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WHAT YOU LOOK FOR IS WHAT YOU GET:

THE IMPACT OF COMPARISON MINDSETS ON INFORMATION ELABORATION AND JOINT OUTCOMES OF NEGOTIATION GROUPS WITH DIVERSE INTEREST-WEIGHTINGS

DISSERTATION

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Abstract

Groups, not individuals, are often involved in negotiations due to the diverse knowledge and perspectives that group members contribute. However, prior research focused on the exchange and integration of different information between negotiation parties. Information within negotiation groups was considered shared among group members. Therefore, within-group information elaboration and its consequences for parties' joint outcomes in integrative win-win negotiations were neglected. To address this research gap, this dissertation proposes that a difference mindset (i.e., a special sensitivity towards differences) (1) is activated by high group diversity, (2) reduces group members' projection onto fellow group members, (3) increases groups' first offer quality via high within-group information elaboration and (4) increases joint outcomes (5a) via high within-group information elaboration before and/or during a negotiation between groups and (5b) via a high within-group information elaboration before a negotiation between group representatives. Proposition 1 was confirmed by an experimental online study about bogus groups with manipulated high (vs. low) group diversity (Study 1). Proposition 2 was confirmed by an experimental online study about bogus groups with comparison mindsets (similarity vs. difference) as independent variables (Study 2). Proposition 3 was not supported by an experimental laboratory group study on between-group negotiations (Study 3), but affirmed by an experimental laboratory group study on representative negotiations (Study 4). Both studies also supported Propositions 4 and 5, with the restriction that, in between-group negotiations, difference mindsets increase joint outcomes between groups only via within-group information elaboration during the negotiation. Contributions, limitations and implications for future research are discussed.

1 Introduction

At the beginning of the collective bargaining in the German metal and electrical industry in 2012, the union *IG Metall* demanded a wage increase of more than six percent, tenure for apprentices and long-term contracts for temporary workers from the employers' side ("Tarifeinigung in der Metallindustrie", 2012). If two groups[1] face each other in a negotiation, like the union and the employers' side in this collective bargaining example, the situation appears to be crystal clear: *Between* the two negotiation groups, there is a conflict of interest, but *within* the negotiation groups, the members share the same understanding of their group's most important interests that underlie their preferences for the negotiation issues (i.e., wage increases, tenure and long-term contracts for apprentices and temporary workers in the previous collective bargaining example). Yet, is the situation really this clear and simple? Do members of a negotiation group always have the same understanding over which interests are most important to their group and which are less important?

Negotiations are often conducted in the name of big entities and interest groups, such as companies (Bennington, Shelter, & Shaw, 2003), political parties or nations (Savir, 2014) and unions or employer associations (Friedman, 1994; Friedman & Podolny, 1992). When complex constituents like these are involved in a negotiation, the information about which interests are most important to them and which are less important (i.e., which weightings the single interests possess relative to each other) is usually not concentrated in one department, regional office, political fraction or employee group. Instead, employees within different departments, fractions or subgroups of an organization may hold diverse information about the weightings of the organization's interests in a negotiation (Brett, Friedman, & Behfar,

[1] The terms groups and teams are used interchangeably in this dissertation.

2009). Therefore, "members of a negotiation team may naturally have different knowledge, information and expertise" (Peterson & Thompson, 1997, p. 366).

For instance, the members of the negotiation group for the employers' side in the collective bargaining example may hold different information about the weightings of their group's interests in the upcoming negotiation: Based on the information available to them, some members may be convinced that high flexibility in workforce planning is more important than cutting the costs. In this case, avoiding additional costs by refusing higher wages would seem to be less important than securing high flexibility in workforce planning, which could be gained by avoiding tenure or long-term contracts for apprentices and temporary workers (Bündgens & Ellwart, 2013). Other members of the group may hold the information that cutting costs is more important for the employers' side than high flexibility in workforce planning. In this case, reaching a high flexibility in workforce planning by avoiding tenure or long-term contracts for apprentices and temporary workers would seem to be less important than avoiding additional costs due to higher wages.

If members of a negotiation group hold diverse information concerning the weightings of their organization's interests, like in the example above, it is crucial that they exchange and integrate this diverse information within their group. This exchange and integration of available information within groups is called *within-group information elaboration* (Homan, van Knippenberg, van Kleef, & de Dreu, 2007b). Only if group members engage in the elaboration of their diverse information about their companies' *interest-weightings*, can they truly realize what is more and less significant for the entire group. Especially in negotiations where negotiating parties can maximize their joint outcomes (i.e., the negotiation structure is integrative and win-win agreements are possible; Raiffa, 1982), knowing the interest-weightings of one's own group is essential for engaging in systematic concession making and trading issues that serve highly-weighted interests against issues that serve interests with a

low weight (Pruitt & Carnevale, 1993; Tripp & Sondak, 1992). For instance, after elaborating every group members' information about the interest-weightings, the employers' side in the collective bargaining example arrived at the conclusion that flexible workforce planning was more important than cutting costs. Therefore, the employers' side decided to offer higher wages for permanent workers while remaining resistant towards tenure and long-term contracts for apprentices and temporary workers. At the same time, the most important interest of the union was to increase the wages of their most influential members – the permanent workers. Therefore, the concessions of the employers' side led to a high joint outcome for the two groups.

As this example shows, the within-group elaboration of diverse interest-weightings is highly important for the joint negotiation outcomes of two or more groups involved in a negotiation. If the group members of the employers' side in the collective bargaining example had failed to exchange and integrate their diverse information about the interest-weightings of their group, their negotiation might not have resulted in achieving the group's highly-weighted interests. Instead, the group would have risked an outcome (e.g., lower wages but tenure for apprentices) corresponding to interests with a lower weight (e.g., cutting costs) instead of highly-weighted interests (e.g., flexible workforce planning). Therefore, a crucial question is which factors facilitate or inhibit the exchange and integration of such important information within negotiation groups. An answer to this question would provide the opportunity of systematically creating conditions under which the elaboration of information about interest-weightings can be stimulated.

To approach this question and its answer, let us take a closer look at the negotiation group representing the employers' side in the collective bargaining example. The group consists of three Caucasian males in their forties who all share the same educational background, started out working in the same company and are familiar with each other. The

first one is majorly concerned with human resource strategies, the second one is an expert for production processes, and the third one is concerned with legal issues and financial controlling. Now think about the interest-weightings these three group members will have in the upcoming bargaining situation. Will they all have similar weightings for cost-cutting and flexible workforce planning or will they hold different interest-weightings? If you have been thinking about the fact that all group members will represent the same party in the upcoming negotiation and even share the same ethnicity, age and educational background, you might have answered this question with "similar". If you focused on the fact that all three group members have a different functional background and expertise, the answer "different" might have appeared to be more valid to you (Bündgens & Ellwart, 2013). The goal of this dissertation is to show how such a focus on either the similarities or differences between group members will affect the within-group elaboration of diverse interest-weightings and in this way influence *joint outcomes* in integrative (i.e., win-win) negotiations with group involvement.

Research on social cognition has shown that an orientation towards similarities, also called a *similarity mindset*, leads individuals to assume that others' information, interests and perspectives are similar to their own (Todd, Hanko, Galinsky, & Mussweiler, 2011). Therefore, the present research predicts that group members with a similarity mindset engage in less within-group elaboration of differing interest-weightings and therefore arrive at lower joint outcomes. In contrast, research found that the orientation towards differences, called a *difference mindset*, reduces individuals' tendency to assume that others share their information, interests and perspectives. Thus, the present research predicts that group members with a difference mindset engage in higher within-group elaboration of differing interest-weightings, consequently resulting in better joint outcomes. A similarity mindset and a difference mindset are both incorporated in the term *comparison mindsets*, as they both

regard the type of comparison an individual applies to a standard (Mussweiler, 2001, 2003). Individuals with a similarity mindset focus on finding similarities with a comparison standard whereas individuals with a difference mindset focus on finding differences to a comparison standard.

The goal of this dissertation is to show in four studies how these comparison mindsets may be activated in negotiation groups (Study 1) and what consequences they have for group members' cognitions (Study 2), their within-group elaboration of diverse interest-weightings, and finally, their joint outcomes in a negotiation with integrative potential (Study 3 and 4). Across 2 studies, the present research assesses the impact of comparison mindsets on the within-group elaboration of differing interest-weightings before and during two types of negotiations with group involvement: Group-on-group negotiations in which two groups negotiate with each other (Study 3) and representative negotiations in which two individual group members represent their group after a group meeting (Study 4).

With regard to *negotiation research*, this dissertation makes several major contributions. First, it is among the rare empirical work acknowledging and exploring interest-related diversity within negotiation groups (Brett et al., 2009) and what factors help or hinder groups in discovering and dealing with this diversity. Second, it provides evidence that within-group processes are as important for joint outcomes in intergroup negotiations as between-group processes. In this connection, two psychological mechanisms, which until the present were only assessed *between* negotiation groups, are now assessed *within* groups: Information elaboration and the projection of interest-weightings. Third, this dissertation tackles a long existing research gap (Carnevale and Pruitt, 1992) by assessing the interrelations of these within-and between-group processes before and during the negotiation. In this way, the present research is also among the rare research taking into account that negotiations cannot be reduced to the around-the-table negotiation (Saunders, 1985). Fourth,

the present research is among the first comparing processes and outcomes in group-on-group (i.e. between-group) and representative negotiations across two studies. In this way, is allows for a comparison between relevant processes in these two forms of intergroup negotiations, which has rarely been the focus of previous research. Ultimately, all of these insights identify ways in which within-group information elaboration can be fostered in order to increase joint outcomes in intergroup negotiations, which form the basis of successful long-term business relationships (Dabholkar, Johnston, & Cathey, 1994). With regard to research on *social cognition*, the present research provides evidence, how comparison mindsets can be activated, which consequences these social cognitive constructs have in real social interactions, and how they may be connected to other constructs (e.g., perspective-taking mindset). With regard to *hidden profile* and *diversity research*, the present research offers new explanations to effects in previous research and contributes to the integration of different streams of research, more specifically negotiation, social cognition, diversity and hidden profile research.

In the subsequent theoretical background, I will derive the importance of information elaboration for negotiations with group involvement and how comparison mindsets can be expected to influence within-group information elaboration within the different phases of these negotiations. In the present research, I will introduce five specific research questions and my proposed answers to these questions that revolve around my overarching research goal: To shed light on the way comparison mindsets affect the within-group elaboration of diverse interest-weightings and joint outcomes in integrative negotiations with group involvement – from their activation to their outcomes before and during group-on-group and representative negotiations.

2 Theoretical Background

The theoretical background starts by introducing negotiations (Section 2.1) with a special focus on integrative negotiations, integrative negotiation strategies, and the challenges associated with these. It continues with a section why and how groups are involved in negotiations (Section 2.2). In Section 2.3, information elaboration is introduced as a crucial process between and within negotiation groups that is highly relevant for joint negotiation outcomes. In the following part of the theoretical background (Section 2.4), the social cognitive concept of comparison mindsets (i.e., a special sensitivity towards either similarities or differences) is introduced as a factor that is likely to influence the within-group elaboration of diverse interest-weightings in negotiation groups. Subsequently, evidence from research on social cognition, diversity, hidden profiles and negotiations is provided, suggesting that a special sensitivity towards either similarities or differences within a group plays a crucial role for discovering and integrating diverse interest-weightings within groups (Section 2.5).

2.1 An Introduction to Negotiations

Firstly, it is important to understand the concept of negotiations, especially of those with win-win (i.e., integrative) potential. In this type of negotiations, beneficial agreements for all involved negotiation parties (i.e., high joint outcomes) can be reached if the interests of all parties are considered (e.g., Fisher & Ury, 1981). I will introduce strategies that facilitate the optimization of negotiation parties' joint outcomes and explain why groups are usually better able to handle the challenges that go along with integrative negotiations and integrative strategies than individual negotiators.

2.1.1 Approaching the Concept: Definition and Applications of Negotiations

Negotiations are "procedures for resolving opposing preferences" (Carnevale & Pruitt, 1992, p. 531). They involve the allocation of limited or scarce resources (Bazerman & Neale,

1992) between two or more parties that can be either individuals or groups (Bazerman, Curhan, Moore, & Valley, 2000). These parties are dependent on each other in the pursuit of their goal to obtain their most favored outcomes (de Dreu, Beersma, Steinel, & van Kleef, 2007; Thompson, Wang & Gunia, 2010). Due to diverging interests, the outcome preferences of the parties are usually opposed, or at least partially incompatible, to each other (Ury, Brett, & Goldberg, 2007). To resolve this conflict of interest, negotiation parties engage in an exchange process with each other, "verbalize contradictory demands and then move toward agreements by the process of concession making or search for new alternatives" (Pruitt, 1981, p. 1).

In our society, negotiations can be deemed to be one of the most important peaceful ways to overcome conflicts of interest (Rubin & Brown, 1975) and are hence "paramount to the interpersonal functioning and the welfare of a larger community" (Thompson, 1995, p. 839). Therefore, negotiations can be found in every possible setting at every possible level (Barisch, 2011; Rubin & Brown, 1975; Thompson, Peterson, & Brodt, 1996), such as "business marketing negotiations, political negotiations, labor/ management negotiations, legal negotiation/ arbitration, and interpersonal negotiations" (Eliashberg, Lilien, & Kim, 1995, p. 51).

The type of *negotiation issues* that can be subjected to a negotiation is inexhaustible. Parties can negotiate the allocation of desirable benefits such as valued objects and scarce resources or they can negotiate the allocation of burdens such as unattractive objects, undesirable tasks and debts (e.g., Galinsky, Leonardelli, Okhuysen, & Mussweiler, 2005). They can also negotiate intangible issues such as norms and values (Harinck, de Dreu, van Vianen, 2000; Trötschel, 2002).

2.1.2 Providing the Structure: Interest Configurations in Negotiations

Unlike other tasks such as problem solving or decision making which frequently occur in a social context, negotiations can be described as mixed motive settings (Komorita & Parks, 1995; Polzer, 1996). On one hand, negotiating parties are interested in working cooperatively with each other because an agreement usually goes along with a higher individual gain for each party than no agreement. On the other hand, the parties are motivated to compete with each other in order to maximize their individual portion of the existing resources (de Dreu et al., 2007; van Lange, 1999). Whether negotiation parties can engage in cooperative behavior without having to accept major decreases in their individual gain is determined by the *degree of interest conflict* (Thompson, 1990). The degree of conflict that exists between parties' interests is the most important structural characteristic of a negotiation. Thus, it is essential to introduce the different degrees of interest conflict that underlie the parties' discussion about the negotiation issues.

Interests drive parties to engage in negotiations. Interests are intangible motives like desires, concerns, or fears (Fisher & Ury, 1981; Ury et al., 2007), which are hidden behind the concrete *preference for a negotiation issue* or a party's concrete position with regard to this issue. Nevertheless, they are extremely important because they underlie, and hence explain, why a negotiation party has a certain preference for a negotiation issue. As Fisher and Ury (1981) put it "interests motivate people; they are the silent movers behind the hubbub of positions. Your position is something you decided upon. Your interests are what caused you to decide" (p. 42). When negotiation parties have different interests that lead them to engage in the negotiation, these interests may not all be equally important. Instead, "some are more important than others" (Giacomantonio, de Dreu, & Mannetti, 2010, p. 762) and therefore have a high weighting relative to other interests (Trötschel, Hüffmeier, Loschelder, Schwartz, & Gollwitzer, 2011). Correspondingly, some interests may be less important than others are

and therefore have a low *interest-weighting*. In turn, the interest-weighting drives the *prioritization of negotiation issues*. "Priorities are the rankings of the issues on a group's agenda in terms of importance" (Brett, 1991, p. 298). The more a negotiation issue serves the highly-weighted interests of a negotiation party, the more likely it will be claimed and the more resistant the negotiation party will be to giving it up. Therefore, the structure of a negotiation is determined by the interest-weightings of the involved negotiation parties and the degree to which those parties' interests are *opposed* to each other (Thompson, 1990).

If all interests underlying the parties' preferences for the negotiation issues are diametrically opposed (i.e., are oriented towards the opposite direction) and are characterized by the same interest-weightings, cooperative behavior always goes to the expense of a party's individual outcomes. These types of negotiations are called *distributive* or *fixed-sum negotiations* (Barry & Friedman, 1998), because the gain of one party automatically means the loss of the other (Walton & McKersie, 1965). *One-dimensional negotiations* with opposed interests are the simplest examples of fixed-sum negotiations (Smith, 1987), because parties can only negotiate different options or amounts of one negotiation issue (e.g., the signing bonus in a contracting negotiation; see Galinsky, Mussweiler, & Medvec, 2002) and the negotiation parties cannot cooperate without accepting a decrease in their individual profit. However, *multi-dimensional negotiations* with more than one negotiation issue are equally competitive if the negotiation parties equally prefer the negotiation issues at hand because they serve interests that are equally important to the parties. If these interests are at the same time opposed to each other, they are *incompatible*. This means, the negotiation issues have the same prioritization for the negotiation parties due to the same weighting of diametrically opposed interests. In a situation like this, the only areas where cooperation is involved is when reaching an agreement at all (O'Connor & Arnold, 2001), obtaining a balanced outcome for the involved parties in the form of a *compromise solution*, or coming up with an additional

negotiation issue that could create additional value and *expand the pie* (Pruitt & Carnevale, 1993; Sinaceur, Maddux, Vasiljevic, Nückel, & Galinsky, 2013).

