept</i>		3.50 (2.46)	[0.155]	5.50 (10.46)	[0.599]	45.13 (21.14)	[0.033]
<i>Comp_EBM_SVO</i> ^a	H5 (+)	0.24 (0.10)	[0.014]				
<i>RFG_SVO</i> ^b	H5 (+)			1.19 (0.39)	[0.002]	0.14 (0.47)	[0.764]
<i>EBM_SVO</i> ^c	H5 (+)			0.48 (0.38)	[0.200]	1.46 (0.53)	[0.006]
<i>N</i>		32		33		31	

Notes. *p*-values in square brackets (two-tailed); robust standard errors in parentheses.

^a The executive board members' (EBM) composite social value orientation (SVO), i.e. the mean between both executive board members' SVOs.

^b The social value orientation (SVO) of the representative of future generations (RFG).

^c The executive board member's (EBM) social value orientation (SVO).

Model 1 in Table 2.14 (p. 231) indicates that the executive board members' composite SVO has a significantly positive effect on the negotiated investment in a long-term emissions reduction. In the case of the treatment with an incentive system that financially penalizes the representative of future generations for increases in the investment (Model 2), the negotiated investment significantly goes up if the representative's SVO increases, whereas the executive board member's SVO has no significant effect. Finally, Model 3 shows that an increase in the

executive board member's SVO leads to a significant increase of the negotiated investment. However, the SVO of the representative with an incentive system that financially rewards the investment does not significantly affect the negotiated investment. Thus, we conclude that the individuals' SVO have significant effects on negotiation results affecting future generations. In the absence of an incentive system financially rewarding the investment, the representative's SVO plays a crucial role in explaining the negotiation results. By contrast, the representative's SVO does not have a significant impact on the negotiation results in the presence of such an incentive system. Furthermore, the executive board member's SVO only affects the investment when no representative of future generations is present or when her or his earnings are opposed to those of the representative. These findings partially support H5.

2.3.4.5 Supplementary Analyses

Mutual Transparency of Incentive Systems

An aspect that might be crucial to our experimental design is that both negotiation partners have full information about the partner's payoff. This fact is especially critical in the RFG-INC treatment where the payoffs of both negotiation partners are opposed to one another. One might argue that this knowledge leads to negotiation impasses because both parties are not willing to concede in favor of the opponent. Hence, even if executive board members are prone to invest in a long-term emissions reduction at their own costs, they might restrain from doing so due to the knowledge that her or his negotiation partner thereby earns more.

Contrary to this argument, such full information can also provide the opportunity to detect fair agreements (Felsenthal, 1977). As people make interpersonal comparisons of payoffs (Roth and Malouf, 1979) and prefer to achieve fair outcomes in social exchange (Adams, 1965; Felsenthal, 1977), full information on the partner's payoff structure might lead to agreements on equal splits. This reasoning has been supported by previous empirical research (Crott and Möntmann, 1973; Fouraker and Siegel, 1963; Komorita and Kravitz, 1979; Messé, 1971; Rapoport *et al.*, 1977, 1976; Rapoport and Perner, 1974; Roth and Malouf, 1979; Siegel and Fouraker, 1960).

Based on the former remarks, we expected negotiation impasses to occur more frequently under the condition where payoffs of both negotiation partners were opposed to one another. Indeed, out of the 96 negotiation dyads, only three dyads (3.13%) did not reach an agreement. All these three dyads belong to the RFG-INC treatment, i.e. where the negotiation partners' incentive systems were misaligned.

Along with the latter reasoning, we argued that in the aforementioned treatment, differences between both negotiation partners' payoffs would not significantly differ from zero. A two-sided t -test comparing the mean difference between negotiation partners' payoffs in the RFG-INC treatment reveals that the null hypothesis cannot be ruled out ($M = -6.58$, $SD = 38.89$, $p = 0.3537$, $N = 31$).

Overall, we find some support for both previous results. That is, full information on the negotiation partner's payoff structure might lead to more impasses. However, if an agreement is reached, negotiation partners' payoffs do not significantly differ from each another.

Number of Offers Sent

Furthermore, as the negotiation partners' goals were thought to differ due to the different roles they occupied in the RFG treatments, we expected it to be more difficult to reach an agreement under these treatments. Moreover, it might be most difficult to come to an agreement when the negotiation partners' monetary interests are misaligned with one another because both parties might not be willing to concede in favor of the opponent. Therefore, we analyzed the number of offers sent as a proxy for the rigidity of the negotiation process. In the control treatment, the RFG-NOINC treatment, and the RFG-INC treatment, on average negotiation dyads send 1.97 offers ($SD = 1.53$, $N = 32$), 3.58 offers ($SD = 2.00$, $N = 33$), and 6.06 offers ($SD = 4.84$, $N = 31$), respectively. To analyze differences in the offers sent between treatments, we employed generalized linear models with robust standard errors with the number of offers sent as the dependent variable and the dummy variables described above as independent variables. Comparing the control treatment with both RFG treatments, the number of offers sent significantly increases when a representative of future generations takes part in the negotiation ($b = 2.81$, robust $SE = 0.55$, $p < 0.001$, $N = 96$). Even if the representative's payoff is equal to the executive board member's payoff as is the case in the RFG-NOINC treatment, negotiation partners send significantly more offers than in the control treatment ($b = 1.61$, robust $SE = 0.44$, $p < 0.001$, $N = 65$). This difference shows that the representative of future generations is an advocate for the interests of future generations. Finally, the comparison of both RFG treatments reveals that when the negotiation partners' payoffs are misaligned in the RFG-INC treatment, significantly more offers are sent compared to when the negotiation partners' payoffs are

aligned in the RFG-NOINC treatment ($b = 2.49$, robust $SE = 0.93$, $p = 0.007$, $N = 64$).³³ Overall, we find that the rigidity of the negotiations increases when a representative is appointed and that most negotiations require even more information exchange when the representative's payoff is misaligned with the executive board member's incentive system.