To give an example for this situation, imagine the following matrimonial dispute about the next year's vacation: While the wife wants to spend the vacation in a cabin in the mountains, the husband wants to book a luxury hotel by the sea. When talking about what a good vacation means to them, the husband reveals that it is most important for him to be at the sea and go surfing. He also thinks that it is most relaxing not having to deal with housework and stay at a luxury hotel, but he could also be satisfied by staying in a cabin. On the other hand, the wife definitely wants to spend their vacation hiking because this is what she enjoys most. She likes simple vacations and staying in a cabin, but she could also be satisfied by staying in a luxury hotel.

As can be seen in this example, the interests of husband and wife are opposed to each other: As destination, the wife prefers the mountains whereas the husband prefers the sea. As accommodation, the wife prefers a cabin whereas the husband prefers a luxury hotel. At the same time, accommodation and destination share the same interest-weighting: For both spouses, destination is more important than accommodation. This interest-weighting leads to a higher priority of the destination sea than the accommodation luxury hotel for the husband and a higher priority of the destination mountains than the accommodation cabin for the wife. This situation is purely fixed sum, because the same weightings of opposed interests lead to the same priority of negotiation issues with opposed preferences. To resolve this situation, either husband or wife have to compromise and wait for next year's vacation or they have to find a destination, located near both the sea and the mountains where the two of them can do their daily activities by themselves.

The opposite situation occurs if negotiation parties' interests are not opposed but completely in line with each other (Thompson, 1990). In a situation like this, where all

interests are *compatible*, a negotiation would not even be necessary at all, because the gain of one party goes along with the gain of the other party (Thompson, 1995). In this case, not even interest-weightings matter.

However, in the majority of situations "interests are neither completely opposed nor completely compatible, allowing agreements that satisfy both parties' aspirations to a greater extent than a simple, 50-50 compromise" (de Dreu, Weingart, & Kwon, 2000, p. 889) and maximize both joint and personal gain (Hyder, Prietula & Weingart, 2000; Lax & Sebenius, 1986; Pietroni, van Kleef, de Dreu, & Pagliaro, 2008). A negotiation with a structure like this is called an *integrative* or *variable-sum negotiation* (Walton & McKersie, 1965).

2.1.3 Characterizing integrative Negotiations: Differential Interest-weightings between Parties

„Most negotiations are not purely fixed sum" (Thompson & Fox, 2001, p. 225). Instead, parties' interests are *convergent* due to their differential importance weightings (Smith, 1987). Although the interests of the involved parties are still opposed to each other, the different weightings of those interests result in a different prioritization of negotiation issues and therefore provide negotiation parties with the opportunity to maximize their profits jointly (Walton & McKersie, 1965).

To give an example for this situation, please think back to the matrimonial dispute about the next year's vacation. At first sight, the situation appears to be the same: The wife wants to spend the vacation in a cabin in the mountains; the husband wants to book a luxury hotel by the sea. However, this time the situation is a little different (cf. Thompson, 1990). When talking about what a good vacation means to them, the husband reveals that a good vacation means for him not having to deal with anything related to housekeeping, eating delicious food and being able to enjoy some luxury. Whether the activities at the destination are surfing or hiking is not that important to him, although he prefers surfing. The wife on the

other hand definitely wants to spend the vacation hiking. She likes simple vacations and staying in a cabin, but she could also stay in a luxury hotel. Consequently, for the husband, accommodation has a higher weight (i.e., importance) than destination, while the wife weighs the destination higher than accommodation. The two parties' divergence in the weighting of the two interests leads to different priority rankings of the two negotiation issues of accommodation and location. Therefore, the different interest-weightings provide integrative potential for the couple. Agreeing on a vacation in a luxurious lodge in the mountains, they choose the two options that serve both the husband's and the wife's highly-weighted interests best. In this way, they maximize their joint outcomes and both members of the marriage are happy, at least until the next vacation needs to be planned.

To sum up, in integrative negotiations, the gain of one party does not necessarily result in a direct loss for the other party. Instead, all parties can jointly maximize their outcomes (de Dreu & Carnevale, 2003). To attain high joint (i.e., integrative) negotiation outcomes, negotiators can apply several strategies.

2.1.4 Maximizing joint Outcomes: Integrative Negotiation Strategies

In situations where the parties' interests are convergent, negotiating parties can achieve high joint outcomes (i.e., mutually beneficial agreements) with the help of several strategies. One creative way of approaching the challenge of increasing joint outcomes is increasing the amount of negotiation issues that serve the highly-weighted interests of the involved negotiation parties (Pruitt & Carnevale, 1993; Trötschel, 2002). Yet, this strategy of *expanding the pie* is not always possible and does not necessarily provide an easy solution for the distribution of the already existing negotiation issues.

An alternative or supplement strategy is therefore to engage in "making trade-offs between important and unimportant issues" (de Dreu et al., 2007, p. 612) over the course of the negotiation. This systematic exchange of concessions is called *logrolling* and allows for

cooperative behavior without decreasing the individual profits of the negotiation parties (e.g., Moran & Ritov, 2007; Pruitt & Carnevale, 1993; Tripp & Sondak, 1992). In a large number of studies, logrolling has been found to be a major predictor for negotiation parties' high joint outcomes – meaning that the highly-weighted interests of both parties are met (de Dreu, Weingart et al., 2000). Logrolling can be facilitated if the negotiation parties gain an insight into the preference structure of both parties in the negotiation (Bazerman & Carroll, 1987; Bazerman & Neale, 1992; Moran & Ritov; 2007; Pruitt & Lewis, 1975; Thompson, 1990; Thompson & DeHarpport, 1994; Weingart, Thompson, Bazerman, & Carroll, 1990). This insight can be gained by explicitly exchanging information about the interests and their weightings that underlie the parties' preferences (Thompson, 1991) or by reading from the development of the other party's concessions and claims over the course of the negotiation (e.g., Carnevale, Pruitt, & Seilheimer, 1981; de Dreu et al., 2007; Olekalns & Smith, 2003; Tutzauer & Roloff, 1988; Weingart et al., 1990; Weingart, Bennett, & Brett, 1993).

Another strategy to attain high joint outcomes are negotiators' *first offers*. In distributive negotiations, abundant research demonstrated that making aggressive first offers by claiming a high proportion of the negotiation issues leads to an advantage (e.g., Galinsky et al., 2005; Galinsky & Mussweiler, 2001; Galinsky et al., 2002). First offers establish an anchor for both the initiator and the recipient of the offer (Galinsky & Mussweiler, 2001). "When estimating an unknown value, a previously primed value appears to serve as a starting point for the cognitive process, thus yielding an outcome that is often overly influenced by the initial anchor" (Moran & Ritov, 2002, p. 104). Recently, the composition of first offers has been identified as a potential driver of joint outcomes (Moran & Ritov, 2002; Ritov, 1996; Sinaceur et al., 2013). For instance, so called *logrolling offers* (Moran & Ritov, 2002) are comprised of tough demands on high priority issues (i.e., issues that serve the party's highly-weighted interests) and concessions on low priority issues (i.e., issues that only serve interests

with a low weighting). If the low priority issues of one party resemble the high priority issues of the other one, logrolling offers pave the way to agreements in which every party attains its high priority issues. This is because, like regular first offers, a logrolling offer at the beginning of the negotiation establishes an anchor for the negotiation issues. The counteroffer of the recipient is influenced by this first offer and therefore reflects the preference structure of both parties better than a counteroffer reacting to an offer that does not differentiate between high and low priority issues. In this way, logrolling offers at the beginning of the negotiation lead to higher joint outcomes.

Similar to logrolling, first offers also provide the opportunity for negotiation parties to understand the underlying interest-weightings of the opponent (Moran & Ritov, 2002). However, there are two important differences between logrolling in the form of first offers at the beginning of the negotiation and logrolling over the course of the negotiation: Their origin and their impact. With regard to their *origin*, the origin of first offers lies *before* the negotiation, because negotiation parties have to think about and come up with first offers before the negotiation has started and any interaction with the other party has taken place (e.g., Galinsky et al., 2005; Galinsky & Mussweiler, 2001). Therefore, first offers are highly dependent on what happens before the negotiation. In contrast, logrolling occurs *during* the negotiation after the first offers. Consequently, logrolling is influenced by what happens over the course of the negotiation, such as information exchange (Thompson, 1991). "With correlations ranging from .72 to .93" (Galinsky, Ku, & Mussweiler, 2009, p. 357) and explained variance of more than 50 percent (Galinsky et al., 2005), several studies demonstrated that the *impact* of first offers on the negotiation outcomes is higher than the behavior over the course of the negotiation (Yukl, 1974), to which logrolling belongs. This higher impact is due to the anchoring effect first offers profit from (Galinsky & Mussweiler, 2001).

2.1.5 Making it hard to succeed: Special Challenges of integrative Negotiations

Formulating advantageous first offers that reflect one's own priorities, gaining insights into the interests of the other party and engaging in logrolling over the course of the negotiation are highly complex tasks that require considerable information elaboration efforts by both or at least one party (Thompson, 1991; de Dreu, Koole, & Steinel, 2000). In addition, the structure of a negotiation can be very complex and challenging to disentangle. Most negotiations are not purely fixed-sum. However, they are typically not purely variable-sum and integrative either (Clopton, 1984; Walton & McKersie, 1965). In the same negotiation, there can be compatible, incompatible and convergent interests, leading to the existence of compatible, distributive and integrative negotiation issues in the same negotiation. Moreover, negotiation parties are torn between two ways of maximizing their individual gain: Increasing the joint outcomes of the involved negotiation parties or claiming a large proportion of high and low priority issues to maximize their individual gain at the expense of the other party or parties (Pruitt, 1983).

The structural, motivational and interpersonal complexity that goes along with these mixed motive interactions poses many challenges on the involved negotiation parties with regard to their information elaboration (Neale & Bazerman, 1991). These challenges of information elaboration can be categorized into two main areas: First, the challenge of gathering all relevant information that is necessary to find integrative agreements, and second, the challenge of processing and integrating the available information (de Dreu, Koole et al., 2000). These challenges make it difficult for negotiation parties to identify their own and the other parties' underlying interests and consequently impede the chance to arrive at high joint outcomes (Lytle, Brett, & Shapiro, 1999). Therefore, it is important to decide who should conduct the negotiation. Research suggests that this should be groups rather than individuals.

2.2 The Involvement of Groups in Negotiations

2.2.1 Being on top of Things: The Advantages of Groups over Individuals in Negotiations

Research and the prevalence of groups in the context of negotiations suggest that groups handle the challenges of information elaboration better than individuals[2], and therefore, hold advantages in the pursuit of high distributive and integrative agreements compared to solo negotiators (Cohen & Thompson, 2011; Hinsz, Tindale, & Vollrath, 1997; Morgan & Tindale, 2002; Polzer, 1996; Sally & O'Connor 2003; Thompson et al., 1996).

With regard to the challenge of gathering all relevant information, complex negotiations require the knowledge, expertise and perspectives from a variety of functions or geographical locations that are rarely held by a single individual. Instead, they are brought to the table by several experts forming a negotiation group (Behfar, Friedman, & Brett, 2008; Brett et al., 2009; Bright & Parkin, 1998; Thompson & Fox, 2001). In addition, different stakeholders are usually affected by the negotiation who should be involved in the decision making process in order to reach a negotiation outcome that is supported and accepted by all constituents of the negotiation (Sally & O'Connor, 2003). Therefore, it is more likely to have all the important information, perspectives and interests available during the negotiation process when groups are involved instead of individuals.

With regard to the challenge of processing and integrating the available information, groups can use the capacity of multiple individuals to identify, store, retrieve and process information (Hinsz et al., 1997). Therefore, groups tend to be more effective than individuals in handling the structural and interpersonal complexity of a negotiation than individuals.

[2] This holds true even though groups often face pitfalls such as motivation losses (de Dreu, Nijstad, & van Knippenberg, 2008; Hackman, 1987; Latane, Williams, Harkins, 1979; Wegge, 2004), coordination losses (Thompson & Fox, 2001) and an increased competitiveness (Schopler & Insko, 1992).

First, groups are more equipped to "attend to both their own and the other side's interests and constraints" (Sally & O'Connor 2003, p. 884) during their pursuit of high joint outcomes. This is because they are able to divide labor and combine group members' skills. *Second*, as groups have more cognitive resources than individuals, they handle intellectual problems better (Laughlin, Hatch, Silver, & Boh, 2006), generate more ideas, can pool information and balance each other's errors (Polzer, 1996). *Third*, they have higher problem solving skills than individuals, because they ask more questions about their counterparts' preferences (Thompson & Hastie, 1990), exchange more information (Thompson et al., 1996) and form more accurate judgments of their counterparts' interests, preferences, and priorities (Thompson & Hastie, 1990). These qualities in turn help increase individual and joint outcomes (Cohen & Thompson, 2011; Thompson, 1990, 1991). *Forth*, the probability that one member of a group uncovers the integrative potential in a negotiation is simply higher than the probability of a single individual (Hüffmeier et al., 2012).

With regard to the interpersonal complexity of negotiations, accountability pressures from constituents affect groups less than solo negotiators, because these pressures are distributed between group members (O'Connor, 1997).

This research revealing the advantages of negotiation groups when dealing with the challenges of gathering, processing and integrating information explains the observation that "in practice, negotiation groups have become the rule rather than the exception (Gelfand & Realo, 1999)" (Backhaus, van Doorn, & Wilken, 2008, p. 367). In negotiations, groups can be involved in different ways, which is reflected in the type of interdependence that is present.

2.2.2 Characterizing Forms of Group Involvement: Interdependence in Negotiations

The involvement of groups in negotiation research can typically be characterized by the interdependence of group members due to connecting elements such as shared goals, common fate or simply group membership (Trötschel, Hüffmeier, & Loschelder, 2010). For

negotiations with group involvement, four types of interdependencies can be differentiated. The first type resembles *between-group interdependence*. It is located between two or more groups negotiating with each other. This type of interdependence is assessed by research on group-on-group negotiations (Naquin & Kurtzberg, 2009; for a review see Funk & Hott, 2013). The second type is *constituent-representative interdependence*. It is located between a group and an individual group member who represents the group as his or her constituent in an interpersonal negotiation against a member of another group (e.g., Loschelder & Trötschel, 2010; Reinders Folmer, Klapwijk, Cremer, & van Lange, 2012). This type of interdependence is assessed by research on representative negotiations. Previous research subsumed group-on-group and representative negotiations under the term of *intergroup* negotiations as they both happen in an intergroup context (Trötschel et al., 2010). The third type can be described by *within-group interdependence*. It is located within a negotiation group. This type of interdependence is assessed by research on small group negotiations like multiparty negotiations (Polzer, Mannix, & Neale, 1998) or intra-group negotiations (de Wit, Jehn, & Scheepers, 2011). Finally, the fourth type of *interdependence* is located *between different negotiation phases* and hence involves two or more of the first three interdependencies. This could be, for instance, the combination of an intra-group negotiation (i.e., within-group interdependence) with a subsequent group-on-group (i.e., between-group interdependence) or representative negotiation (i.e., constituent-representative interdependence). Research on this type of interdependence is rare and has not been studied in detail or labeled in literature. Due to this combination of different types of interdependencies, it can be described as research on *hybrid forms of group involvement*.

2.2.2.1 Assessing between-group Interdependence: Research on group-on-group Negotiations

Group-on-group (cf. Naquin & Kurtzberg, 2009) negotiations describe "a situation in which two or more people act as a single party to determine the allocation of resources with another party who is perceived to have some differing interests" (Thompson & Fox, 2001, p. 251; see also Carnevale & Pruitt, 1992; Cohen, Leonardelli, & Thompson, 2010; Thompson & Hastie, 1990; Thompson et al., 1996). The interdependence between those groups results from the fact that the behavior of one group affects the behavior and outcomes of the other group and vice versa. If one group walks away from the negotiation, for instance, the result for both groups is an impasse and they are stuck with their best alternatives to a negotiated agreement (e.g., Galinsky et al., 2005).

One line of research explored, what factors influence the quality of outcomes between negotiation groups. Naquin & Kurtzberg (2009) found that high levels of trust in the other group increased joint outcomes and reduced the rate of impasses (i.e., non-agreements) in distributive negotiations. Halevy (2008) could show that different preferences within negotiation groups lead to lower joint outcomes. The major line of research, however, has been interested in comparing group-on-group negotiations with one-on-one negotiations regarding their processes and outcomes in distributive and integrative negotiations (e.g., Cohen, Leonardelli et al., 2010; Cohen, Meier, Hinsz, & Insko, 2010; Morgan & Tindale, 2002; O'Connor, 1997; Polzer, 1996; Thompson et al., 1996). On one hand, this comparative research typically revealed higher integrative outcomes in group-on-group versus one-on-one negotiations (see Section 2.2.1 for a more detailed description; see also Cohen & Thompson, 2001). On the other hand, it also indicated a higher risk of non-agreements and lower outcomes for group-on-group negotiations in social dilemma games (Morgan & Tindale, 2002) due to a higher level of competitiveness. This difference in the level of competitiveness

is also called the interindividual-intergroup discontinuity effect (Schopler & Insko; 1992; Cohen, Meier, et al., 2010).