2.3.5 Discussion and Conclusion

In this paper, we examined the effectiveness of a person acting as a representative of future generations and the influence of this person's incentive system on intra-organizational negotiations on investments in intergenerational justice. Based on SIT, SCT, and GFT, our experimental results emphasize that the employment of a representative of future generations leads to a strong increase in investments in intergenerational justice. We find the assignment of the role of the representative of future generations to be effective even if there is an incentive system that financially penalizes the investment in intergenerational justice. Hence, the pure role assignment and the provision of a detailed role description already improve negotiation results affecting the future. Furthermore, negotiation results are even more favorable for future generations if the representative has a financial incentive to increase those investments. Interestingly, our results show that an incentive system shifts the motivation of the representative from acting in favor of the future (future orientation) to acting on one's own behalf (present orientation). In addition, we show that in the presence of a representative of future generations, the influence of personality traits such as the negotiators' future orientation and SVO on negotiation results affecting the future's interests depends on the representative's incentive system. The representatives' future orientation and SVO only have a significant impact when the incentive system financially penalizes the investment in intergenerational justice, while the executive board members' future orientation and SVO only influence

³³ MW tests yield similar results. The number of offers sent in the control treatment is significantly different from the number of offers sent in the pooled treatments, where a representative of future generations is present (NORFG-NOINC versus pooled RFG treatments: $p < 0.0001$, MW test, two-tailed). Furthermore, pairwise comparisons between the control treatment and the separate RFG treatments show the following: The number of offers sent significantly differs between the control treatment and both the treatment where the representative of future generation is financially penalized for increasing the investment (NORFG-NOINC versus RFG-NOINC: $p = 0.0003$, MW test, two-tailed) and the treatment where the representative of future generations is financially rewarded for doing so (NORFG-NOINC versus RFG-INC: $p < 0.0001$, MW test, two-tailed). Finally, the difference in the number of offers sent between the treatments where the representative of future generations is either financially penalized or financially rewarded for increasing the investment is significant (RFG-NOINC versus RFG-INC: $p = 0.0520$, MW test, two-tailed).

negotiation outcomes when her or his earnings are misaligned with the representatives' incentive system. Thus, our findings are particularly noteworthy in that they contribute to the understanding of the influence of such role assignments and associated role descriptions on negotiations affecting future generations' interests.

Our results have several practical implications. First, organizations have to be aware of the power of role assignments and detailed role descriptions and should take these tools into account if they attempt to consider future consequences in greater detail. As shown by our experiment, giving one negotiation partner the role of the representative of future generations can improve negotiation results in terms of the incorporation of future interests in today's negotiations. This does not only benefit future generations but can also safeguard the organizations' survival. Second, providing the representative with an incentive system that financially rewards her or his constituency-supportive behavior strengthens the outcome in favor of future generations even more. However, there might be an important tradeoff as the motivation (and therefore the trustworthiness) of the representative shifts from the pure motive of promoting intergenerational justice to more selfish monetary motives. In real-world negotiations, such perceptions of a representative could influence the negotiation outcomes. Third, when no financial incentives are provided, organizations should take potential representatives' personality traits into account. That is, in the absence of financial incentives, the representatives' future orientation and SVO have a significantly positive impact on negotiated investments. This latter result is in line with previous research conducted by Aaldering *et al.* (2013) who found prosocial representatives to be more content to sacrifice their self-interests in favor of their constituency. Therefore, having knowledge about the potential negotiators' personality traits is a valuable tool to carefully choose representatives that will best defend their constituencies' interests. Fourth, our results indicate that representatives of future generations can make long-term (future) orientation more salient. Within organizations, powerful representatives could have the role of limiting long-term negative consequences of firm behavior and could promote costly but promising technological developments and help to overcome organizational inertia (Hannan and Freeman, 1984).

Our work is subject to several limitations, which might be addressed in future research. First, we do not consider for the uncertainty associated with future generations' interests as we precisely prescribed role-congruent behavior by role descriptions. In real-world negotiations, one problem of accurately incorporating future generations' interests in today's decisions is the difficulty of predicting the effects and risks of today's decisions on future generations' living conditions (Bovenkerk, 2015). Nevertheless, it is important that present generations are aware

of these risks of harm (Ekeli, 2007). Accordingly, future research should examine the influence of uncertainty on the negotiation behavior in negotiations affecting future generations' interests. Second, we provided participants with an unearned endowment which they could invest to benefit future generations. Thus, participants did not have to concede the money they had earned. Even if this assumption is realistic in that present negotiations do not always involve the contribution of their own earnings, it is indeed very possible that negotiations on specific taxes aiming at protecting the environment might call for such contributions. As previous research has shown that bargaining over earned wealth elicits more self-interest behavior (Cherry *et al.*, 2002), it would be worth analyzing how abandoning earned money would influence negotiation behavior, particularly that of representatives of future generations. Another promising research avenue is to further investigate the endowment of the negotiation partners with power. As our experimental study assumed a balance of power between the negotiation partners, i.e. both partners had to agree to the same investment, it would be worth analyzing power asymmetries. In particular, in those situations where long-term consequences are considered, representatives of future generations might be equipped with less power than representatives of the present. Finally, we used investments in long-term emissions reductions as a metric for investments in intergenerational justice. However, organizations cause several other environmental outcomes that have long-term consequences. For instance, organizations are responsible for the declining of biodiversity (Shrivastava, 1995). Therefore, it would be useful to investigate whether and how a representative of future generations could influence negotiation outcomes that refer to other harmful consequences for the future. While this study focuses on environmental sustainability, the concept of a specific representative could also be applied to issues of social sustainability such as the promotion of equal job opportunities in organizations.

In conclusion, our study shows that the appointment of a representative of future generations at the organizational level yields negotiation outcomes that favor the interests of future generations. This effect even arises when such a representative is not monetarily incentivized. Thus, the appointment of a representative of future generations in today's negotiations is a useful mechanism for organizations in order to promote intergenerational justice.

References for Research Paper 3

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Appendix of Research Paper 3

Experimental Instructions

Notes:

The instructions have been translated from the German; the original instructions are available upon request.

Abbreviations for the three experimental treatments:

- NORFG-NOINC: Two executive board members formed a negotiation dyad (= control treatment).
- RFG-NOINC: Negotiation dyads consisted of one representative of future generations and one executive board member. The representative was financially penalized in order to increase the investment in a long-term emissions reduction.
- RFG-INC: Negotiation dyads consisted of one representative of future generations and one executive board member. The representative was financially rewarded in order to increase the investment in a long-term emissions reduction.

Text written in green: Text written in green indicates differences between the three treatments.

Text written in red: In half of the dyads, the participant in the role of the executive board member had to make the first offer, whereas in the other half of the dyads it was the participant in the role of the representative of future generations who made the first offer. In the screens presented, the participant in the role of the executive board member makes the first offer. Below the respective screens, the text in the case of the participant in the role of the representative of future generations making the first offer is shown.

Text written in blue: For the negotiation, only the screens for the participant in the role of the representative of future generations in the RFG-INC treatment are shown. Below the respective screens, differences in the text for participants in the role of the representative of future generations in the RFG-NOINC treatment, and differences in the text for participants in the role of the executive board member are shown.

The goal of this study is to find out how people conduct negotiations in their workplace. The experiment consists of several parts:

- 1) A section with INFORMATION about your today's task.
- 2) A section where you will LEARN something about the composition of your payment.
- 3) A section where you will conduct a NEGOTIATION.
- 4) A final questionnaire.

[Click here to get started.](#)

Participants in the RFG treatments were provided with the following screen.

INFORMATION: Initial Situation

In preparation for this experiment, please imagine that a person who is an executive board member of a medium-sized company is making decisions together with a person who is a representative of future generations. The representative of future generations has the task of representing the interests of (not yet existent) future generations in decisions which are going to have consequences for the future.

You have just learned that the company will presumably not be able to sufficiently reduce its CO₂ emissions by 2100, unless it invests in long-term emissions reductions.

High investments would have strong negative consequences for the company. Insufficient environmental protection will have strong negative consequences for the quality of life of future generations.

Now, you should negotiate the investment in a long-term emissions reduction with another person.

You will negotiate an amount of investment with your partner, which will be donated to one of two organizations after today's session. The two organizations supporting long-term emission reduction will be presented in the following. You will also find printouts with descriptions of the two organizations on your desk.

[Next](#)

Participants in the NORFG-NOINC treatment were provided with the following screen.

INFORMATION: Initial Situation

In preparation for this experiment, please imagine that two persons who are executive board members of a medium-sized company are making decisions together.

You have just learned that the company will presumably not be able to sufficiently reduce its CO₂ emissions by 2100, unless it invests in long-term emissions reductions.

High investments would have strong negative consequences for the company. Insufficient environmental protection will have strong negative consequences for the quality of life of future generations.

Now, you should negotiate the investment in a long-term emissions reduction with another person.

You will negotiate an amount of investment with your partner, which will be donated to one of two organizations after today's session. The two organizations supporting long-term emission reduction will be presented in the following. You will also find printouts with descriptions of the two organizations on your desk.

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Climate without Borders

Our Vision

Our vision is that of a “low-emission society” which protects our climate and natural resources. In the process of fulfilling our vision, our name is simultaneously our concept. We follow a “climate protection worldwide and at home” approach through the following steps:

- Reduction of energy and resource consumption
- Use of renewable energy sources
- Compensation of unavoidable CO₂ emissions

“The climate change is threatening our environment and the development opportunities of millions of people in the poorest countries of the world. Our high CO₂-emissions come at their expense. We are starting today to change this situation and we welcome your support!”

Consultancy & Information Services

With an extensive offer of information and consultancy services as well as our own compensation projects, our team supports individuals and companies in the process of sustainably minimizing their own CO₂ footprints. We can help you to live active climate protection. On our website and at various events, we provide information about the necessity of personally contributing to climate protection, and we offer the possibility of compensating unavoidable CO₂ emissions through our certified climate protection projects.

We help companies to manage the challenges of climate change and to simultaneously stand out from other companies and have added value for their customers. With our interdisciplinary team, we are able to offer one-shop services, right up to climate neutralization.

Of course, this includes specialist consultancy services for the calculation and the reduction of the CO₂ balance as well as issuing CO₂ reduction certificates out of our own climate protection projects for the compensation of unavoidable emissions.

Development of CO₂-Compensation Projects

Together with local partners, Climate without Borders implements climate protection projects in developing countries. With these renewable energy and energy efficiency projects we achieve sustainable CO₂ savings while at the same time contributing significantly to the improvement of the local population’s quality of life. The possibility of reducing both CO₂ emissions and poverty in one go motivates us to invest our time and our know-how in these projects.

Next

OroVerde (= Green Gold)Work Content

Since its foundation, OroVerde has been initiating, drafting, and financially supporting protection projects. Our projects are implemented by selected, reliable partners on-site. Professionals from OroVerde accompany the projects and monitor the use of financial means. Core aspects of the projects: reforestation, environmental education, introduction of forest-friendly economic systems, establishment of protected areas - in every project: capacity building.

In Germany, the focus is on environmental education and environmental information on the topic of tropical forests as well as the promotion of information exchange between nature protection organizations, economy, science and politics. Actions are carried out to help raise awareness in Germany for the topic of tropical forests.

What we do. And how we do it.**In our projects to protect rainforests:**

We initiate and support pilot projects with a model character. Worldwide acquired experience and a knowledge of the population on-site are the basis for sound concepts with precise, goal-oriented measures. The majority of the projects are role models for other regions.

We move practical experience into policy. And we do this on different levels: from local policy up to solution approaches for entire regions and global policy within the framework of international conventions.

We intensively collaborate with people on-site. Together with our partners, we establish what they need to develop solutions. We are always willing to listen. We assist in the initial stages of projects. And we assist our project partners until projects can operate on their own and are firmly established in the population's awareness. The foundation of our work is our **respect** for the people we work with on-site, who are from different cultures and speak different languages. It is a challenge to use the same language and also mean the same thing. But this process is enriching – for both parties.

We set clear goals. Only these goals enable reasonable monitoring. Together with local partners we set milestones for the path towards a goal. And we develop criteria for achieving it. In doing so, we are aware of the fact that this is a dynamic process. It is essential to continuously keep in mind the process and the goal, but also to be flexible if obstacles come our way and other new pathways and opportunities arise. It is a mutual process. What is important to us? **Fairness. And reliability.**

Our local partners are dedicated. They have the same dreams and visions that we have, which is the very essence of why we hold our partners in high esteem. For that very reason and for the fact that they do not give up, even when the going gets tough. We are grateful that we are *allowed* to help.

A rectangular button with a 3D effect, containing the word "Next" in a sans-serif font.

Participants in the RFG treatments were provided with the following screen.

LEARNING PROCESS: Your Today's Task

In today's task, you will conduct a negotiation with another person. For this purpose, you will either take on the role of the executive board member or the role of the representative of future generations. Role assignment will occur randomly. At any time, one executive board member will negotiate with one representative of future generations. You will never find out who the other person is, because the interaction will exclusively take place via the computer. Furthermore, your partner will not find out who you are. Your payment will depend on the result of the negotiation that you and your partner reach. In detail:

1. You will be assigned to a team. Each team consists of two persons – you and your partner. The role of the executive board member will be assigned to one of you. The respective partner will take on the role of the representative of future generations. The roles will not change during the experiment.
2. The person who is assigned the role of the representative of future generations will choose the organization that the negotiated amount of investment is going to be donated to after today's session.
3. You and your partner will conduct a negotiation on the investment in a long-term emissions reduction.
4. Your payment will be calculated based on the negotiation result. Your payment will be paid out to you at the end of today's session.

A rectangular button with a light gray background and a thin black border. The word "Next" is centered in a black, sans-serif font.

Participants in the NORFG-NOINC treatment were provided with the following screen.