While this comparative research between group-on-group and one-on-one negotiations conveys the impression that these two forms of negotiations fundamentally differ from each other, one type of one-on-one negotiations is strongly related to negotiations between groups. This relationship can be explained by the next type of interdependence – the interdependence between constituent groups and their representatives

2.2.2.2 Assessing the constituent-representative Interdependence: Research on Representative Negotiations

In many situations, not every group member can be involved in the complete negotiation process. "Discussions between political parties, negotiations between unions and employers, diplomacy between nations – in countless situations, representatives make decisions on behalf of people who are not personally involved in the interaction" (Reinders Folmer et al., 2012, p. 1047; see also Breaugh & Klimoski, 1977; Frey & Adams, 1972; Gelfand & Realo, 1999; Lax & Sebenius; 1986; Rubin & Sander, 1988; Steinel et al., 2010). These spokespersons are individual group members who represent the group's interests in a one-on-one negotiation with a representative of the other group (Carnevale & Pruitt, 1992; Pruitt & Carnevale, 1993; Walton & McKersie, 1965). Hence, the relationship of constituent group and representative is characterized by interdependence: The group depends on the performance of the representative in the upcoming negotiation whereas the representative depends on the information he or she receives from the group as well as other factors such as the group's support and trust. Therefore, even though only two individuals are present at the bargaining table, a representative negotiation truly takes place in an intergroup context (Trötschel et al., 2010).

This situation of interpersonal interaction in an intergroup context poses special challenges onto the group representatives (Pruitt & Carnevale, 1993). According to the boundary-role model of group representation (Adams, 1976), "representatives must take on a specialized boundary role to deal with the members of both the outgroup and the ingroup" (Trötschel et al., 2010, p. 742). While they have to pursue the interests and preferences of their constituent group, they need to create and maintain a working relationship with the other representative in order to find a settlement (Frey & Adams, 1972; Friedman & Podolny, 1992; Holmes, Ellard, & Lamm, 1986) and may even have personal interests they would like to pursue (Aaldering, Greer, van Kleef, & de Dreu, 2013). At the same time, they usually do not have the opportunity to profit from group resources like the higher cognitive capacity of a group (Hill, 1982; Laughlin et al., 2006), real time consultations and caucusing (Thompson et al., 1996), role allocation (e.g., Brodt & Tuchinsky, 2000), shared responsibility and social support (O'Connor, 1997).

Due to these major challenges, research on representative negotiations has been primarily interested in better understanding how representatives deal with those challenges. Various studies investigated how variables such as constituency accountability (Ben-Yoav & Pruitt, 1984; Klimoski & Ash, 1974), representatives' status (Haccoun & Klimoski, 1975), prototypicality (van Kleef, Steinel, van Knippenberg, Hogg, & Svensson, 2007) and role-evoked goals or expectations (Reinders Folmer et al., 2012) influence representatives' enactment of negotiation strategies and outcomes during the representative negotiation.

Both research on group-on-group negotiations as well as representative negotiations focus on the processes and outcomes between the negotiation parties. However, interdependencies are also highly important within negotiation parties. This type of interdependence is the subject of research on small group negotiations.

2.2.2.3 Assessing within-group Interdependence: Research on Small Group Negotiations

Small group negotiations typically describe how groups make resource allocation decisions internally (Beersma & de Dreu, 1999, 2002) in order to deal with the interdependence of the single group members. "To make a decision, group members must reconcile conflicting preferences on a number of issues" (Weingart et al., 1993, p. 504; see also Brett, 1991). Small group negotiations differ from each other in the degree to which they incorporate competitive and cooperative components (Mannix, Thompson, & Bazerman, 1989). Two streams of research correspond to the two poles of this *competition – cooperation continuum* of small group negotiations: Multiparty negotiations and intra-group negotiations.

Multiparty negotiations tend to be located closer to the competitive pole of small group negotiations. Although this type of negotiation could also involve multiple groups negotiating with each other (Thompson & Fox, 2001), the typical setting is a negotiation within a small group of individuals (Polzer et al., 1998). In many multiparty negotiation tasks, the single group members tend to assume very individualistic positions with conflicting interests, preferences and information and only form coalitions when it suits their own interests (Mannix et al., 1989; Polzer et al., 1995, 1998). In these cases, the common goal, a major criterion for the definition of groups (Johnson & Johnson, 2002), is rather weak and converges with the individual goal of avoiding a detrimental impasse (Polzer et al., 1998).

In *intra-group negotiations* on the other hand, the common goal can be very strong for the members in a group and diverging interests and preferences only occur because group members have different convictions about what is best for the group, for instance due to different information (de Wit et al., 2011). While multiparty negotiations "are typically concerned with the distribution of specific resources" (de Wit et al., 2011, p. 209), intra-team negotiations "are concerned with synthesizing and choosing the best ideas, options and viewpoints to achieve a certain group goal" (de Wit et al., 2011, p. 209). The transition

between multiparty and intra-group negotiations is smooth and a couple of studies have been experimenting with different degrees of intra-group competition or varying strengths of group goals (Schei & Rognes, 2005; Swaab, Postmes, van Beest, & Spears, 2007; Velden, Beersma, de Dreu; 2007; Weingart et al., 1993; Weingart, Brett, Olekalns, & Smith, 2007). What holds true for all different forms of small group negotiations is that the key challenge is to reconcile different interests or interest-weightings within a group (de Wit et al., 2011; Polzer et al., 1998).

2.2.2.4 Assessing Interdependence between Negotiation Phases: Research on Hybrid Forms of Group Involvement

Although the three previous types of interdependencies have attracted considerable research efforts, group-on-group negotiations, representative negotiations and small group negotiations have been treated separately in the past. Little is known about the role of the group in representative negotiations. In a similar manner, research on group-on-group negotiations focused on between-group processes and outcomes while research on small group negotiations focused on within-group processes and outcomes. Yet, these different ways of group involvement may frequently occur together: Especially in negotiations where "parties are (…) composed of individuals with differing beliefs, interests, skills and goals" (Thompson & Fox, 2001, p. 249), within-group processes before a group-on-group or representative negotiation can be assumed to be of crucial importance. This relationship between the pre-negotiation phase and the subsequent negotiation resembles the fourth interdependence that may occur in negotiations with group involvement: the *interdependence between negotiation phases* that involve within-group and between-group processes. Some evidence from the context of representative and group-on-group negotiations suggests that what happens within a group before the negotiation has important consequences for representative as well as for group-on-group negotiations:

In the context of representative negotiations, a number of studies started moving their attention to the role of the group and examined how characteristics and outcomes of meetings within the group before the representative negotiation could influence representatives' behavior and outcomes during the negotiation. In the studies by Steinel and colleagues, representatives learned about the diverse perspectives their fellow group members had on the way the representatives were supposed to pursue the group's interests in the subsequent negotiation (Steinel, de Dreu, Ouwehand, & Raminez-Marin, 2009; Steinel, Harinck, Greer, & Parks, 2012). As no direct interaction between the group members took place prior to the negotiation, it was up to the representatives in these studies to make a decision on their strategy, based on these diverse perspectives of group members. In a similar manner, other studies assessed the effect of groups' competitiveness and status (Aaldering & de Dreu, 2012; Steinel et al., 2009), intra-group conflict (Frey & Adams, 1972) as well as group's trust in their representatives (Frey & Adams, 1972; Wall, 1975a, 1975b) on representatives' behavior and outcomes. Moreover, representatives' involvement in the group's decision-making (Jones & Worchel, 1992), their status and prototypicality in the groups prior to the negotiation (Lamm, 1973; Steinel et al., 2010) have been subjected to research efforts. All of these studies provide evidence that what happens within the constituency group before the negotiation is important for the subsequent representative negotiation. However, in the assessment of these antecedents, the within-group interdependencies before the negotiation were not considered, as no real within-group interaction took place. In most representative negotiations, however, the constituency group has a more active part and prepares the negotiation together with the representative. In these preparations, the group has the chance to elaborate group members` diverse perspectives that may occur like those in the studies by Steinel and colleagues (Steinel et al., 2009; Steinel et al., 2012). In this way, the constituency groups have the chance to provide their representatives with a clear direction for the subsequent negotiation. Consequently, a direct assessment of how constituency groups deal with challenges such as

group members' divergent perspectives before the negotiation and how this influences the subsequent representative negotiation still remains to be completed.

In the context of group-on-group negotiations, research demonstrated that experienced conflict (Keenan & Carnevale, 1989), group diversity (Zhong, 2001), acquaintanceship (Brodt & Dietz, 1999; Peterson & Thompson, 1997; Thompson et al., 1996) and different preferences (Halevy, 2008) within groups before the negotiation influence processes and outcomes during group-on-group negotiations. Although these antecedents are also rooted before the start of the negotiation, the studies did not observe a within-group interaction prior to the negotiation in which it could be assessed how the negotiation groups dealt with those antecedents. Therefore, these studies did not consider that "crucial as it is, the around-the-table negotiation is only a later part of a larger process needed to resolve conflicts" (Saunders, 1985, p. 249).

Especially in complex negotiations, where group members are chosen to contribute various information about interest-weightings and preferences, groups and representatives need the chance to "really use, process and take advantage of each other's diverging opinions" (de Wit et al., 2011, p. 210). This chance is provided by small group negotiations before the negotiation in which group members try to integrate the diverse information and interests within their group (Beersma & de Dreu, 1999, 2002; Brett, 1991). The importance of small group negotiations prior to group-on-group negotiations has frequently been stated in theoretical work on pre-*negotiation preparations*[3] (Mannix, 2005; Peterson & Lucas, 2001; Rognes, 1995; Roloff & Jordan, 1991, 1992). Moreover, as observed by Bonner, Okhuysen, and Sondak (2011), such decision making processes are usually included in empirical negotiation research to provide representatives and group members with the chance to discuss and prepare the upcoming negotiation within their group (e.g., Halevy, 2008; Thompson et al., 1996). However, as can be seen in the research on representative and group-on-group

[3] The terms negotiation preparation, pre-negotiation preparation and preparation phase are used interchangeably.

negotiations presented above, this joint preparation of the negotiation within the groups and its consequences for later negotiation phases has received almost no empirical research interest on its own. Bonner and colleagues (2011) are among the few researchers paying attention to this important intra-group phase before group-on-group and representative negotiations. They examined the decision-aggregation of groups before a negotiation and found that intra-group decisions were influenced by the majority structure within the group and the competitiveness of the group members' preferences. Unfortunately, the authors did not report the effects of the within-group negotiation preparation on the outcomes of the subsequent group-on-group negotiation. Up to now, I am aware of only two studies that assess the impact of the within-group negotiation preparation and its outcomes on the subsequent negotiation behavior and outcomes in group-on-group or representative negotiations. Backhaus and colleagues (2008) found that a high cohesion and participative decision making within groups before the negotiation lead to participative decision making and a less contenting negotiation style during the negotiation and finally to higher joint outcomes. Swaab, Postmes, and Eggins (2011) found, that within-group discussions increased the understanding of groups' underlying interests and in this way increased economic outcomes.

To conclude, the theoretical and empirical work on the combination of small group negotiations with subsequent group-on-group or representative negotiations (e.g., Backhaus et al., 2008; Bonner et al., 2011; Peterson & Lucas, 2001; Rognes, 1995; Roloff & Jordan, 1991; 1992; Swaab et al., 2011) suggests that negotiations typically consist of both within- and between-group processes and outcomes. As Carnevale and Pruitt already put it in 1992 "what happens within the team may have important consequences for the between-group negotiation. Although Walton & McKersie (1965) drew attention to the importance of within-group negotiation more than 25 years ago, little is known about these effects" (p. 569). When looking at the antecedents of group-on-group as well as representative negotiations' processes

and outcomes that have been subjected to previous research (e.g., diverse preferences for negotiation strategies, intra-group conflict, group diversity and group members' involvement) it becomes clear that one major challenge for negotiation groups is to elaborate these sources of diversity before and during the negotiation. Therefore, it is important to assess how group members elaborate diverse information within their group before and during the negotiation and how the interdependence between those two phases appears.

2.3 Information Elaboration in Negotiations with Group Involvement

The complexity of negotiations comes from two major sources: First, the incompatible, compatible or convergent interests between the two involved negotiation parties (e.g., Thompson, 1990) and second, the incompatible, compatible or convergent interests within the group (Bonner et al., 2011; Brett et al., 2009; de Witt et al., 2011; Peterson & Thompson, 1997; Schei & Rognes, 2005; Weingart et al., 2007). For coping with these two sources of complexity, groups need to engage in the process of exchanging, discussing and integrating the available information relevant to the task. This process is called *information elaboration* (cf. van Knippenberg, de Dreu, & Homan, 2004; Homan et al., 2007a, 2007b). For dealing with diverse information, interest-weightings and preferences between the groups, *between-group information elaboration* is required, meaning that the negotiating groups have to exchange and integrate information between each other. For dealing with diverse information, interest-weightings and preferences within the group, each group in the negotiation has to engage in *within-group information elaboration*, meaning that the members of one group have to exchange and integrate the information, interest-weightings and preferences of all group members. So far, negotiation research has focused on assessing information elaboration between groups, a key driver for reaching integrative agreements.

2.3.1 Reaching integrative Agreements: Information Elaboration between Groups

In the majority of negotiations, a high proportion of the information negotiation parties possess is unshared. Especially, "each party's priorities and relative weighting of issues are likely to be hidden from their counterpart" (Cohen & Thompson, 2011, p. 7). However, this information is crucial for trading the negotiation issues according to the parties' interest-weightings and arriving at integrative agreements (e.g., de Dreu, Weingart, et al., 2000; Thompson, 1991; Thompson & Hrebec, 1996). Therefore, information elaboration between negotiating groups is essential for high joint outcomes (Putnam & Jones, 1982; Tutzauer, 1990). Information elaboration means that groups have to "exchange information about their interests and priorities, work together to identify the true issues dividing them, brainstorm in search of alternatives that bridge their opposing interests, and collectively evaluate these alternatives from the viewpoint of their mutual welfare" (Pruitt & Rubin, 1986, p. 139).

The first step of information elaboration between negotiating groups is exchanging relevant information in order to make it available to both negotiating parties (Bazerman & Carroll, 1987; Pinkley, Griffith, & Northcraft, 1995; Thompson, Peterson and Kray, 1995). Negotiating parties can better develop an accurate understanding of each other's interest-weightings and the resulting priorities of negotiation issues when they exchange information (Olekalns & Smith, 1999, 2003; Thompson & Hastie, 1990; Thompson et al., 1996; Tutzauer & Roloff, 1988). Otherwise, the problem at hand will be poorly defined and potential integrative solutions will be left undiscovered (Thompson, 1991; Walton & McKersie, 1965). Behavior supporting the exchange of relevant information can be observed as seeking information about the counterparts' interests and preferences and providing accurate information (Lewicki, Hiam, & Olander, 2007; Polzer, 1996; Thompson, 1991; Thompson et al., 1996; Weingart et al., 1990; Weingart et al., 2007; Weingart, Olekalns, & Smith, 2005). Information can be sought by asking questions about the other groups' interests (e.g.,

Thompson & Hastie, 1990) or by inferring the opponents priorities from the development of their concessions and claims on the available issues over the course of the negotiation (e.g., Carnevale et al., 1981; Olekalns & Smith, 2003; Tutzauer & Roloff, 1988; Weingart et al., 1990; Weingart et al., 1993).

The second step is the accurate processing of the available information about the parties' interests and their integration to identify a solution allowing for mutual gain (Bazerman & Carroll, 1987; Carroll, Bazerman, & Maury, 1988; Moran & Ritov, 2007). If the negotiation groups do not accurately process the available information, they will fail to understand the parties' preference structure (Pinkley et al., 1995). Information processing and integration can occur via discussions between the negotiating parties as described by Pruitt and Rubin (1986) in their above statement. In addition, some degree of individual processing will be important, as well to determine which pieces of information are relevant and which implications they have (Bazerman & Carroll, 1987; Carroll et al., 1988). The third step is to translate this newly gained insight into decisions and behavior with regard to the negotiation issues at hand (Bazerman & Carroll, 1987). Groups have to adjust their concessions and demands to the information they have gained and processed about the relationship between their own and their opponents' interests and preferences in order to logroll and arrive at integrative agreements.