LEARNING PROCESS: Your Today's Task

In today's task, you will conduct a negotiation with another person. For this purpose, you will either take on the role of the executive board member A or the role of the executive board member B. Role assignment will occur randomly. At any time, one executive board member A will negotiate with one executive board member B. You will never find out who the other person is, because the interaction will exclusively take place via the computer. Furthermore, your partner will not find out who you are. Your payment will depend on the result of the negotiation that you and your partner reach. In detail:

1. You will be assigned to a team. Each team consists of two persons – you and your partner. The role of the executive board member A will be assigned to one of you. The respective partner will take on the role of the executive board member B. The roles will not change during the experiment.
2. The organization that the negotiated amount of investment is going to be donated to after today's session is randomly chosen.
3. You and your partner will conduct a negotiation on the investment in a long-term emissions reduction.
4. Your payment will be calculated based on the negotiation result. Your payment will be paid out to you at the end of today's session.

A rectangular button with a light gray background and a thin black border. The word "Next" is centered in a black, sans-serif font.

Participants in the RFG-INC treatment were provided with the following screen.

LEARNING PROCESS: Composition of Your Payment

Your payment as well as the payment of your partner will depend on both the negotiation result that you and your partner negotiate and on your assigned role (executive board member or representative of future generations). You and your partner will each receive 200 ECU (= Experimental Currency Units), of which any integer amount between 0 ECU and 200 ECU can be invested. However, both you and your partner can only invest the same amount on which you both agree during the negotiation process.

If you and your partner **reach an agreement** concerning the amount of investment, this amount will be donated to one of the organizations presented. The payment of the person assigned to the role of the representative of future generations will be equivalent to the amount of investment, while the person assigned to the role of the executive board member will receive the differential amount between the 200 ECU and the amount of investment. Thus, in the case of an agreement, the payments of the representative of future generations and of the executive board member, based on the negotiation result, will be as follows:

Payment of the representative of future generations based on the negotiation result
= amount of investment

Payment of the executive board member based on the negotiation result
= 200 ECU – amount of investment

If you and your partner **do not reach an agreement** concerning the amount of investment, the negotiation has failed and the 200 ECU will be forfeited. Thus, in the case of no agreement, both your and your partner's payment, based on the negotiation result, will be as follows:

Payment based on the negotiation result = 0 ECU

In addition to the payment depending on the negotiation result, each of you will receive a basic payment in the amount of 80 ECU.

At the end of the experiment the ECU will be converted into Euros at an **exchange rate of 25 ECU = 1 Euro**.

**I have understood the
details of payment.**

Participants in the NORFG-NOINC and in the RFG-NOINC treatment were provided with the following screen.

LEARNING PROCESS: Composition of Your Payment

Your payment as well as the payment of your partner will depend on both the negotiation result that you and your partner negotiate and on your assigned role (*executive board member or representative of future generations*). You and your partner will each receive 200 ECU (= Experimental Currency Units), of which any integer amount between 0 ECU and 200 ECU can be invested. However, both you and your partner can only invest the same amount on which you both agree during the negotiation process.

If you and your partner **reach an agreement** concerning the amount of investment, this amount will be donated to one of the organizations presented, while you and your partner will receive the differential amount between the 200 ECU and the amount of investment. Thus, in the case of an agreement, your and your partner's payment, based on the negotiation result, will be as follows:

Payment based on the negotiation result = 200 ECU – amount of investment

If you and your partner **do not reach an agreement** concerning the amount of investment, the negotiation has failed and the 200 ECU will be forfeited. Thus, in the case of no agreement, both your and your partner's payment, based on the negotiation result, will be as follows:

Payment based on the negotiation result = 0 ECU

In addition to the payment depending on the negotiation result, each of you will receive a basic payment in the amount of 80 ECU.

At the end of the experiment the ECU will be converted into Euros at an **exchange rate of 25 ECU = 1 Euro**.

I have understood the details of payment.

** For participants in the NORFG-NOINC treatment, the text inside the parentheses was replaced by “executive board member A or executive board member B”.*

LEARNING PROCESS: Description of Your Task

For reiteration:

You will conduct a negotiation on the investment in a long-term emissions reduction with your partner. For this purpose, you as well as your partner will each receive 200 ECU, of which any integer amount between 0 ECU and 200 ECU can be invested. However, both you and your partner can only invest the same amount on which you both agree during the negotiation process.

Both you and your partner will have the opportunity to make offers concerning the amount of investment. Additionally, you and your partner can send messages to each other.

Overall, you will have 10 minutes to reach an agreement with your partner. The negotiation will end as soon as you and your partner reach an agreement concerning the amount of investment. You will have reached an agreement if both of you make the same offer in direct succession. If you do not reach an agreement within 10 minutes, the negotiation has failed and both you and your partner will only receive the basic payment.

Continue to the control questions

Please answer the following questions and then click on “Next”. You will not reach the next screen until you have answered all questions correctly.

1.	The role of either the executive board member or the representative of future generations will be randomly assigned to you. ¹	☐ Yes ☐ No
2.	You and your partner will negotiate the investment in a long-term emissions reduction.	☐ Yes ☐ No
3.	You and your partner can invest different amounts in a long-term emissions reduction.	☐ Yes ☐ No
4.	You and your partner will each receive 200 ECU, of which any integer amount between 0 ECU and 200 ECU can be invested.	☐ Yes ☐ No
5.	Overall, you have 15 minutes to reach an agreement with your partner.	☐ Yes ☐ No
6.	Overall, you have 10 minutes to reach an agreement with your partner.	☐ Yes ☐ No
7.	If you reach an agreement with your partner, the negotiated amount will be donated to one of the organizations presented.	☐ Yes ☐ No
8.	If you reach an agreement with your partner, the payment of the person assigned to the role of the representative of future generations will be equivalent to the amount of investment, while the person assigned to the role of the executive board member will receive the differential amount between the 200 ECU and the amount of investment. ²	☐ Yes ☐ No
9.	In the case that you do not reach an agreement with your partner within the given time, each of you will receive the 200 ECU.	☐ Yes ☐ No
10.	In the case that you do not reach an agreement with your partner within the given time, the negotiation will have failed and both you and your partner will only receive the basic payment.	☐ Yes ☐ No

Next

¹ For participants in the NORFG-NOINC treatment, the first question written in green was replaced by “The role of either the executive board member A or the executive board member B will be randomly assigned to you.”.

² For participants in the NORFG-NOINC and in the RFG-NOINC treatment, the second question written in green was replaced by “If you reach an agreement with your partner, you and your partner will receive the differential amount between the 200 ECU and the amount of investment”.

Participants in the role of the representative of future generations in the RFG treatments were provided with the following three screens.

You are going to be the representative of future generations.

In the role of the representative of future generations you are a representative of people and animals living in the future and you will have the task of defending their interests in today's decision-making processes.

This is important, since people and animals living in the future are not able to take part in today's decision-making processes themselves, although decision outcomes mostly have far-reaching consequences for the future. If the interests of people and animals living in the future are not sufficiently incorporated in today's decisions, there is a danger that the quality of life of people and animals living in the future will be severely reduced or, in a worst-case scenario that life on earth will no longer be possible.

CO₂ emissions in particular have a great influence on global warming, leading to worse living conditions in the future if no countermeasures are taken. Global warming can be characterized by an increase in global air and ocean temperatures, reduced snowfall and the melting of ice caps as well as a rise in sea levels. The resulting changes to rainfall, wind patterns as well as the salt content and the pH level of oceans will lead to extreme weather events such as droughts, heavy precipitation, heat waves, and tropical cyclones, all with long-term negative impacts (heat-related deaths in Europe, transmission of infectious diseases in some areas, earlier sowing and increasing pest infestations, shortened vegetation periods and crop failures in wide parts of Africa, devastation from coastal flooding in numerous areas, ...)

Thus, it is important to reduce today's CO₂ emissions to the extent that people and animals living in the future will also have prospects. As the representative of future generations, you will succeed in your role if you are able to negotiate an amount of investment with your negotiation partner that is as high as possible and that will be donated to one of the organizations supporting long-term emissions reduction. Therefore, you should measure your success against the CO₂ reductions achieved.

Next

Look at the descriptions of the two organizations again, which you will find as a printout on your desk.

Please choose one of the organizations presented, to which the negotiated amount of investment will be donated after today's session:

- ☐ Climate without Borders
- ☐ OroVerde

Next

In the following, you will conduct a negotiation on the amount of investment in a long-term emissions reduction with your partner, who is the executive board member. For this purpose, both you and your partner will each receive 200 ECU, of which any integer amount between 0 ECU and 200 ECU can be invested. However, both you and your partner can only invest the same amount on which you both agree during the negotiation process.

You have the job of representing the interests of future generations. The more you and your negotiation partner decide to invest, the better it will be for people and animals living in the future. **However, the more you and your negotiation partner decide to invest, the less your negotiation partner's company will earn, because the investment is costly. For each ECU that you invest in a long-term emissions reduction, you will earn 1 ECU.**

Both you and your partner have the opportunity to make offers concerning the amount of investment. **At the beginning of the negotiation, your partner will make the first offer and will have the option to send a message to you. You can then respond to this offer.**

Overall, you will have 10 minutes to reach an agreement with your partner. The negotiation will end as soon as you and your partner reach an agreement concerning the amount of investment. You will have reached an agreement if both of you make the same offer in direct succession. If you do not reach an agreement within 10 minutes, the negotiation has failed and both you and your partner will only receive the basic payment.

Continue to negotiation

* For participants in the role of the representative of future generations in the RFG-NOINC treatment, the text written in green was replaced by

“However, the more you and your negotiation partner decide to invest, the less you and your negotiation partner's company will earn, because the investment is costly. For each ECU that you invest in a long-term emissions reduction, you will lose 1 ECU.”

* In the case that the representative of future generations made the first offer, the text written in red was as follows:

“At the beginning of the negotiation, you will make the first offer and will have the option to send a message to your partner. Your partner can then respond to this offer.”

Participants in the role of the executive board member were provided with the following two screens.

You are going to be the executive board member.

In the role of the executive board member, you are a representative of your company. You will have the task of defending the prime interests of your company – namely, to maximize profits – in today's decision-making processes.

This is important, since your company will only survive if sufficiently high profit is made. Making profit especially depends on the decisions made in your company. High profits are only possible if sufficiently high revenues are achieved and (unnecessary) costs avoided.

As the executive board member, you will succeed in your role if you act in decision-making processes in a way that maximizes revenues and minimizes costs (also those resulting from emissions reductions).

Next

* For participants in the role of the executive board member A in the NORFG-NOINC treatment, the text written in green was replaced by “the executive board member A”. For participants in the role of the executive board member B in the NORFG-NOINC treatment, this text was replaced by “the executive board member B”.

In the following, you will conduct a negotiation on the amount of investment in a long-term emissions reduction with your partner, who is the representative of future generations. For this purpose, both you and your partner will each receive 200 ECU, of which any integer amount between 0 ECU and 200 ECU can be invested. However, both you and your partner can only invest the same amount on which you both agree during the negotiation process.

The more you and your negotiation partner decide to invest, the less you and your company will earn because the investment is costly. For each ECU that you invest in a long-term emissions reduction, you will lose 1 ECU.

Both you and your partner will have the opportunity to make offers concerning the amount of investment. At the beginning of the negotiation, you will make the first offer and will have the option to send a message to your partner. Your partner can then respond to this offer.

Overall, you will have 10 minutes to reach an agreement with your partner. The negotiation will end as soon as you and your partner reach an agreement concerning the amount of investment. You will have reached an agreement if both of you make the same offer in direct succession. If you do not reach an agreement within 10 minutes, the negotiation has failed and both you and your partner will only receive the basic payment.

Continue to negotiation

* For participants in the role of the executive board member A in the NORFG-NOINC treatment, the text written in green was replaced by “the executive board member A”. For participants in the role of the executive board member B in the NORFG-NOINC treatment, this text was replaced by “the executive board member B”.

* In the case that the representative of future generations made the first offer, the text written in red was as follows:

“At the beginning of the negotiation, your partner will make the first offer and will have the option to send a message to you. You can then respond to this offer.”

	Remaining Time: 9 minutes 45 seconds
Please wait for the offer from the executive board member.	

* For participants in the role of the executive board member in the RFG treatments, the text written in blue was replaced by “representative of future generations”. For participants in the role of the executive board member in the NORFG-NOINC treatment, the text written in blue was replaced either by “executive board member A” or by “executive board member B”.

	Remaining Time: 8 minutes 54 seconds									
Here you can see the offer and message from your partner, who is the executive board member:										
Your partner's offer: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">Amount of investment in a long-term emissions reduction in the case of an agreement:</td> <td style="width: 10%; text-align: right;">95</td> <td style="width: 20%; text-align: right;">ECU</td> </tr> <tr> <td style="color: green;">In the case of an agreement you would receive:</td> <td style="text-align: right; color: green;">95</td> <td style="text-align: right; color: green;">ECU</td> </tr> <tr> <td style="color: green;">In the case of an agreement your partner would receive:</td> <td style="text-align: right; color: green;">105</td> <td style="text-align: right; color: green;">ECU</td> </tr> </table>		Amount of investment in a long-term emissions reduction in the case of an agreement:	95	ECU	In the case of an agreement you would receive:	95	ECU	In the case of an agreement your partner would receive:	105	ECU
Amount of investment in a long-term emissions reduction in the case of an agreement:	95	ECU								
In the case of an agreement you would receive:	95	ECU								
In the case of an agreement your partner would receive:	105	ECU								
Your partner's message: No message.										
Next										

* For participants in the role of the executive board member in the RFG treatments, the text written in blue was replaced by “representative of future generations”. For participants in the role of the executive board member in the NORFG-NOINC treatment, the text written in blue was replaced either by “executive board member A” or by “executive board member B”.