The importance of information elaboration between negotiating parties can be best seen when watching the consequences of its failure. Parties which do not exchange information about their interest-weightings and the resulting priorities of negotiation issues (e.g., Hyder et al., 2000; Olekalns & Smith, 2003; Thompson, 1991; Tutzauer & Roloff, 1988; Weingart, Hyder, & Prietula, 1996), which process information incorrectly (Pinkley et al., 1995), and which do not draw correct conclusions from the information given (Thompson & DeHarpport, 1994), do not achieve high joint outcomes. In contrast, high levels of information

elaboration increase negotiating parties' understanding of each other's interest-weightings (Pruitt, 1981; Thompson & Hastie, 1990) which is in turn associated with high joint outcomes (Carnevale et al., 1981; Kimmel, Pruitt, Magenau, Konar-Goldband, & Carnevale, 1980; Pruitt & Lewis, 1975; Weingart et al., 2007). Some studies found direct relationships between information exchange and joint outcomes (Thompson et al., 1996; Tutzauer & Roloff, 1988; Weingart et al., 1996), even when just one negotiation party sought and provided information (Thompson, 1991). More specifically, the exchange of information about priorities and interests seems to be more effective for obtaining high joint outcomes than the exchange about positions and preferences (e.g., Hyder et al., 2000; Olekalns, Smith, & Walsh, 1996; Weingart & Olekalns, 2004).

To sum up, various studies have demonstrated that information elaboration between negotiating parties is of crucial importance for joint outcomes in negotiations with integrative potential. However, "a large class of inter-group competitions is characterized by conflicts of interest within as well as between the competing groups" (Bornstein, Rapoport, Kerpel, & Katz, 1989, p. 423). Therefore, in order to resolve the intergroup competition in a mutually beneficial way, groups do not just have to identify the interests and priorities of the other party, but also have to be aware of their own interests and preferences. In correspondence to this notion, Thompson and Hastie (1990) state that for high joint outcomes, one needs to be aware of "one's own interests, and the other party's interests" (p. 103).

2.3.2 Integrating diverse Interest-weightings: Information Elaboration within Groups

While conflicting interests within a group should be an exception due to group members' common goal to maximize the group's outcome (de Wit et al., 2011), different interest-weightings like in the employers' group in the collective bargaining example can be expected to occur quite often. Especially in complex negotiations that require the knowledge, expertise and perspectives from a variety of functions or geographical locations, group

members are likely to hold different subsets of this knowledge, expertise and perspectives, leading to different interest-weightings within the group (Behfar et al., 2008; Brett et al., 2009; Bright & Parkin, 1998; Thompson & Fox, 2001). Integrating these diverse interest-weightings within the group is important to avoid internal conflicts or coordination losses during the negotiation (Halevy, 2008) that may result when group members' different interest-weightings lead to differences in group members' priorities of the negotiation issues. Therefore, information elaboration within negotiation groups should be at least equally important for the outcomes of group-on-group and representative negotiations as information elaboration between groups.

Parallel to between-group information elaboration, within-group information elaboration includes "the exchange of information and perspectives, individual-level processing of the information and perspectives, the process of feeding back the results of this individual-level processing into the group, and discussion and integration of its implications" (van Knippenberg et al., 2004, p. 1011). Consequently, the components of information elaboration (i.e., information exchange, accurate processing and implementation) are similar in the within-group and the between-group setting. Within-group information elaboration can take place during the preparation phase *before* an intergroup negotiation as well as *during* an intergroup negotiation. Over the course of the intergroup negotiation, individual group members have the chance of gaining new insights, which need to be exchanged and integrated within the group. For instance, group members can infer opponents' priorities from their preference statements, concessions and claims (e.g., Carnevale et al., 1981; Olekalns & Smith, 2003; Tutzauer & Roloff, 1988; Weingart et al., 1990; Weingart et al., 1993) during the intergroup negotiation.

Various studies in the field of diversity research and group decision making show that in groups with diverse information, a high within-group information elaboration leads to a

higher task performance (e.g., Homan et al., 2008; Homan et al., 2007a, 2007b; Kooij-de Bode, van Knippenberg, & van Ginkel; 2008; van Ginkel & van Knippenberg, 2009). However, in the context of negotiation research, information elaboration within negotiation groups has been neglected so far. The main reason for this neglect is that research usually assumes *interest homogeneity* within negotiation groups (Northcraft, 2011) – meaning that "team members have similar preferences and priorities" (Cohen & Thompson, 2011, p. 4; see also Brodt & Thompson, 2001; Morgan & Tindale, 2002; O'Connor, 1997; Polzer, 1996; Thompson et al., 1996) due to identical interest-weightings.

Two studies on group-on-group negotiations provide initial evidence for the importance of within-group information elaboration prior to the negotiation. Swaab and colleagues (2011) could demonstrate that discussing information about the main goals and interests within the group before the negotiation leads to a deeper understanding of the own parties' interests and in this way to higher economic outcomes in the subsequent negotiation. This study did not involve diverse interest-weightings or priorities within a group, and therefore provides only indirect evidence for the importance of information elaboration in groups with diverse interest-weightings. The findings of Halevy (2008) reveal what happens to the joint outcomes in group-on-group negotiations if a group fails to elaborate diverse preferences. He compared the joint outcomes of groups whose members held opposed preferences with groups whose members held homogeneous preferences. As groups with opposed preferences obtained lower joint outcomes than groups with identical preferences, it can be inferred that not being able to exchange, discuss and integrate diverse information within a negotiation group leads to low joint outcomes.

Based on this preliminary evidence for the importance of within-group information elaboration in negotiations with group involvement, the present research aims to expand the findings from diversity research and group decision-making to negotiations with group

involvement in order to gain new insights about the way negotiation groups deal with group members' diverse interest-weightings before and during the negotiation.

To understand why negotiation groups may discover, integrate and hence capitalize on members' diverse interest-weightings, it is important to find out more about the mechanisms that help or hinder information elaboration within these groups.

2.4 The Concept of Comparison Mindsets

In research on social cognition, mindsets have been defined as mental paradigms (Snyder, 1998), cognitive processes, procedures (Gollwitzer, Heckhausen, & Steller, 1990) or orientations (Todd et al., 2011) that get carried-over from one context to another without an explicit awareness of the individual (Bargh & Chartrand, 2000) and influence the attitudes (Taylor & Gollwitzer, 1995), expectations (Freitas, Gollwitzer, & Trope, 2004), perceptions (e.g., Gollwitzer & Bayer, 1999; Bayer & Gollwitzer, 2005) and behavior (Dijksterhuis & van Knippenberg, 1998) of individuals.

The concept of comparison mindsets was introduced in the context of the selective accessibility model (Mussweiler, 2001) to explain how individuals make judgments about a target (like themselves or other people) relative to a comparison standard (like other individuals or groups). According to Mussweiler, judgments are based on the knowledge and cognitions which are currently accessible and relevant for the judgment. Which knowledge is accessible depends on the type of hypothesis-testing individuals engage in when they form a judgment. There are two types of hypotheses that can be tested. The first hypothesis type is that the comparison target is similar to a standard. In contrast, the second hypothesis type is that the comparison target is dissimilar from the standard (Mussweiler, 2001). Since individuals are most likely to seek hypothesis-consistent information, "similarity testing increases the accessibility of knowledge indicating that the self is similar to the standard. Dissimilarity testing on the other hand, increases the accessibility of knowledge indicating

that the self is different from the standard" (Mussweiler, 2001, p. 501). Whether the similarity or difference hypothesis will be tested depends on the overall similarity, a judging individual perceived between the target and the standard (Mussweiler, 2003):

> As an initial step in the selective accessibility mechanism, judges engage in a quick holistic assessment of the target and the standard (E. E. Smith, Shoben, & Rips, 1974) in which they briefly consider a small number of features (e.g., category membership, salient characteristics) to determine whether both are generally similar or dissimilar. (…) If this assessment indicates that the target is generally similar to the standard, judges will engage in a process of similarity testing and test the hypothesis that the target is similar to the standard. If the initial assessment indicates that the target is dissimilar from the standard, however, judges will engage in a process of dissimilarity testing and test the hypothesis that the target is dissimilar from the standard" (p. 275).

Individuals' increased sensitivity towards similarities as a consequence of similarity-hypothesis-testing is called a similarity mindset, whereas individuals' increased sensitivity towards differences as a consequence of difference-hypothesis-testing is called a difference mindset (Ames, Mor, & Toma, 2013; Cheng & Leung, 2013; Todd et al., 2011). In a similarity mindset, information is sought and activated that suggests that the target (i.e., the self or other individuals) is similar to the standard (i.e., other individuals or groups). In a difference mindset, however, information is sought and activated that suggests that the target is different from the standard (Mussweiler, 2001, 2003). Based on this differentially activated information, individuals with a similarity mindset will arrive at the conclusion that the target is similar to the standard whereas individuals with a difference mindset will arrive at the conclusion that the target is different from the standard (Mussweiler, 2003).

Please think back to the collective negotiation in the introductory example; let us observe how a similarity or a difference mindset can be activated in a negotiation group. In

this example, the employer's negotiation group in a collective bargaining situation was introduced. This group consisted of three Caucasian male group members of a similar age with a similar educational background. Based on the initial holistic assessment of these features, the group members will probably arrive at the conclusion, that they are rather similar to one another. According to Mussweiler (e.g., 2003), these group members will now tend to engage in similarity testing within their group. This means, features indicating similarities within the group become more accessible and hypothesis-consistent information indicating similarities will be generated in the subsequent interaction (Mussweiler, 2003). Therefore, group members are now more likely to judge themselves and the other group members as being similar on other target dimensions as well, such as task-relevant information. Now imagine the negotiation group consists of an African American female, a Caucasian male and an Asian female. This group might conclude from their initial holistic assessment, that they are quite different from each other and therefore apply difference testing within their group during their subsequent interaction. The resulting accessibility and generation of hypothesis-consistent information (Mussweiler, 2003) leads to judgments that indicate differences between the group members on other target dimensions such as task-relevant information. To sum up, in the first group composition, a similarity mindset, meaning a special sensitivity for similarities, is very likely to be activated. On the other hand, the second group composition is likely to induce a difference mindset, meaning a special sensitivity towards differences.

In a study similar to this example, Mussweiler and Bodenhausen (2002) found that comparisons with an in-group member lead participants to engage in similarity-hypothesis-testing, indicated by a higher accessibility of self-knowledge that was consistent and consequently similar to the characteristics of the in-group member. In contrast, comparisons with an out-group member lead to a higher accessibility of self-knowledge that was inconsistent and consequently dissimilar from the characteristics of the out-group member.

For these reasons, participants perceived themselves as being more similar to the in-group member whereas participants perceived themselves as being more different from the out-group member. While in examples like this, the stimulus configuration at hand induces a similarity or a difference mindset (Mussweiler, 2003), research on comparison mindsets has predominantly manipulated comparison mindsets with the help of tasks that explicitly ask participants to focus on similarities or differences between a target and a standard. In these tasks, target and standard are typically unrelated to the participants. Instead, participants have to compare paintings and pictures (e.g., Mussweiler, 2001; Mussweiler & Damisch, 2008; Todd et al., 2011). Actively looking for similarities between standard and target activates a similarity mindset, whereas actively looking for differences between standard and target creates a difference mindset.

Research on social cognition, hidden profiles, diversity and negotiation research provides initial evidence that a difference mindset increases information elaboration within groups and their subsequent performance while a similarity mindset decreases it.

2.5 Evidence for the Effects of Comparison Mindsets

2.5.1 Evidence from Research on Social Cognition

Recent research revealed that, compared to individuals in a difference mindset, those in a similarity mindset assume the perspective of a target person or group as being similar to their own. Therefore, they ascribe their own mental states, attitudes and behavioral inclinations onto them (Todd et al., 2011). This "tendency to estimate that others think, feel, and behave similarly to oneself" (Amit, Roccas, & Meidan, 2010, p. 931; for a review see Krueger, 1998) is called *projection.* In a series of studies, Todd and colleagues (2011) assessed the impact of comparison mindsets on people's ability to take a target's perspective rather than projecting their own perspective onto the target. They manipulated comparison mindsets in two ways: The first type of manipulation (Study 1 to Study 3) required

participants to either write down similarities or differences between a target and a standard (e.g., Corcoran, Hundhammer, & Mussweiler, 2009; Mussweiler, 2001; Mussweiler & Damisch, 2008). More specifically, participants had to compare four pairs of pictures by indicating either three similarities or three differences between each pair. The second type of the manipulation (Study 4 and Study 5) was similar to the approach by Mussweiler and Bodenhausen (2002), in which in-group or out-group standards were used. The targets in these two studies on the other hand were either in-group or out-group members. In all five studies, the authors found that a similarity mindset led participants to project their own perspective and privileged knowledge onto target individuals, and that group members had problems with assuming another persons' perspective that was different from their own. In contrast, individuals in a difference mindset were less prone to project their own perspective or knowledge onto other individuals. Although this is, to my knowledge, the only accumulation of studies specifically addressing the direct effect of comparison mindsets on projection, there is various evidence from other research on social cognition pointing to this relationship.

Research on projection (Ames 2004a, 2004b; Ames, Weber, & Zou, 2012) and false consensus (Clement & Krueger, 2002; Krueger & Zeiger, 1993; for a review see Mullen et al., 1985; Robbins & Krueger, 2005) apply very similar, even identical methods to research on comparison mindsets. Ames (2004a, 2004b), for instance, applied two manipulations in two sets of studies that are most likely to induce comparison mindsets. In the first manipulation, Ames (2004a) had participants answer a couple of questions about their individual preferences. In the similarity condition, participants were told that the target person was similar to them as he or she had answered these questions similarly. In the difference condition, participants were told that the target person was different from them as he or she had answered the questions differently. In the second manipulation, Ames (2004b) transferred

the picture comparison task used by Mussweiler and colleagues (Mussweiler 2001; Mussweiler & Damisch, 2008) to a social context: He induced similarity testing by asking participants in which way they were similar to the target person, and conversely, he induced difference testing by asking participants in which way they were different from the target. Both manipulations in the two sets of studies yielded consistent results: "When perceivers assume an initial general sense of similarity to a target, they engage in greater projection" (Ames, 2004a, p. 340), meaning that they ascribe their own knowledge, opinions, preferences and behavioral inclinations onto the target. Other research on false consensus used in-group or out-group standards similar to the procedures by Mussweiler and Bodenhausen (2002) as well as Todd and colleagues (2011, Study 4 and Study 5). A typical finding of this research is that the categorization of target individuals as in-group or out-group members leads to an increased projection of own mental states on in-group rather than out-group members (Clement & Krueger, 2002; Holtz & Miller, 2001; Krueger & Zeiger, 1993).

To sum up, evidence from research on comparison mindsets, false consensus and projection suggests that a sensitivity towards similarities (i.e., a similarity mindset) leads to a high level of projection of one's own knowledge, interests and preferences while a sensitivity towards differences (i.e., a difference mindset) diminishes it (e.g., Ames, 2004a, 2004b; Clement & Krueger, 2002; Todd et al., 2011). Unfortunately, this research predominantly focused on the social cognition of individuals and did not assess real social interactions between individuals or groups. Yet, the projection of own knowledge, interests and preferences has been identified as a major problem in hidden profiles, diversity and negotiation research because it decreases the discovery, exchange and integration of task-relevant information – in other words – information elaboration.

2.5.2 Evidence from Hidden Profile Research and Diversity Research

As discussed earlier, there is very little research concerning diverse information, interests and preferences within negotiation groups (Northcraft, 2011). Yet, unshared or hidden information is rather the rule than the exception within and between negotiation groups (e.g., Bonner et al., 2011; Brett et al., 2009; Cohen & Thompson, 2011). As Thompson and colleagues (1995) state, this situation often leads to problems:

> When information about priorities is unshared, or team or coalition members have highly specialized knowledge or expertise, groups may fail to reach agreements that maximize their interests because such interests were not apparent. Such nonobvious optimal solutions are known as hidden profiles (Stasser & Steward, 1992). Indeed, the discovery of integrative agreements in negotiation may be conceptualized as the emergence of a hidden profile (p. 11 f.).

The conceptualization of integrative negotiations as hidden profiles allow for conclusions about the role of comparison mindsets in negotiations with group involvement from evidence in the context of hidden profile research. In the context of hidden profile research, the existence of diverse information and preferences within groups has received extensive attention (Stasser & Titus, 1985; for a review see Stasser & Titus, 2003). As stated by Thompson and colleagues (1995), the crucial information in hidden profiles needed to arrive at the correct conclusion is not shared, but distributed, among group members. Therefore, group members need to elaborate, which means to discover, exchange and integrate this unshared information within their group. Numerous studies revealed that groups are frequently inadequate in elaborating the unshared information, and hence, arrive at suboptimal solutions (e.g., Greitemeyer & Schulz-Hardt, 2003; Stasser & Titus, 1985, 2003). Manifold causes have been postulated and examined over the years (e.g., Kerschreiter, Schulz-Hardt, Mojzisch, & Frey, 2008; Schulz-Hardt, Brodbeck, Mojzisch, Kerschreiter, &

Frey, 2006; Schulz-Hardt, Jochims, & Frey, 2002). Amongst these is within-group projection, which is group members' projection of own information onto the other group members:

> One reason why unique information is mentioned and repeated less than commonly held information is because group members generally assume that the information they possess is the same as that possessed by others (unless contrary information is available) (Stasser, Stewart, & Wittenbaum, 1995) (Phillips, Northcraft, & Neale, 2006, p. 468).