* For participants in the NORFG-NOINC and in the RFG-NOINC treatment, the text written in green was replaced by “In the case of an agreement you and your partner would receive”. The respective amount was equivalent to the differential amount between the 200 ECU and the amount of investment.

Remaining Time:

8 minutes
40 seconds

Here you can make an offer to your partner, who is the **executive board member**, by setting the controller below to the amount between 0 ECU and 200 ECU that you want to invest in a long-term emissions reduction:

Your offer:

0 ECU

200 ECU

Amount of investment in a long-term emissions reduction in the case of an agreement:	200	ECU
In the case of an agreement you would receive:	200	ECU
In the case of an agreement your partner would receive:	0	ECU

On the next screen you will also have the possibility to send a message to your partner.

Send offer

- * For participants in the role of the executive board member in the RFG treatments, the text written in blue was replaced by “representative of future generations”. For participants in the role of the executive board member in the NORFG-NOINC treatment, the text written in blue was replaced either by “executive board member A” or by “executive board member B”.
- * For participants in the NORFG-NOINC and in the RFG-NOINC treatment, the text written in green was replaced by
“In the case of an agreement you and your partner would receive”. The respective amount was equivalent to the differential amount between the 200 ECU and the amount of investment.

The prewritten messages were inspired by the messages used by O'Connor et al. (2005; based on Hilty and Carnevale, 1993). Most of the original messages were replaced by new messages to represent the different interests that might play a role in the negotiation.

	Remaining Time: 8 minutes 18 seconds
Here you can send one of the following messages to your partner, who is the executive board member, by clicking the appropriate box. Please note that you can only send one message per offer. If you do not want to send a message, please choose the box “Send no message”. Your message: - o That’s a deal. We’re finished! ^{1, c} - o Think about the interests of the company and give in. ^b - o Think about the interests of our generation and give in. ^c - o Think about the interests of people and animals who’ll live in the future and give in. ^d - o Think about my interests and give in. ^a - o I am exclusively pursuing the interests of the company. ^b - o I am exclusively pursuing the interests of our generation. ^c - o I am exclusively pursuing the interests of people and animals who’ll live in the future. ^d - o I am exclusively pursuing my own interests. ^a - o From my point of view, investing a lot in long-term emissions reduction does not make sense. ^a - o From the point of view of people and animals who’ll live in the future, investing a lot in long-term emissions reduction makes sense. ^d - o From the company’s point of view, investing a lot in long-term emissions reduction does not make sense. ^b - o From our generation’s point of view, investing a lot in long-term emissions reduction does not make sense. ^c - o There is hardly any time left to negotiate. ^{1, c} - o We should find a solution which will benefit the company. ^b - o We should find a solution which will benefit the people and animals who’ll live in the future. ^d - o We should find a solution which I personally will benefit from. ^a - o We should find a solution which will benefit our generation. ^c - o We should invest more in long-term emissions reduction so that I can earn more money. ^a - o We should invest more in long-term emissions reduction to provide people and animals who’ll live in the future with a better starting point. ^d - o Let’s hurry. ^{1, c} - o We should invest less in long-term emissions reduction so that the company will have lower costs. ^b - o We should invest less in long-term emissions reduction so that I can earn more money. ^a - o We should invest less in long-term emissions reduction so that our generation will have lower costs. ^c - o Send no message. Send message	

¹ Messages taken from the original source.

^a Messages focusing on self-interest.

^b Messages focusing on the company’s interests.

^c Messages focusing on the present generation’s interests.

^d Messages focusing on future generations’ interests.

^e Procedural messages.

* For participants in the role of the executive board member in the RFG treatments, the text written in blue was replaced by “representative of future generations”. For participants in the role of the executive board member in the NORFG-NOINC treatment, the text written in blue was replaced either by “executive board member A” or by “executive board member B”.

In the case of an agreement, participants in the role of the representative of future generations in the RFG treatments were provided with the following screen.

You have reached the following agreement with your partner, who is the executive board member:

Amount of investment in a long-term emissions reduction:	95	ECU
<i>Your payment based on the negotiation result:</i>	<i>95</i>	<i>ECU</i>
<i>Your partner's payment based on the negotiation result:</i>	<i>105</i>	<i>ECU</i>

The amount of investment will be donated to your chosen organization, **Climate without Borders**, after today's session.

You will receive your overall payment (payment based on the negotiation result + basic payment) at the end of the experiment.

Next

* For participants in the role of the representative of future in the RFG-NOINC treatment, the text written in green was replaced by "Your and your partner's payment based on the negotiation result". The respective amount was equivalent to the differential amount between the 200 ECU and the amount of investment.

In the case of an agreement, participants in the role of the executive board member were provided with the following screen.

You have reached the following agreement with your partner, who is the **representative of future generations**:

Amount of investment in a long-term emissions reduction:	95	ECU
Your payment based on the negotiation result:	105	ECU
Your partner's payment based on the negotiation result:	95	ECU

The amount of investment will be donated to the organization **which the representative of future generations chose, Climate without Borders**, after today's session.

You will receive your overall payment (payment based on the negotiation result + basic payment) at the end of the experiment.

Next

- * For participants in the role of the executive board member in the NORFG-NOINC treatment, the text written in blue was replaced either by "executive board member A" or by "executive board member B".
- * For participants in the role of the executive board member in the NORFG-NOINC and in the RFG-NOINC treatment, the text written in green in the box was replaced by "Your and your partner's payment based on the negotiation result". The respective amount was equivalent to the differential amount between the 200 ECU and the amount of investment.
For participants in the role of the executive board member in the NORFG-NOINC, the text written in green below the box was replaced by "which was randomly chosen".

In the case of no agreement, participants in the role of the representative of future generations in the RFG treatments were provided with the following screen.

You have not reached an agreement with your partner, who is the executive board member:

Amount of investment in a long-term emissions reduction:	0	ECU
<i>Your payment based on the negotiation result:</i>	<i>0</i>	<i>ECU</i>
<i>Your partner's payment based on the negotiation result:</i>	<i>0</i>	<i>ECU</i>

As you and your partner have not reached an agreement, no money will be donated to your chosen organization, **Climate without Borders**, after today's session.

You will receive your overall payment (payment based on the negotiation result + basic payment) at the end of the experiment.



* For participants in the role of the representative of future in the RFG-NOINC treatment, the text written in green was replaced by

“Your and your partner's payment based on the negotiation result”. The respective amount was 0 ECU.

In the case of no agreement, participants in the role of the executive board member were provided with the following screen.

You have not reached an agreement with your partner, who is the **representative of future generations**:

Amount of investment in a long-term emissions reduction:	0 ECU
Your payment based on the negotiation result:	0 ECU
Your partner's payment based on the negotiation result:	0 ECU

As you and your partner have not reached an agreement, no money will be donated to the organization **which the representative of future generations chose**, **Climate without Borders**, after today's session.

You will receive your overall payment (payment based on the negotiation result + basic payment) at the end of the experiment.

Next

* For participants in the role of the executive board member in the NORFG-NOINC treatment, the text written in blue was replaced either by "executive board member A" or by "executive board member B".

* For participants in the role of the executive board member in the NORFG-NOINC and in the RFG-NOINC treatment, the text written in green in the box was replaced by "Your and your partner's payment based on the negotiation result". The respective amount was 0 ECU. For participants in the role of the executive board member in the NORFG-NOINC treatment, the text written in green below the box was replaced by "which was randomly chosen".

Desk number:

Next

Social value orientation was measured by the method of Murphy et al. (2011; see the following three screens).

Please make the following hypothetical decisions. Each participant decides independently of the other one. You have to decide between different distributions for you and another hypothetical person. Your decision has no influence on either your negotiation results or on your payment.

1	You receive:	85	85	85	85	85	85	85	85	85
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	85	76	68	59	50	41	33	24	15

2	You receive:	85	87	89	91	93	94	96	98	100
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	15	19	24	28	33	37	41	46	50

Next

Please make the following hypothetical decisions. Each participant decides independently of the other. You have to decide between different distributions for you and another hypothetical person. Your decision has no influence on either your negotiation result or on your payment.

3	You receive:	50	54	59	63	68	72	76	81	85
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	100	98	96	94	93	91	89	87	85

4	You receive:	50	54	59	63	68	72	76	81	85
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	100	89	79	68	58	47	36	26	15

Next

Please make the following hypothetical decisions. Each participant decides independently of the other. You have to decide between different distributions for you and another hypothetical person. Your decision has no influence on either your negotiation result or on your payment.

5	You receive:	100	94	88	81	75	69	63	56	50
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	50	56	63	69	75	81	88	94	100

6	You receive:	100	98	96	94	93	91	89	87	85
		☐	☐	☐	☐	☐	☐	☐	☐	☐
	The other person receives:	50	54	59	63	68	72	76	81	85

Next

Concern for future consideration was measured by the following items which were adopted from Joireman et al. (2008; based on Strathman et al., 1994), with the second item of the original item battery being skipped because of incomprehension.

For each of the statements below, please indicate whether or not the statement is characteristic of you. There is no right or wrong answer. Therefore, simply indicate what best reflects your attitude.	
I consider how things might be in the future, and try to influence those things with my day to day behavior.	Very uncharacteristic ○ ○ ○ ○ ○ ○ ○ Very characteristic
I only act to satisfy immediate concerns, figuring the future will take care of itself.	Very uncharacteristic ○ ○ ○ ○ ○ ○ ○ Very characteristic
My behavior is only influenced by the immediate (i.e., a matter of days or weeks) outcomes of my actions.	Very uncharacteristic ○ ○ ○ ○ ○ ○ ○ Very characteristic
My convenience is a big factor in the decisions I make or the actions I take.	Very uncharacteristic ○ ○ ○ ○ ○ ○ ○ Very characteristic
I am willing to sacrifice my immediate happiness or well-being in order to achieve future outcomes.	Very uncharacteristic ○ ○ ○ ○ ○ ○ ○ Very characteristic
I think it is important to take warnings about negative outcomes seriously even if the negative outcome will not occur for many years.	Very uncharacteristic ○ ○ ○ ○ ○ ○ ○ Very characteristic
I think it is more important to perform a behavior with important distant consequences than a behavior with less-important immediate consequences.	Very uncharacteristic ○ ○ ○ ○ ○ ○ ○ Very characteristic
I generally ignore warnings about possible future problems because I think the problems will be resolved before they reach crisis level.	Very uncharacteristic ○ ○ ○ ○ ○ ○ ○ Very characteristic
I think that sacrificing now is usually unnecessary since future outcomes can be dealt with at a later time.	Very uncharacteristic ○ ○ ○ ○ ○ ○ ○ Very characteristic
I only act to satisfy immediate concerns, figuring that I will take care of future problems that may occur at a later date.	Very uncharacteristic ○ ○ ○ ○ ○ ○ ○ Very characteristic
Since my day to day work has specific outcomes, it is more important to me than behavior that has distant outcomes.	Very uncharacteristic ○ ○ ○ ○ ○ ○ ○ Very characteristic



Individual goals were measured by the following items which were based on Beersma and De Dreu (2002).

Please indicate how strongly you agree with the following statements. There is no right or wrong answer. Therefore, simply indicate what best reflects your attitude.

I had to achieve as many points as possible for myself.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I was particularly trying to achieve as many points as possible for myself.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I was particularly trying to benefit, regardless of the consequences for others.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I had to try to achieve as many points as possible for the company.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I was trying to achieve as many points as possible for the company.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I had to try to achieve as many points as possible for our generation.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I was trying to achieve as many points as possible for our generation.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I had to try to achieve as many points as possible for people and animals who will live in the future.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I was trying to achieve as many points as possible for people and animals who will live in the future.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval



Participants had to justify their negotiation behavior (see the following screen).

Please justify your behavior during the negotiation in your own words (max. 1000 characters). Confirm your entry by pressing the **Enter-key** and **then** click on “Next”.



Participants in the role of the representative of future generations in the RFG treatments were provided with the following items referring to general attitudes.

Please indicate how strongly you agree with the following statements. There is no right or wrong answer. Therefore, simply indicate what best reflects your attitude.

I enjoyed the experiment.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
The explanations in this experiment were easy to understand.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I have the feeling that the experimenters influenced my responses.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I think that my negotiation partner is a fair-minded person.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I think the negotiation result is fair.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
My role as the representative of future generations influenced my decisions during the experiment.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I think the employment of a representative for future generations makes sense.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I already have experience with negotiations.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval



Participants in the role of the executive board member were provided with the following items referring to general attitudes.