According to diversity research, this projection of own cognitive contents onto fellow group members occurs less frequently in groups with diverse characteristics than in groups with homogeneous characteristics. The reason several researchers suggest is that notable and salient differences within a group increase members' sensitivity towards potential differences on other dimensions, such as task-relevant information, perspectives or opinions (Antonio et al., 2004; Mannix & Neale, 2005), and therefore increase group members' individual and collective information elaboration (Phillips, Liljenquist, & Neale, 2008; Phillips & Loyd, 2006; Phillips et al., 2006; Sommers, 2006; Sommers, Warp, & Mahoney, 2008).

With regard to individual group members' information elaboration, Sommers and colleagues (2008) found that white individuals engage in more thorough information elaboration when they prepare to interact in an ethnically diverse group. The authors reason that the white participants expect more diverse opinions in the ethnically diverse groups and therefore engage in more intense preparation than white participants who expect to interact in an ethnically homogeneous group. With regard to information elaboration on the group level, Phillips and Loyd (2006) demonstrate that members of diverse groups are less irritated by fellow group members with different opinions and engage in longer discussions about their task than homogeneous groups. Phillips and colleagues (2008) reveal that groups joined by an out-group member engage in more within-group information elaboration than groups joined

by an in-group member, although both newcomers brought no new information or ideas to the table. Notable similarities within a group, on the other hand, increase members' sensitivity towards potential similarities on other task-relevant dimensions and thereby increase members' projection of their own mental states onto fellow group members (Phillips et al., 2006). Phillips and colleagues (2006) found that, compared to diverse groups, homogeneous groups spent less time on within-group information elaboration during a hidden profile task and were less aware of group members' informational differences after they had finished the task. In line with these findings, numerous research in the field of diversity shows that groups with a homogeneous member composition on salient attributes (e.g., gender, age, ethnicity, personality, education, clothing) elaborate task relevant information to a lower degree, and therefore achieve worse results in complex tasks like hidden profiles than diverse groups (Homan et al., 2007a, 2007b; van Knippenberg et al., 2004).

Although these results from diversity research have never been discussed in the context of comparison mindsets, they provide evidence for the impact of comparison mindsets on projection and within-group information elaboration in hidden profile tasks and hence in negotiations as well. According to the selective accessibility model (Mussweiler, 2001, 2003), the first holistic assessment of salient target and standard features determines whether individuals subsequently engage in difference- or similarity-testing. In diverse groups where salient features such as category membership suggest target-standard dissimilarity, the result of this initial screening should be dissimilarity testing and hence the activation of a difference mindset. In contrast, members of homogeneous groups with a number of salient features suggesting target-standard similarity will subsequently engage in similarity-testing. Hence, a similarity mindset will be activated. Consequently, it can be assumed that group diversity and homogeneity go along with the activation of comparison mindsets. In line with this argument, stimuli suggesting either diversity or homogeneity have previously been used to directly

manipulate comparison mindsets (see Section 2.5.1; e.g., Mussweiler & Bodenhausen, 2002; Todd et al., 2011).

Since negotiations can be conceptualized as hidden profile tasks, these results are transferable to groups in negotiations. However, negotiation research itself also provides evidence for the relationship between comparison mindsets, projection, within-group information elaboration and task performance.

2.5.3 Evidence from Negotiation Research

2.5.3.1 Evidence on Projection in Negotiations

Within the context of negotiation research, two forms of projection have been the subject of extensive research efforts: Fixed pie perceptions and illusory conflicts. Since both of them describe the projection of the cognitive contents of one negotiation party onto the other, they can be described as two special forms of *between-group* or *-party projection*.

Numerous research provided evidence that negotiators frequently adapt *fixed pie perceptions* in negotiations (Harinck et al., 2000; Pinkley et al., 1995; Raiffa, 1982). This phenomenon describes negotiators' expectation "that other's preferences are (…) the mere mirror image of one's own preferences" (de Dreu, Koole et al., 2000, p. 975) for the negotiation issues. Due to negotiators' "reliance on their own preferences as a cue to others preferences" (Bottom & Paese, 1997, p. 1919), negotiation parties expect their opponent to have the same interest-weightings like them (Thompson, 1990). At the same time, they expect these interests to be opposed. The expectation of the same weightings for diametrically opposed interests leads to the perception that the negotiation issues have the same priority ranking for the negotiation parties, suggesting a fixed-sum situation. This perception is a problem in integrative negotiations where interests are opposed but have different weightings for the negotiation parties. These different weightings in turn lead to a different prioritization of the negotiation issues and hence bear the potential of integrative agreements. Therefore,

fixed pie perceptions have been identified as a major cause of low joint outcomes in negotiations with integrative potential in a multitude of studies (e.g., Thompson & Hastie, 1990; Thompson & Hrebec, 1996). They decrease information elaboration in two ways. First, "negotiators fail to ask the relevant and necessary information about preferences (Thompson 1990a) because they assume they know the preferences of the other party" (Pinkley et al., 1995, p. 101). Second, they process the available information inaccurately (Pinkley et al., 1995).

The second type of a negotiation-specific form of social projection between groups are *illusory conflicts* (Bazerman & Gillespie, 1999; Thompson & Hrebec, 1996; Trötschel, 2002). Illusory conflicts describe a situation in which negotiation parties expect the other party to hold opposed interests on a single negotiation issue, leading to opposed preferences for the issue. However, the interests of the two parties are truly compatible, meaning that the resulting preferences for the negotiation issue are in the same rather than opposed direction. Imagine, for instance, a situation where a recruiter and new hiree discuss the hiree's starting date. Although the new hiree would prefer to start three months later, she suggests an earlier starting date, because she thinks her new company wants her to be flexible and start as soon as possible. The recruiter agrees, but would have preferred a later date, because one elderly colleague will retire in three months, opening up an office space and available work for the new hiree. Consequently, the interests of the two parties to have a late starting date are completely compatible. Yet, they agree on a mediocre outcome for both parties due to the illusory conflict of interest. Hence, what negotiation parties project onto the other parties is their own interest and the resulting preference for the negotiation issue, yet in the diametrically opposed direction. As in the example above, research shows that illusory conflicts lead to mediocre compromise solutions, although they could have agreed on both their optimal solution (e.g., Thompson & Hastie, 1990). To sum up, fixed pie perceptions and

illusory conflicts share the expectation of opposed interests. However, in illusory conflicts, interests are truly compatible, rather than opposed. In addition, fixed pie perceptions involve the projection of the weightings of the opposed interests, concealing the potential for integrative agreements due to truly different interest-weightings.

While there is extensive research on these two forms of projection between negotiation parties, few research has assessed *within-group projection* in negotiations. However, within-group projection should be as important as between-group projection. First, the characteristics of negotiations promote the occurrence of within-group projection. The anticipation of intergroup conflict, which is per definition part of a negotiation between groups or representatives, increases similarity perceptions within groups (Haslam, Oakes, Turner, & McGarty, 1995, 1996; Turner, 1991; Wilder, 1986). Moreover, research on projection and false consensus suggests that projection onto in-group members (i.e., one's own negotiation group) is even higher than projection onto out-group members (i.e., the opposed negotiation group; cf. Section 2.5.1; Clement & Krueger, 2002; Holtz & Miller, 2001; Krueger & Zeiger, 1993; Robbins & Krueger, 2005). Second, research on hidden profiles indicated that within-group projection decreases within-group information elaboration (Phillips et al., 2006; Stasser et al., 1995). As negotiations can be understood as a special form of hidden profiles, this finding from hidden profile research provides evidence for the decreasing effect of within-group projection on within-group elaboration in negotiations.

2.5.3.2 Evidence for the Effect of Comparison Mindsets on within-group Information Elaboration

Evidence for the effect of comparison mindsets on within-group information elaboration can be derived from three sources: Research on the impact of constructs similar to comparison mindsets in interpersonal negotiations, research on diversity in negotiations and research on negotiations with distributed information.

Trötschel and colleagues (2011) assessed the impact of *perspective taking mindsets* – cognitive procedures "that are directed toward the psychological states of other individuals" (p. 773). The activation of participants' sensitivity towards information or perspectives different from their own increased parties' systematic concession making. In this way, negotiation parties with a perspective-taking mindset were able to gain more knowledge about the interests of the other party and attained higher joint outcomes than parties focusing on their own perspective. Focusing on perspectives different from ones' own comes very close to the manipulation of a difference mindset. This study therefore provides evidence for increased information elaboration when a special sensitivity towards differences is activated. It can be inferred from the results that not only the information elaboration between the negotiation parties, but also within the negotiation parties was increased. Systematic concession making and an accurate knowledge about the opponent's interests requires processing ones' own information and preferences to identify the high priority issues. In addition, it requires an intense processing of the other party's offers to identify its priorities (Bazerman & Carroll, 1987). It is important to note, however, that research on similar constructs such as perspective-taking mindsets (Trötschel et al., 2011) has only been conducted in interpersonal negotiations. Therefore, information elaboration could only be observed on the individual level, not the group level.

In the context of diversity research, a working paper by Zhong (2001) assumes a positive impact of diversity on joint outcomes. Although the paper does not contain direct empirical evidence, it hints at the effect of comparison mindsets on between-group and within-group information elaboration: Similar to the procedure by Ames (2004b) and Mussweiler (2001), members of negotiation groups were asked to write down either how they were different from each other or how they were similar to each other. For group-on-group negotiations with at least one group that was sensitive towards its members' differences,

Zhong (2001) reported initial evidence for higher between-group information elaboration and higher joint outcomes. Although between-group information elaboration was in the center of attention, corresponding effects can be assumed for within-group information elaboration as well, because attaining high joint outcomes also requires high levels of information processing by the single negotiation parties. Consequently, these results suggest that a difference mindset increases within and between-group information elaboration and joint outcomes in integrative negotiations. However, it is important to note that in this study only the interests between the negotiation groups were different – the interests of the group members within a negotiation group and their weightings were still the same. Therefore, the results of this study cannot be generalized to integrative negotiations between groups whose members hold diverse interest-weightings. Moreover, diversity research has never directly explored comparison mindsets as the underlying mechanism of these effects (e.g., Homan et al., 2007a, 2007b; Phillips et al., 2006).

As negotiation groups have been viewed as monolithic entities with homogeneous interests (e.g., Brett et al., 2009; Northcraft, 2011), only few studies assessed the within-group elaboration of members' diverse information, interests and preferences. Peterson and Thompson (1997) found that groups of two strangers achieved higher outcomes than groups of two friends when the relevant information for the negotiation was distributed between them. The authors argue that the forced distribution of knowledge between group members collides with the knowledge system that groups of friends have already established. On the other hand, individuals perceive their friends as being more similar to themselves and therefore tend to project their own knowledge and attitudes onto them (e.g., Goel, Mason, & Watts, 2010). Consequently, these results may as well be explained by a lower level of information elaboration within groups of friends, resulting from a high level of projection due to an increased sensitivity of the group members towards their similarities. In correspondence

with this interpretation, another study (Brodt & Dietz, 1999) revealed that members from well-established groups, whose members are familiar with each other, engage in less within-group information elaboration compared to newly formed groups and hence achieve lower joint outcomes. Although the focal predictor familiarity comes close to an activation of a similarity mindset, there are other dimensions associated with the construct of familiarity (e.g., knowing the other group members' cognitive structures) that prohibit an unrestricted generalization of these results to comparison mindsets.

To sum up, previous negotiation research suggests that a special sensitivity towards similarities increases the risk of low within-group information elaboration and joint outcomes whereas a special sensitivity towards difference reduces this risk. However, the effect of comparison mindsets on within-group information elaboration in negotiation groups has never been directly assessed. Moreover, the majority of negotiation research focuses on information elaboration during the negotiation rather than before the negotiation (see Section 2.3.; see also Thompson, 1991; Thompson et al., 1996; Zhong, 2001). As a result of this, potential effects of comparison mindsets on the interaction of within- and between-group processes before and during the negotiation remain to be found.

3 Present Research

Diverse information, interests, and preferences are typically the reason why groups get involved in negotiations (Behfar et al., 2008; Brett et al., 2009; Bright & Parkin, 1998; Thompson & Fox, 2001). Therefore, members of a negotiation group "often have different priorities and imagine different ideal outcomes" (Brett et al., 2009, p. 2; see also Behfar et al., 2008; Bornstein, 2003; Bornstein et al., 1989; Bright & Parkin, 1998; Sally & O'Connor, 2003; Thompson & Fox, 2001; Thompson et al., 1996). Since "any group level preference is based, at least in part, on the preferences of the individual group members" (Bonner et al., 2011, p. 246) "members must pool their ideas about their interests, (…) reach consensus about what they want" (Thompson et al., 1995, p. 11) and synthesize group members' opinions, viewpoints and ideas (de Wit et al., 2011). Yet, "researchers know little about the psychological mechanisms that help negotiators' explore underlying interests" (Sinaceur et al., 2013, p. 815; see also Giacomantonio et al., 2010) because, with few exceptions (e.g., Brett et al., 2009; Halevy 2008), previous research has assumed interest-homogeneity within groups (Cohen & Thompson, 2011; Northcraft, 2011). Therefore,

> a challenging and important direction of future research is to clarify how within and between-team processes interact to affect negotiation behavior and performance (…). How can negotiation teams capitalize on their differences and diversity to increase their performance? (…) Although these questions have received some attention in the negotiation literature (e.g. Brett et al., 2009; Halevy, 2008; Steinel et al., 2009), there is still much work to be done before a complete picture emerges of how within and between team negotiation processes interact (Cohen & Thompson, 2011, p. 27).

This dissertation answers this call for research, identifies five specific research questions and makes five corresponding propositions about the activation and the consequences of comparison mindsets for the within-group elaboration of diverse interest-

weightings before and during group-on-group or representative negotiations and their joint outcomes.

3.1 Proposition 1: How Comparison Mindsets are activated

An important first step to understand the role of comparison mindsets in negotiations with group involvement is understanding which characteristics of groups may activate comparison mindsets. Therefore, the *first research question* of this dissertation is how comparison mindsets can be activated in negotiations with group involvement.

Like in any other group, members of negotiation groups can be faced with different levels of diversity within their group. In addition, the expected intergroup conflict before a group-on-group or representative negotiation increases the perceptions of similarity within a group (Haslam et al., 1995, 1996; Turner, 1991; Wilder, 1986). Mussweiler (2003) argues that the activation of a comparison mindset is the result of the first holistic assessment of the available target-standard characteristics (see Section 2.4). If the characteristics suggest a general similarity between the target and the standard, individuals will subsequently apply similarity testing. If the characteristics suggest a general difference between the target and the standard, individuals will subsequently apply dissimilarity testing. Therefore, the Present Research predicts the following answer to Research Question 1:

> *Proposition 1.* Group characteristics pointing to member similarity (i.e., low group diversity) activate a similarity mindset. In contrast, group characteristics pointing to member differences (i.e., high group diversity) activate a difference mindset.

3.2 Proposition 2: How Comparison Mindsets affect within-group Projection

Previous research on comparison mindsets and false consensus (e.g., Ames 2004a, 2004b; Clement & Krueger, 2002; Robbins & Krueger, 2005; Todd et al., 2011) found that,

compared to a similarity mindset, a difference mindset reduces individuals' projection of their own information and preferences onto other individuals or groups (see Section 2.5.1). In hidden profile and diversity research, projection has been identified as an inhibitor of within-group information elaboration (e.g., Stasser et al., 1995; Phillips et al., 2006). In the context of negotiation research, fixed pie perceptions and illusory conflicts have been assessed as two types of between-group projection (e.g., Bazerman & Gillespie, 1999; Trötschel, 2002) that were found to decrease between-group information elaboration and joint outcomes (e.g., de Dreu, Koole, et al., 2000; Pinkley et al., 1995; Thompson & Hastie, 1990; Thompson & Hrebec, 1996). Yet, within-group projection has been neglected by negotiation research thus far. Therefore, the *second research question* of this dissertation is how comparison mindsets influence within-group projection.

Unlike between-group settings, within-group settings are typically not characterized by opposed interests and preferences, due to commonalities such as a common group goal, belonging to the same superordinate entity and group identification (Barisch, 2011). Yet, the *weighting* of their compatible interests and hence the prioritization of the negotiation issues is likely to differ due to the diverse knowledge group members bring to the negotiation group (Behfar et al., 2008; Brett et al., 2009; Bright & Parkin, 1998; Thompson & Fox, 2001). Therefore, within-group projection should occur on group members' weightings of their compatible interests. Hence, the predicted answer to Research Question 2 is:

> *Proposition 2.* In contrast to a similarity mindset, a difference mindset decreases the projection of group members' own interest-weightings onto their fellow group members.