Please indicate how strongly you agree with the following statements. There is no right or wrong answer. Therefore, simply indicate what best reflects your attitude.

I enjoyed the experiment.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
The explanations in this experiment were easy to understand.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I have the feeling that the experimenters influenced my responses.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I think that my negotiation partner is a fair-minded person.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I think the negotiation result is fair.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
<i>The fact that my partner had the role of the representative of future generations influenced my decisions during the experiment.¹</i>	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
<i>I think the employment of a representative for future generations makes sense.²</i>	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval
I already have experience with negotiations.	Complete rejection ○ ○ ○ ○ ○ ○ Complete approval



¹ For participants in the role of the executive board member in the NORFG-NOINC treatment, the first text written in green was replaced by
 “The fact that my partner also had the role of the executive board member influenced my decisions during the experiment.”

² For participants in the role of the executive board member in the NORFG-NOINC treatment, the second text written in green was replaced by
 “I think the employment of executive board members makes sense.”

Demography was measured as follows.

Demographic Questions

Please select your gender.

☐ male

☐ female

How old are you?

If you are studying or have studied,
please indicate your major subject.

Please enter your final high school grade.
(Please use a dot instead of a comma.)

How many months of real-life working experience in
private or public companies do you have?
(including internship time, but without school or college time)?

Next

If participants reached an agreement in considerably less than the 20 minutes scheduled or considerably faster than other participants did, they had to do math calculations (see the following three screens).

In the following, you will solve some arithmetic problems as part of a cognitive test. You will be informed about the result of your cognitive test but it will not influence your payment. To achieve a good result, it is necessary that you concentrate fully.

Next

$$7 \times 57 =$$

You have no time left. You have solved 5 out of 6 arithmetic problems correctly. This is a very good performance.

In the case of an agreement, participants in the role of the representative of future generations in the RFG treatments were provided with the following screen.

You have reached the following agreement with your partner, who is the executive board member:

Amount of investment in a long-term emissions reduction:	95	ECU
<i>Your payment based on the negotiation result:</i>	<i>95</i>	<i>ECU</i>
<i>Your partner's payment based on the negotiation result:</i>	<i>105</i>	<i>ECU</i>

Therefore, your overall payment amounts to:

Basic payment:	80 ECU
+ Payment based on the negotiation result:	95 ECU
= Payment in ECU:	175 ECU
: Exchange rate (25 ECU = 1 Euro)	25 ECU/Euro
= Overall payment in Euros:	7.00 Euros

The amount of investment of 95 ECU (= 3.80 Euro) will be donated to your chosen organization, **Climate without Borders**, after today's session. You will receive your overall payment at the exit. Please wait until your desk number is called out.

Next

* For participants in the role of the representative of future in the RFG-NOINC treatment, the text written in green was replaced by "Your and your partner's payment based on the negotiation result". The respective amount was equivalent to the differential amount between the 200 ECU and the amount of investment.

In the case of an agreement, participants in the role of the executive board member were provided with the following screen.

You have reached the following agreement with your partner, who is the **representative of future generations**:

Amount of investment in a long-term emissions reduction:	95	ECU
Your payment based on the negotiation result:	105	ECU
Your partner's payment based on the negotiation result:	95	ECU

Therefore, your overall payment amounts to:

Basic payment:	80 ECU
+ Payment based on the negotiation result:	15 ECU
= Payment in ECU:	185 ECU
: Exchange rate (25 ECU = 1 Euro)	25 ECU/Euro
= Overall payment in Euros:	7.40 Euros

The amount of investment of 95 ECU (= 3.80 Euro) will be donated to the organization **which the representative of future generations chose, Climate without Borders**, after today's session. You will receive your overall payment at the exit. Please wait until your desk number is called out.

Next

* For participants in the role of the executive board member in the NORFG-NOINC treatment, the text written in blue was replaced either by "executive board member A" or by "executive board member B".

* For participants in the role of the executive board member in the NORFG-NOINC and in the RFG-NOINC treatment, the text written in green in the box was replaced by "Your and your partner's payment based on the negotiation result". The respective amount was equivalent to the differential amount between the 200 ECU and the amount of investment.
For participants in the role of the executive board member in the NORFG-NOINC treatment, the text written in green below the box was replaced by "which was randomly chosen".

In the case of no agreement, participants in the role of the representative of future generations in the RFG treatments were provided with the following screen.

You have not reached an agreement with your partner, who is the executive board member:

Amount of investment in a long-term emissions reduction:	0	ECU
<i>Your payment based on the negotiation result:</i>	<i>0</i>	<i>ECU</i>
<i>Your partner's payment based on the negotiation result:</i>	<i>0</i>	<i>ECU</i>

Therefore, your overall payment amounts to:

Basic payment:	80 ECU
+ Payment based on the negotiation result:	0 ECU
= Payment in ECU:	80 ECU
: Exchange rate (25 ECU = 1 Euro)	25 ECU/Euro
= Overall payment in Euros:	3.20 Euros

As you and your partner have not reached an agreement, no money will be donated to your chosen organization, **Climate without Borders**, after today's session. You will receive your overall payment at the exit. Please wait until your desk number is called out.

Next

* For participants in the role of the representative of future in the RFG-NOINC treatment, the text written in green was replaced by

"Your and your partner's payment based on the negotiation result". The respective amount was 0 ECU.

In the case of no agreement, participants in the role of the executive board member were provided with the following screen.

You have not reached an agreement with your partner, who is the **representative of future generations**:

Amount of investment in a long-term emissions reduction:	0	ECU
Your payment based on the negotiation result:	0	ECU
Your partner's payment based on the negotiation result:	0	ECU

Therefore, your overall payment amounts to:

Basic payment:	80 ECU
+ Payment based on the negotiation result:	0 ECU
= Payment in ECU:	80 ECU
: Exchange rate (25 ECU = 1 Euro)	25 ECU/Euro
= Overall payment in Euros:	3.20 Euros

As you and your partner have not reached an agreement, no money will be donated to the organization **which the representative of future generations chose**, **Climate without Borders**, after today's session. You will receive your overall payment at the exit. Please wait until your desk number is called out.

Next

- * For participants in the role of the executive board member in the NORFG-NOINC treatment, the text written in blue was replaced either by "executive board member A" or by "executive board member B".
- * For participants in the role of the executive board member in the NORFG-NOINC and in the RFG-NOINC treatment, the text written in green in the box was replaced by "Your and your partner's payment based on the negotiation result". The respective amount was 0 ECU. For participants in the role of the executive board member in the NORFG-NOINC treatment, the text written in green below the box was replaced by "which was randomly chosen".

Thank you for participating in this experiment.