3.3 Proposition 3: How Comparison Mindsets affect pre-negotiation Elaboration

As pointed out in Section 2.2.2.4, a "critical, but largely ignored aspect of the negotiation process is the means people utilize to plan and prepare for such an encounter" (Peterson & Lucas, 2001, p. 37), especially in negotiation groups where the crucial information is not shared but distributed among group members (e.g., Bonner et al., 2011; Halevy, 2008). Research on diversity and group decision making revealed that a high within-group information elaboration leads to a higher task performance in groups with diverse information (e.g., Homan et al., 2007a, 2007b; van Ginkel & van Knippenberg, 2009). Evidence from research on social cognition, diversity and hidden profiles suggests that a special sensitivity towards differences increases information elaboration whereas a sensitivity towards similarities diminishes it (e.g., Phillips et al., 2008; Phillips et al., 2006; Sommers, 2006; Sommers et al., 2008; Todd et al., 2011). Thus far, negotiation research has been limited to between-group information elaboration, and hence, provides only indirect evidence for these effects (e.g., Brodt & Dietz, 1999; Peterson & Thompson, 1997; Trötschel et al., 2011; Zhong, 2001). Therefore, the *third research question* is how comparison mindsets influence within-group information elaboration and outcomes prior to the negotiation.

The origin of the first offer at the beginning of a negotiation lies before the negotiation (e.g., Galinsky, et al., 2005; Galinsky & Mussweiler, 2001). The quality of this first offer can be considered a very important outcome of a pre-negotiation preparation within negotiation groups, because it strongly affects the joint outcomes in the subsequent group-on-group or representative negotiation (e.g., Galinsky & Mussweiler, 2001; Galinsky et al., 2009; Moran & Ritov, 2002; Ritov, 1996; Sinaceur et al., 2013). The more issues a first offer contains that score high on the group's highly-weighted interests, the higher the quality of this first offer (Moran & Ritov, 2002). Knowing the group's interest-weightings allows group members to

decide which negotiation issues meet the group's highly-weighted interests and should therefore be claimed in the first offer (Bazerman & Carroll, 1987; Raiffa, 1982). Groups with a difference mindset should have a better understanding of their interest-weightings due to a higher level of within-group information elaboration (Brett, 1991; Pruitt, 1981; Thompson, 1991; Thompson & Hastie, 1990). Therefore, the following answer to Research Question 3 is predicted:

> *Proposition 3*. Compared to a similarity mindset, a difference mindset increases negotiation parties' first offer quality via a higher within-group information elaboration of group members' diverse interest-weightings.

3.4 Proposition 4: How Comparison Mindsets affect joint Outcomes

As Halevy (2008) revealed in his study, opposed preferences within a negotiation group can be detrimental for joint outcomes in integrative negotiations, if the group fails to integrate group members' perspectives. If groups are able to increase their understanding of their own interests instead, they achieve higher economic outcomes (Swaab et al., 2011). Research on diversity and hidden profiles points to an effect of comparison mindsets on group performance via within-group information elaboration (e.g., Homan et al., 2007a, 2007b; van Ginkel & van Knippenberg, 2009). Negotiation research identified between-group information elaboration as a crucial facilitator for high joint outcomes in integrative negotiations (Hyder et al., 2000; Olekalns & Smith, 2003; Thompson, 1991; Thompson et al., 1996; Tutzauer & Roloff, 1988; Weingart et al., 1996). Therefore, the *fourth research question* of this dissertation is how comparison mindsets influence the joint outcomes of groups whose members hold diverse interest-weightings.

Within-group information elaboration can take place b*efore* the negotiation (cf. Proposition 3) as well as *during* the negotiation. Depending on the degree to which within-group information elaboration prior or during the negotiation is involved, three paths are

distinguished in which comparison mindsets are expected to affect joint outcomes (cf. Figure 1).

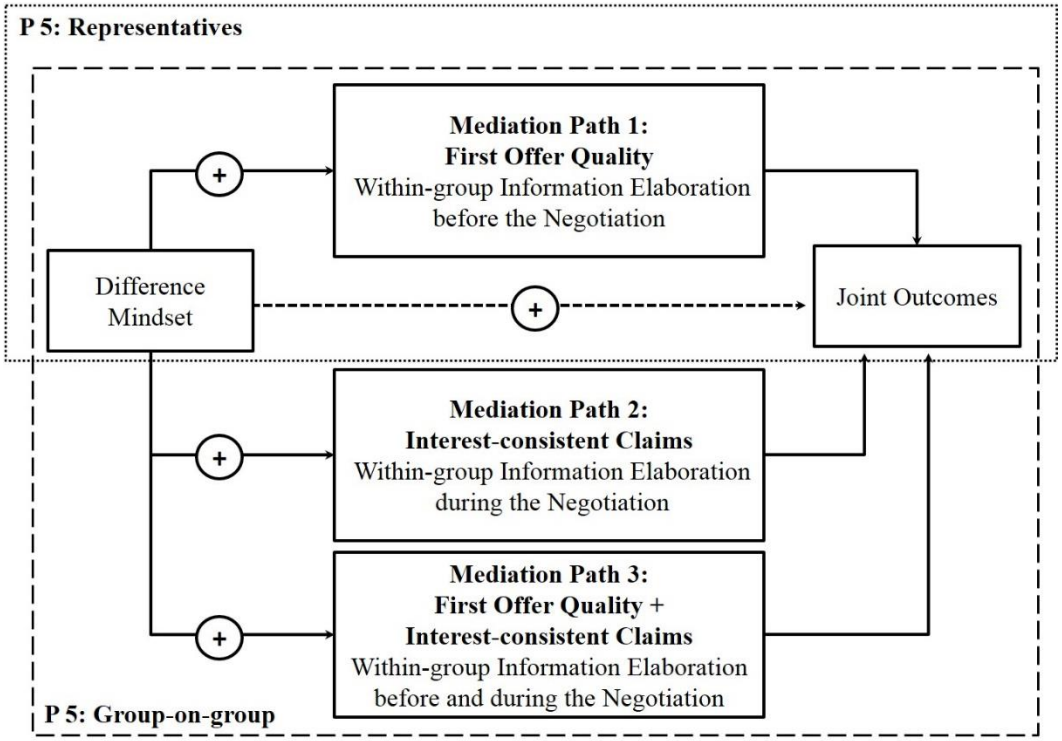

Figure 1. Proposed mediation paths in Proposition 4 and 5. Algebraic signs represent the direction of the proposed relationships. Dashed connections represent mediated relationships.

The *first mediation path* is within-group information elaboration before the negotiation. Information elaboration before the negotiation translates into the quality of the first offer (i.e., first offer quality) at the beginning of the actual negotiation. Therefore, the first offer quality at the beginning of the negotiation is an important indicator for the within-group information elaboration prior to the negotiation. Since first offers are major predictors of negotiators' outcomes (e.g., Galinsky et al., 2009; Sinaceur et al., 2013, Yukl, 1974), first offer quality might be sufficient for explaining the effects of comparison mindsets on joint outcomes in intergroup negotiations. The *second mediation path* is within-group information elaboration during the negotiation. Groups might fail to integrate their interest-weightings before the negotiation due to a stronger focus on other topics, such as negotiation issues, strategies or roles. Therefore, the effect of comparison mindsets may be solely driven by

within-group information elaboration during the negotiation. Parties with a high level of within-group information elaboration during the negotiation are better able to clarify and revise the own group's interest-weightings (Bazerman & Carroll, 1987; Carroll et al., 1988) over the course of the negotiation. Therefore, they can increase their claims of negotiation issues that are consistent with their group's highly-weighted interests. Consequently, the amount of interest-consistent claims generated over the course of the negotiation is a suitable indicator. The *third mediation path* is within-group information elaboration before *and* during the negotiation. While information elaboration before the negotiation and its effect on first offer quality might be an important intermediate step in the pursuit of high joint outcomes, the further adjustment of claims to the group's interest-weightings over the course of the negotiation might also be required.

Based on the different paths on which comparison mindsets could affect joint outcomes in negotiations with group involvement, the following proposition for answering research Question 4 is made:

> *Proposition 4.* Compared to a similarity mindset, a difference mindset increases joint outcomes in negotiations with group involvement via a higher within-group information elaboration of group members' diverse interest-weightings. The mediation can either occur via information elaboration before the negotiation, indicated by first offer quality, during the negotiation, indicated by interest-consistent claims, or via a combination of within-group elaboration before and during the negotiation.

3.5 Proposition 5: How Comparison Mindsets affect group-on-group and Representative Negotiations

Negotiating as a group or as a single representative goes along with different challenges. While negotiation groups face the challenge of synchronizing their efforts and elaborating information together (Halevy, 2008), representatives face the challenge of

representing a group's interest that is not present (Reinders Folmer et al., 2012). Despite these different challenges, previous research did not compare the processes and outcomes of group-on-group and representative negotiations. Therefore, the *fifth research question* of this dissertation is how comparison mindsets affect joint outcomes in group-on-group versus representative negotiations.

Group-on-group negotiations provide the chance for groups to engage in the elaboration of group members' diverse interest ratings before and during the negotiation. In contrast to group-on-group negotiations, the individual group members in a representative negotiation have very limited opportunities to interact with their constituent group during the negotiation. If the group did not exchange and integrate members' diverse interest-weightings in a pre-negotiation preparation prior to the negotiation, group representatives are only aware of their own interest-weightings during the negotiation. Therefore, this dissertation makes the following proposition for answering Research Question 5 (cf. P 5, Figure 1):

> *Proposition 5*. In group-on-group negotiations, comparison mindsets affect joint outcomes via within-group information elaboration before the negotiation, during the negotiation or via a combination of these two. In representative negotiations, comparison mindsets affect joint outcomes only via within-group information elaboration before the negotiation.

3.6 Overview of Propositions and Contributions

Figure 2 provides a graphical overview of the first four propositions. The two parts of Proposition 5 are depicted in Figure 1.

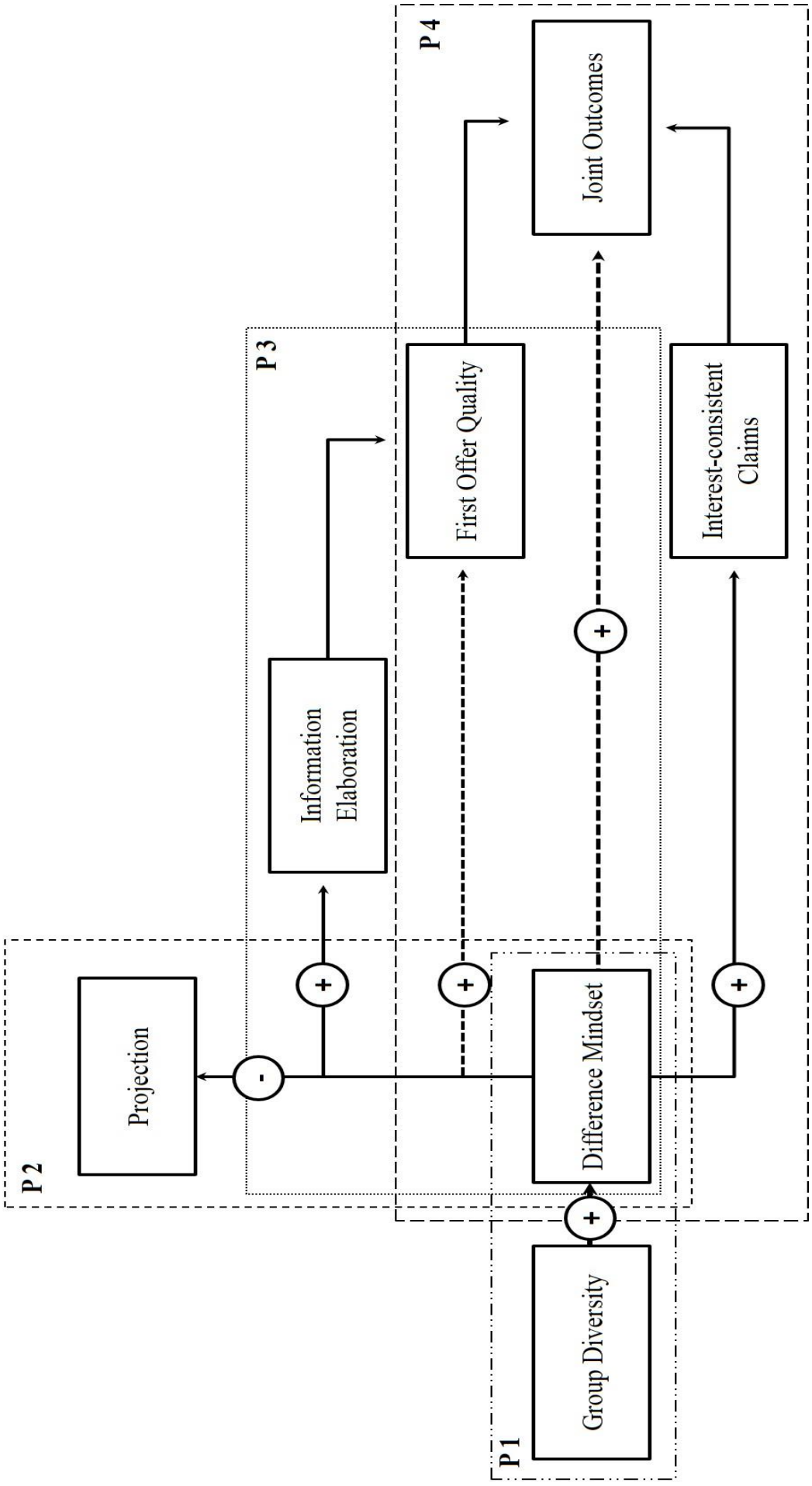

Figure 2. Proposed relationships of Propositions 1 to 4. Algebraic signs represent the direction of the proposed relationships. Dashed connections represent mediated relationships.

The first two Propositions (see P 1 and P 2, Figure 2) provide the groundwork for the following propositions about the impact of comparison mindsets on within-group information elaboration and outcomes in negotiations with group involvement. Proposition 1 suggests how comparison mindsets may emerge in groups. Empirical evidence for Proposition 1 would demonstrate that comparison mindsets can be activated by diversity stimuli in negotiations with group involvement. Moreover, a successful manipulation of comparison mindsets with diversity stimuli would raise the question for future research, if many effects of diversity research occurred because, in fact, comparison mindsets were manipulated (see Section 2.5.2). Proposition 2 transfers the crucial relationship between comparison mindsets and projection onto group members' weightings of compatible interests within the negotiation group. In this way, it supplements research about between-group projection in negotiations by first empirical findings on within-group projection that has been shown to decrease information elaboration in hidden profiles (Stasser et al., 1995; Phillips et al., 2006).

Proposition 3 and 4 (see P 3 and P 4, Figure 2) aim at showing how comparison mindsets influence within-group information elaboration and outcomes before and during negotiations of groups with diverse interest-weightings. Accordingly, the present research helps to get past a rather one-sided view of negotiation groups as monolithic entities with homogeneous perspectives (e.g., Northcraft, 2011). Moreover, it extends previous negotiation research by assessing within-group rather than between-group information elaboration in two different phases: Before and during the negotiation. In this way, the present research overcomes the narrow conceptualization of negotiations as merely the around-the-table bargaining situation (e.g., Saunders, 1985). In addition, it assesses the interdependence of a within-group process such as within-group information elaboration and a between-group process such as arriving at a joint outcome (Cohen & Thompson, 2011). Finally, these

Propositions help to find out what may help or hinder negotiation groups to attain high joint outcomes when they face the obstacle of diverse interest-weightings within their group.

Finally, Proposition 5 assesses how the effect of comparison mindsets on within-group information elaboration and joint outcomes (see P 5, Figure 1) may differ between group-on-group negotiations and representative negotiations. In this way, the present research is one of the first to compare processes in group-on-group and representative negotiations.

3.7 Study Overview

I assessed my five Propositions with the help of four studies. Study 1 and 2 addressed Propositions 1 and 2. These two studies were conducted online: Participants were told to be part of a virtual group of three participants. However, this virtual group did not exist in reality. Instead, the participants took part in these studies on their own. In contrast, Study 3 and Study 4 addressing Propositions 3 to 5, were conducted in the laboratory: Two groups of three participants each were formed in every experimental session.

For manipulating comparison mindsets in Study 2, Study 3 and Study 4, procedures used in research on comparison mindsets (Mussweiler & Damisch, 2008; Todd et al., 2011), projection (Ames 2004a, 2004b) and diversity (Homan et al., 2007a, 2007b) were adapted. In these procedures, participants' attention was directed towards either task-unrelated similarities or differences within their negotiation group.

The negotiation tasks in Study 2, Study 3 and Study 4 were adapted from a negotiation task by Trötschel and colleagues (2011) in which two travel agencies have to find an agreement for the distribution of several hotels on an island. Consequently, two groups were formed in each experimental session, each representing one travel agency. Both groups underwent the manipulation of the same comparison mindset (i.e., either a similarity mindset or a difference mindset). Subsequently, each group had a group internal face-to-face meeting

before the negotiation. In this negotiation preparation phase, each group had the chance to elaborate the diverse interest-weightings, the three group members held. In Study 3, this preparation phase within the groups was followed by a group-on-group negotiation between the two groups in each session. In Study 4, the preparation phase within the groups was followed by a representative negotiation. In this representative negotiation, each of the three members of one group negotiated with one of the three members of the other group. Consequently, three simultaneous representative negotiations took place. Therefore, Proposition 5 about the differential effect of comparison mindsets on group-on-group and representative negotiations was assessed across studies.

With the help of these four studies, important insights for open research questions can be gained. These studies now will be presented in more detail.

4 Study 1: How Group Diversity activates Comparison Mindsets

The purpose of Study 1 is to assess Research Question 1 and show how comparison mindsets can be activated by group diversity. The corresponding Proposition 1 states that group characteristics pointing to member similarity (i.e., low group diversity) activate a similarity mindset. In contrast, group characteristics pointing to member differences (i.e., high group diversity) activate a difference mindset.

Study 1 pursued two goals. First, it aimed at contributing evidence for the ecological validity of comparison mindsets by showing that comparison mindsets can be activated by group characteristics such as group diversity. Hence, comparison mindsets can easily be activated in natural within- and between-group situations, such as within-group negotiation preparations as well as group-on-group or representative negotiations. Second, a successful manipulation of comparison mindsets with the help of group diversity would provide initial evidence that previous effects of diversity on within- and between-group information elaboration could be due to the fact that, in reality, comparison mindsets have been manipulated.

4.1 Study 1: Method

4.1.1 Participants and Design

87 employees and students from the University of Trier with different academic majors (e.g., economics, educational sciences, psychology) participated in this online study and were recruited via circular e-mail (77.8 % female, age 19 – 34, M = 22.98, SD = 3.14). As compensation, the participants received five Euros or course credit. *Group diversity* was manipulated as the experimental between-subjects factor with two levels (low group diversity vs. high group diversity).

4.1.2 Procedure

Participants could access the study at every computer that was available to them by using the hyperlink provided in the recruiting e-mail. In order to avoid demand effects, the relationship between the independent variable group diversity and the dependent variable comparison mindsets was concealed. For this purpose, participants were told that the study was composed of two different tasks that were unrelated to each other.

The first task resembled the manipulation of the independent variable group diversity. It was adapted from the procedure by Homan and colleagues (2007a, 2007b) as well as Ames (2004a). Participants were informed via the online program on their computer that they would form a virtual group of three with two other participants. Ostensibly, these other two participants also took part in the study at their own computers at the same time. In reality, however, these other two participants did not exist but were used to manipulate group diversity. Participants in the low group diversity condition were exposed to majorly homogeneous characteristics of their virtual group whereas participants in the high group diversity condition were exposed to majorly heterogeneous characteristics of their virtual group. The exact procedure is described in Section 4.1.3.1 in more detail.

After the exposure to group diversity, participants in both experimental conditions had to report three group characteristics that attracted their attention the most.

The following second task resembled the assessment of the dependent variable comparison mindsets. Comparison mindsets were assessed with the help of the picture comparison task by Mussweiler and Damisch (2008). After the picture comparison task, participants answered demographic questions, were thanked and debriefed.

4.1.3 Operationalization

4.1.3.1 Independent Variable: Group Diversity

To manipulate group diversity, a procedure introduced by Homan and colleagues (e.g., 2007a, 2007b; see also Homan, Greer, Jehn, & Koning, 2010) was adapted. In this manipulation, participants have to answer a questionnaire. Based on this questionnaire, group members receive bogus feedback about the results. In the high diversity condition, the bogus feedback contains very different results of the questionnaire for all group members. In the low diversity condition, the bogus feedback contains very similar results for all group members. Parallel to this procedure, participants in Study 1 had to answer a questionnaire and received bogus feedback about the results within the virtual group they ostensibly formed with two other online participants of the study. It is important to keep in mind that these two additional online participants did not exist but were used to manipulate group diversity. The bogus feedback suggested that the characteristics of all three group members were either very homogeneous or very diverse.

More specifically, the manipulation of group diversity was comprised of two steps. In the first step of the manipulation, participants in both experimental conditions answered twelve questions about their preferences and interests with regard to their vocational and private life. To answer a question, for instance, about their favorite leisure activities, the participants had to rank three answers. The first rank resembled their most preferred option, the last rank resembled their least preferred one. In the second step, a table was presented to the participants. This table depicted their own individual rankings of the answer options for each of the twelve questions. Next to their own rankings, the twelve rankings of the two other bogus group members were presented to them. Table 1 shows the principle of this table.

Answer Options to Questions	Group Members		
	Participant	Bogus Member 1	Bogus Member 2
Group Members' Rankings for the Answer Options of Question 1			
Option 1	1	1	1
Option 2	3	3	3
Option 3	2	2	2
Group Members' Rankings for the Answer Options of Question 2			
Option 1	1	2	3
Option 2	2	3	1
Option 3	3	1	2

Table 1. Answer patterns for the experimental manipulation of group diversity (Study 1). Group members' rankings of the answer options of Question 1 represent a pattern for establishing low group diversity. Group members' rankings of the answer options of Question 2 represent a pattern for establishing high group diversity.

In the *low group diversity condition*, the rankings of the three group members were similar to each other in eight out of twelve questions. The answer rankings of the three group members for Question 1 in Table 1 represent an example of this principle. The rankings of the two bogus group members were always designed in a way that they created a high similarity in the rankings of all three group members. As can be seen in Table 1 for Question 2, the rankings of the two bogus group members for the four remaining questions were always designed in a way that they created a high diversity in the rankings of all three group members. In the *high group diversity condition*, the same eight questions that were answered similarly in the low group diversity condition were now answered quite differently by the three group members. The rankings of the two bogus group members were always designed in a way that they created a high diversity in the rankings of all three group members (cf.

Question 2, Table 1). The remaining four questions were answered similarly (cf. Question 1, Table 1).

To make participants process the diversity within their group, they were asked to write down three characteristics of the group that attracted their attention the most. In both conditions, participants read:

> Please take a couple of minutes now to look at the composition of interests and preferences within your virtual group (group member 1, group member 2, and yourself). What do you find most striking when looking at the answers of all three group members? Are their noticeable similarities and differences within the group? Please write down your most important thoughts in bullet points.

Since answers were more diverse in the high group diversity condition, participants were more likely to notice and write down diverse group characteristics. Since answers were more homogeneous in the low group diversity condition, participants were more likely to notice and write down homogeneous group characteristics.

4.1.3.2 Dependent Variable: Comparison Mindsets

Participants saw two pictures on the computer screen, one above the other. Each depicted the drawing of a market square in the 19th century (Mussweiler & Damisch, 2008). These pictures could be associated with two types of comparisons: With similarity comparisons (e.g., similar type of drawing, type of buildings, and presence of people) or difference comparisons (e.g., only one of both paintings depicts horses, soldiers, or a park). In line with Mussweiler and Damisch (2008, Study 6), participants were asked to "take a couple of minutes to write down as many similarities and differences between the two pictures that come to (…) mind". For measuring comparison mindsets, the first three types of comparisons (similarity comparisons vs. difference comparisons) the participants wrote down were assessed. By focusing on the first three comparisons and neglecting later ones, participants'

immediate sensitivity for either similarities or differences was captured instead of the conscious thoughts and search patterns. Consequently, the dependent variable comparison mindsets was indicated by the frequency in which participants used each type of comparison (i.e., similarities vs. differences) within their first three comparisons. If participants reported more similarities than differences within the first three comparisons, they were more sensitive towards similarities and therefore had a similarity mindset. If participants reported more differences than similarities, they were more sensitive towards differences and therefore had a difference mindset. This approach is very similar to the way Todd and colleagues (2011) measured comparison mindsets (e.g., Experiment 3).

It is important to note that the numbers of similarities and differences within the first three comparisons are almost perfectly negatively correlated (r = -.99). For instance, a participant could only report one similarity between the two pictures, if he or she had already reported two differences. The only reason why the correlation is not r = -1.00 is one participant in the high group diversity condition, who reported two instead of three comparisons. Due to this nearly perfect correlation, only the hypothesis for one comparison type – the number of reported differences – will be tested. The results for the number of reported similarities can be directly inferred from these analyses. However, to facilitate a better understanding of the results, the results for similarities will be presented as well.

4.1.4 Hypothesis

Participants in the high group diversity condition report more difference comparisons than participants in the low group diversity condition. Viewed from another perspective, participants in the low group diversity condition report more similarity comparisons than participants in the high group diversity condition.

4.1.5 Analyses of Data

4.1.5.1 Software used for Statistical Analyses

For the statistical analyses, the R software and SPSS 21 were used.

4.1.5.2 Detection of Outliers and Influential Observations

In the first step of analyses, potential outliers or observations had to be identified that could exert an exceeding influence on the models used for hypothesis testing and hence could distort their results (e.g., Field, 2009). For this purpose, a Grubbs Test (Grubbs, 1950) and a general outlier test provided by the outliers package of the R software (Komsta, 2011) were performed. In addition, it was tested for all statistical models used for hypothesis testing whether the studentized residual of an observation revealed this observation to be overly influential. This diagnosis was done with the help of the Bonferroni t-test, available with the outlier test function in the car package of the R software (Cook & Weisberg, 1982; Fox, 2002). If the reported adjusted Bonferroni p value is smaller than $p = .05$, the observation with the largest absolute studentized residual exerts an undue influence on the model and therefore should be excluded from further analyses (Fox, 2002). In line with this suggestion, observations with a significant studentized residual will be removed.

4.1.5.3 Analyses for the Selection of statistical Methods for Hypothesis Testing

In a second step of analyses, it was determined which statistical methods were suitable for hypothesis testing. The assessment of the distributional characteristics of the raw data is often used in the literature as a basis for the selection of statistical methods and procedures. However, many researchers argue that rather the distributional characteristics of the residuals than those of the raw data are crucial for the decision which methods can be used for hypothesis testing (Sokal & Rohlf, 2012). Therefore, I assessed the distributional

characteristics for both the raw data and the residuals of the models I intended to use for hypothesis testing.

Within the two experimental conditions, I applied a normality test for skewness (d'Agostino Test; d'Agostino, 1970) and kurtosis (Anscombe-Glynn test; Anscombe & Glynn, 1983) on the raw data, both available in the moments package (Komsta & Novomestky, 2012) of the R software. For every model that was planned to be used for hypotheses testing, I checked the distribution of the studentized residuals for its normality with the help of histograms, qq plots (car package, Fox & Weisberg, 2011) and the Shapiro-Francia normality test, available in the sf.test function of the nortest package (Gross, 2012) of the R software. I chose the Shapiro-Francia test over other tests for normality (e.g., Kolmogorov-Smirnov test), because it performs well according to Royston (1993). If results indicated a deviation from normality for this model, I will provide tests in the results section, which are robust against the violation of the normality assumption (Wilcox, 2012).

Moreover, the homogeneity of variances between the two levels of the between-subjects factor group diversity was assessed for both the raw data and the studentized residuals (Sokal & Rohlf, 2012) by using the Fligner-Killeen test available with the fligner.test function in the stats package of the R software. This test is robust against departures from normality (Conover, Johnson, & Johnson, 1981) and therefore provides a measure for homogeneity of variances independent from the shape of the distributions. If results indicate heterogeneous variances of the raw data or the residuals respectively, I provide additional tests, which are robust against the violation of the homogeneity assumption.

4.1.5.4 Special statistical Methods for Analyzing Comparison Mindsets

The number of similarities and the number of differences that participants reported within the first three picture comparisons were counted. Therefore, the number of differences

(number of similarities, respectively) resembles a count variable. Count variables may have special characteristics. Amongst others, they can assume nonnegative integer values only (Cameron & Trivedi, 1998) and they are frequently positively skewed and heteroskedastic (Elhai, Calhoun, & Ford, 2008). Moreover, count variables can be over- or under-dispersed, which means that the variance is either larger or smaller than the assumed distribution permits, or they may have an inflated number of zeroes (Kleiber & Zeileis, 2008). To address these issues, different kinds of regression models are available which are based on distributions or standard errors suitable for count data (Atkins & Gallopp, 2007; Cameron & Trivedi, 1998; de Beuf et al., 2012; Kleiber & Zeileis, 2008).

To identify the appropriate model for hypothesis testing, I diagnosed the distributional characteristics as described in the previous Section 4.1.5.3. In addition, I applied the dispersion.test function in the AER package of the R Software to a Poisson regression model with number of differences on group diversity to test if the data was over-or under-dispersed (Kleiber & Zeileis, 2008). Moreover, I tested for zero-inflation as recommended by Kleiber and Zeileis (2008). In case of equi-dispersion without zero-inflation, a classic Poisson regression will provide appropriate analyses (Coxe, West, & Aiken, 2009). If the data is over-dispersed and characterized by zero-inflation, a negative binomial Poisson regression will be calculated which is appropriate for these characteristics (Coxe et al., 2009). In case of under-dispersion, I will use the vglm function of the VGAM package (Yee, 2013) of the R software in combination with the specification for a tilted Poisson distribution. The tilted Poisson distribution has been recently introduced by de Beuf and colleagues (2012), especially for under-dispersed count data. As a back-up, I will additionally report the results of the more common generalized Poisson regression model which has been recommended for both over- and under-dispersion (Consul & Famoye, 1992; Harris, Yang, & Hardin, 2012). For this purpose, the vglm function together with the genPoisson specification will be applied.

For all analyses described above, the conclusions will be summarized in the subsequent Section 4.2.1 and the *preceding analyses* part in the section of the respective hypothesis test. The specific results, however, will be provided in the Appendix 10.1.1. There, only statistical details about significant outliers, influential observations, deviations from normality, variance homogeneity, and other notable results will be reported as they indicate the need for special tests.

4.2 Study 1: Results

4.2.1 Data Assessment and Treatment of Data

24 participants did not complete the experiment and were therefore excluded from further analyses, leaving a total sample size of $N = 63$. The high dropout rate of 29% reflects a major problem of online studies like this, since the dropout rate in online studies is usually higher in comparison to laboratory settings (Reips, 2002). However, dropouts of participants typically follow a curve with the majority of dropouts at the beginning of the study. "A main reason for the initial dropout is the short orientation period many participants show before making a final decision on their participation" (Reips, 2002, p. 249). According to Reips (2002), an early dropout occurring before the experimental manipulation does not have a negative impact on data quality. In Study 1, 14 out of the 24 participants dropped out shortly after accessing the first two pages of the online study, where only the general procedure and the needed material (i.e., paper and pencil) were described. Therefore, these dropouts did not have an effect on the experimental manipulation. This reduces the dropouts during the experimental manipulation to 14 percent. Five of the remaining ten dropouts were in the low diversity condition; the other five were in the high diversity condition. Therefore, the two conditions did not differ systematically in their dropout rate. Hence, this influence could also be excluded.

Tests for outliers or observations exerting an undue influence were not significant. Therefore, no further observations needed to be excluded. Due to the specific nature of the hypothesis, one-tailed testing was applied.

4.2.2 Hypothesis Test: Group Diversity on Comparison Mindsets

Preceding Analyses. As can be seen in Appendix 10.1.1.1, no significant skewness or deviation from homogeneity of variance was identified. However, normality tests indicated a deviation from normality. In addition, the data was significantly under-dispersed. At the same time, no zero-inflation was found. Therefore, the results of a regression model with a tilted Poisson distribution for the effect of group diversity on the frequency of reported differences will be reported. This regression models is specifically suited for under-dispersed count data. As it is quite new, however, the results of a generalized Poisson regression model will be additionally provided to back up the validity of the results.

Results. A tilted Poisson regression model with number of differences on group diversity revealed that participants in the high group diversity condition reported more differences within their first three comparisons (M = 1.82, SD = .85) than participants in the low group diversity condition, (M = 1.23, SD = .97), with an estimate of .36, SE = .14, z = 2.52, $p < .003$ (one-tailed)[4]. Consequently, the model supports the prediction. Viewed from another perspective, participants in the low group diversity condition reported more similarities within their first three comparisons (M = 1.77, SD = .97) than participants in the high group diversity condition, (M = 1.15, SD = .83). Both number of reported similarities and differences are depicted in Figure 3 to demonstrate the differential sensitivity for similarities and differences of participants with exposure to homogeneous or heterogeneous group characteristics. Since the number of reported similarities and differences are nearly perfectly

[4] A generalized Poisson regression model yielded corresponding results with an estimate of .39, SE = .21, z = 1.86, $p < .032$ (one-tailed).

correlated, I refrain from reporting statistical analyses for number of similarities as these would have led to the same results.

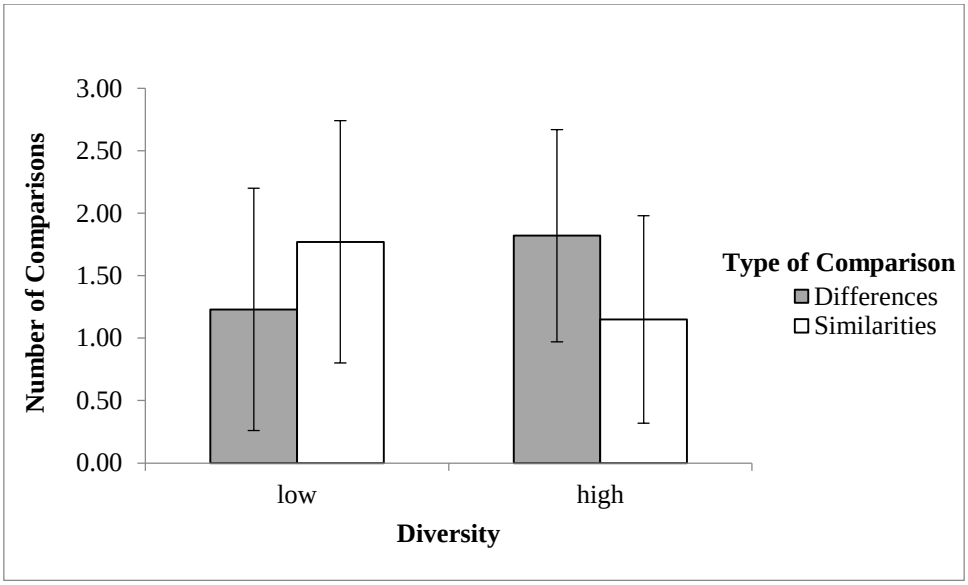

Figure 3. Mean number of comparisons as a function of group diversity and type of comparison in Study 1. Error bars represent ± 1 *SD.*

To conclude, participants in the high group diversity condition made more difference comparisons and were hence more sensitive towards differences than the participants in the low group diversity condition. This finding indicates that participants in the high group diversity condition were more prone to a difference mindset than participants in the low group diversity condition. In contrast, participants in the low group diversity condition used more similarity comparisons and were hence more sensitive towards similarities than participants in the high group diversity condition, which indicates a higher prevalence of a similarity mindset in groups with low diversity than in groups with high diversity.

4.3 Study 1: Discussion

Answering Research Question 1, Study 1 provides evidence that group characteristics, such as group diversity, can activate comparison mindsets. In correspondence with Proposition1, group characteristics pointing to member similarity (i.e., low group diversity)

activate a similarity mindset whereas group characteristics pointing to member differences (i.e., high group diversity) activate a difference mindset.

These findings have two major implications. First, they show that comparison mindsets can be induced by group characteristics and can therefore become relevant in social contexts, such as negotiation preparations within groups as well as group-on-group or representative negotiations. It is therefore of high practical relevance to access the effect of comparison mindsets on group interactions before and during the negotiation. Second, the manipulation of comparison mindsets with the help of group diversity provides a hint that previous effects of diversity on projection and information elaboration (Ames, 2004a; Homan et al., 2007a, 2007b; Phillips & Loyd, 2006; Phillips et al., 2008; Phillips et al., 2006; Sommers, 2006; Sommers et al., 2008; Zhong, 2001) might be due to the fact that, truly, comparison mindsets have been manipulated. This finding can inspire future studies to see diversity in the light of comparison mindsets.

5 Study 2: How Comparison Mindsets influence within-group Projection

In the context of negotiations, research so far neglected within-group projection. Instead, projection was assessed in the form of fixed pie perceptions and illusory correlations which resemble between-group or -party projection (Pinkley et al., 1995). Both within-group and between-group projection decrease the elaboration of the projected contents (e.g., Phillips et al., 2006; Pinkley et al., 1995; Thompson, 1990). Since a difference mindset, compared to a similarity mindset, has been found to decrease projection (Todd et al., 2011), the second research question asks how comparison mindsets influence group members' projection of their own interest-weightings in a negotiation onto their fellow group members.

Especially in negotiations where group members' interest-weightings differ from each other, a low elaboration of this information is highly problematic because understanding the interest-weightings and the resulting priorities of negotiation issues is an important precondition for high joint outcomes (e.g., Hyder et al., 2000; Olekalns et al., 1996; Weingart & Olekalns, 2004). Showing that comparison mindsets influence group members' projection of their own interest-weightings onto their fellow group members would therefore provide insight into the way comparison mindsets influence information elaboration and outcomes of negotiation groups whose members have diverse interest-weightings. Proposition 2 states that, compared to a similarity mindset, a difference mindset leads to a lower tendency to project own interest-weightings onto fellow group members.

For manipulating comparison mindsets, the same computer-mediated paradigm as in Study 1 was used, however with *one major difference*: In Study 1, comparison mindsets were manipulated with the help of diversity (i.e., high versus low diversity between the answers of the group members). In Study 2, however, any suspicion that diversity could be a potential

alternative explanation for the effects on within-group projection was to be avoided. This was achieved by providing all participants with the exact same number of different and similar answers in the bogus feedback about their group, no matter if a similarity or a difference mindset was manipulated. Hence, any result can clearly be attributed to the manipulation of comparison mindsets rather than a different level of diversity within the two mindset conditions. For the manipulation of a similarity mindset, participants were asked to look only for similarities between group members' answers. For the manipulation of a difference mindset, participants were asked to look only for differences between group members' answers. This adapted mindset manipulation in Study 2 also corresponds to the procedure used by several authors to manipulate comparison mindsets (Corcoran et al., 2009; Mussweiler, 2001; Mussweiler & Damisch, 2008). In this procedure, participants only have to look for *one comparison type* between two provided stimuli (e.g., two pictures of urban market squares) rather than for both. Therefore, participants are asked to look only for similarities, when a similarity mindset is manipulated, and only for differences, when a difference mindset is manipulated (cf. Corcoran et al., 2009; Mussweiler & Damisch, 2008; Todd et al., 2011).

It is important to note that in Study 2, group members' projection of their own interest-weightings was measured before any real interaction within the group had taken place. To create a situation in which an individual identified with a group without directly interacting with his or her fellow group members, a virtual group setting was created. In this virtual group setting, participants expected to interact with two other group members in a virtual negotiation preparation. However, participants' projection of their own interest-weightings onto these two group members was assessed without any actual subsequent interaction between them.

5.1 Study 2: Method

5.1.1 Participants and Design

74 Students from the University of Trier with different academic majors (e.g., economics, educational sciences, psychology) participated in this online study and were recruited via circular e-mail (62.3 % female, age 18 – 31, M = 22.89, SD = 2.64). As compensation, participants received 5 Euros or course credit. Comparison mindsets were manipulated as the experimental between-subjects factor with two levels (similarity mindset vs. difference mindset).

5.1.2 Procedure

Participants could individually access the study at every computer that was available to them by clicking the hyperlink provided in the circular email. The same cover story like in Study 1 was used, telling participants that the study was comprised of three unrelated tasks which had to be pre-tested for future experiments.

The first task resembled the manipulation of the independent variable comparison mindsets (cf. Mussweiler, 2001; Mussweiler & Damisch, 2008). Like in Study 1, participants were informed via the online program on their computer that they would form a virtual group of three with two other participants who ostensibly took part in the online study at the very same time. In reality, however, these other two participants were bogus and served to manipulate the independent variable comparison mindsets. In the similarity mindset condition, participants had to report three similarities between the three members of this virtual group. In the difference mindset condition, they had to report three differences. The exact procedure is described in Section 5.1.4.1 in more detail.

The second task was a distractor to obscure the relationship between independent and dependent variable. Right after this distractor task, a treatment check tested whether the comparison mindsets were still active.

In the third task, the dependent variable *projection of interest-weightings* was assessed. Participants were informed that this task resembled a negotiation preparation. In this task, they would have to prepare a negotiation together with the two other members of their virtual group from the first task of the online study. Participants were provided with information about their own interest-weightings in the upcoming negotiation. Subsequently, the degree to which participants projected these interest-weightings onto their fellow group members was assessed. Thereafter, no real negotiation preparation took place but the study was terminated. Participants answered demographic questions, were thanked and debriefed.

5.1.3 Negotiation Preparation Task

The negotiation setting was adapted from Trötschel and colleagues (2011). It constituted the negotiation of two travel agencies about the distribution of a number of hotels on a Mediterranean island.

Participants were asked to imagine the following situation: Together with the other two members of their virtual group from the first task of the online study, they would prepare and conduct a virtual negotiation. As a virtual negotiation group, they would represent the travel agency *Happy Tours* in a negotiation with another travel agency. Each member of this virtual negotiation group was the responsible manager of one out of three regional Happy Tours offices in North, Middle and South Germany. The participants were assigned the role of the regional manager *Happy Tours Middle Germany*. The two bogus participants were the regional managers of *Happy Tours North Germany* or *Happy Tours South Germany*, respectively. The negotiation was about the distribution of eight hotels on a popular island between Happy Tours and its major competitor.

As the central piece of information, participants read what was most important to the Happy Tours' clients in Mid Germany for their decision to book a hotel and what was less important. This information resembled the clients' interest-weightings. On four hotel dimensions (i.e., sports facilities, cuisine, cultural activities, and location) the clients' interest-weightings in Mid Germany were indicated with the help of point values, ranging from 1 (*unimportant*) to 5 (*very important*). Participants were told that highly-weighted customer interests on these hotel dimensions translated to high booking rates and hence higher profits for Happy Tours. Therefore, a highly-weighted customer interest on a hotel dimension (e.g., sports facilities) led to a highly- weighted interest of Happy Tours on this dimension. Therefore, a hotel that served this highly-weighted hotel dimension (e.g., sports facilities) very well was more valuable for Happy Tours than a hotel that served this highly-weighted dimension to a lower extent.

Participants were told that the goal of the upcoming negotiation was to obtain as many valuable hotels for Happy Tours as possible and to equally attract clients from all different regions in Germany. Consequently, the task provided a common group goal for the negotiation. At the same time, it provided cues for the potential existence of diverse interest-weightings within the negotiation group: First, group members represented three different regions in Germany. Second, participants were only given the clients' interest-weightings from Mid Germany, not from all three regions. In this way, the task provided room for perceptions of similarity as well as differences, therefore allowing both a high and a low level of projection. After participants had time to familiarize themselves with the clients' interest-weightings within their region, projection of interest-weightings was assessed. It is important to note that no interaction between participants and their fellow group members had taken place. The situation is therefore comparable to the very beginning of a preparation phase within a newly formed negotiation group where the group members have not met yet.

5.1.4 Operationalization

5.1.4.1 Independent Variable: Manipulation of Comparison Mindsets

Similar to the procedure in Study 1, the manipulation was comprised of two steps. In a first step, participants in both experimental conditions answered twelve questions about their preferences and interests with regard to their vocational and private life. In a second step, they saw a table with their own individual answers together with the twelve answers of the two other bogus members of their virtual group. Please remember the two important differences to the procedure used in Study 1. First, in Study 2 there was an equal amount of similar and different answers ostensibly provided by the three members of the virtual group. This means that out of twelve questions, six questions were answered similarly and six questions were answered differently by all three members of the virtual group. Therefore, in both mindset conditions, the diversity between the three group members' answers was held constant. Second, participants could not choose for themselves whether to write down similarities or differences between the group members' twelve answers. Instead, participants in the difference mindset condition were asked to look for and write down differences between the group members' answers while participants in the similarity mindset condition were asked to look for and write down similarities. The instructions were adapted from the mindset manipulation task by Mussweiler and Damisch (2008) as well as Ames (2004b). In the similarity mindset condition, participants read:

> Please pay attention to the similarities in your group of participants − participant 1 (you), participant 2 and participant 3. Please write down three similarities between the answers in your group that catch your eye.

Likewise, participants in the difference mindset condition read:

Please pay attention to the differences in your group of participants − participant 1 (you), participant 2 and participant 3. Please write down three differences between the answers in your group that catch your eye.

5.1.4.2 Treatment Check

Participants completed the treatment check right before the assessment of the dependent variable projection. In this way, it was examined whether participants complied with the experimental procedure of the comparison mindset manipulation. Participants were asked to write down what they remembered about the answers of the group members. If participants did not write down any memory that corresponded to their experimental manipulation (e.g., similarities in the similarity mindset condition) their memory was classified as inconsistent.

5.1.4.3 Manipulation Check

To check whether participants paid more attention to similarities in the similarity mindset condition and to differences in the difference mindset condition, participants' perceived diversity was assessed with two items ("The people in my group are similar to each other"; "The people in my group are different from each other) adapted from previous research (e.g., Doosje, Ellemers, & Spears, 1995; Hutchison, Jetten, Christian, & Haycraft, 2006). Both items were accompanied by seven-point scales ranging from 1 (*do not agree at all*) to 7 (*strongly agree*), (r = .72, M = 3.50, SD = 1.05).

5.1.4.4 Dependent Variable: Projection of Interest-weightings

To measure the degree to which participants projected their interest-weightings onto their fellow group members, participants' importance ranking for their own interests was compared with the importance ranking they completed for the interests of one of the other two bogus members of their virtual group. This measurement was obtained in three steps: First,

participants were asked to indicate how important each of the four hotel dimensions (i.e., sports facilities, cuisine, cultural activities, location) were when deciding which hotels they wanted to attain in the negotiation. Participants rated how important the four hotel dimensions were from their perspective by ranking them from 1 (*most important)* to 4 (*least important*). Please remember that the importance (i.e., the weighting) of the four hotel dimensions depended on the information the participants had received about their clients' interest-weightings in Mid Germany. Second, participants were asked to put themselves into the shoes of the group member from North Germany and complete the same ranking from his or her perspective. Third, a *rank difference score* was calculated to assess the projection of participants' interest-weightings onto their fellow group members. In the style of the interest estimation score by Trötschel and colleagues (2011), I summed up the absolute differences between the importance ranking participants completed for their own interests and the importance ranking participants completed from the perspective of their fellow group member from North Germany. The more the interest ranking (i.e., the interest-weighting) for the fellow group member did reflect the participant's own interest ranking, the lower was the sum of absolute differences. Consequently, the score for the projection of interest-weightings could vary between 0 (*all interests ranked identically, i.e.,* $\sum |(1-1)| + |(2-2)| + |(3-3)| + |(4-4)|$) to 8 (*all interests ranked with maximum dissimilarity, i.e.,* $\sum |(4-1)| + |(3-2)| + |(2-3)| + |(1-4)|$). The lower this sum of absolute differences between the interests' rankings, the more did participants project their own interest-weightings onto their fellow group members.

5.1.5 Hypothesis

Participants in a difference mindset project their own interest-weightings in the upcoming negotiation to a lower degree than participants in a similarity mindset. This prediction is indicated by a higher sum of absolute differences between the importance ranking participants with a difference mindset completed for their own interests and the

importance ranking they completed for the interests of their bogus group member compared to the sum of absolute differences of participants with a similarity mindset.

5.1.6 Analyses of Data

5.1.6.1 Software used for Statistical Analyses

Statistical tests were conducted with the R software.

5.1.6.2 Detection of Outliers and influential Observations

The same procedures for identifying outliers were used as in Study 1 (cf. Section 4.1.5.2).

5.1.6.3 Analyses for the Selection of statistical Methods for Hypothesis Testing

For selecting the appropriate statistical methods, the same procedures as in Study 1 were used (cf. Section 4.1.5.3).

5.1.6.4 Special statistical Methods for Analyzing Projection of Interest-weightings

Trötschel and colleagues (2011) treated their interest estimation score, which was adapted here, as an interval scale variable. However, the dependent variable projection of interest-weightings is based on the ordinal ranking of the hotel dimensions according to their importance and is hence closer to an ordinal scale than an interval scale level. Therefore, I did not apply an independent samples t-test for hypothesis-testing, since this test is only suited for interval scale data. Instead, I used Brunner and Munzel's (2000) generalized Wilcoxon test, which has been suggested for comparing two small to medium-sized groups based on ordinally scaled variables (Delaney & Vargha, 2002) and yields valid results even in case of skewed data and unequal variances (Neuhäuser, 2010). In case of heavily skewed data and very small sample sizes (n = 10), the validity of the results may be impaired. However, since the sample sizes in the two experimental conditions are considerably larger (n_1 = 22, n_2 = 28), the test can be considered robust under these circumstances. Further testing of the

assumptions for parametric tests is thus not required for the dependent variable and will not be reported. The test is available in the lawstat package of the R software with the brunner.munzel.test function (Noguchi, Hui, Gel, Gastwirth, & Miao, 2012).

The conclusions of these tests above will be summarized in section 5.2.1 *data Assessment and treatment of data* or the *preceding analyses* part in the section of the respective hypothesis test. The specific results will be provided in the appendix. However, only statistical details about significant outliers, influential observations, deviations from normality, homogeneity of variance, or other notable results will be reported as they indicate the need for special tests.

5.2 Study 2: Results

5.2.1 Data Assessment and Treatment of Data

Five participants dropped out during the experimental manipulation (cf. Appendix 10.1.2.1 for a more detailed description of the dropouts and the rationale for their exclusion). Two more participants aborted the study and resumed it later. As this behavior reduced the control of the experimental setting to an even lower degree as it is usually the case for online studies, these two participants were excluded as well. Three additional participants had to be excluded from data analyses because their treatment checks revealed that they did not comply with the instructions in the comparison mindset manipulation. Neither the Grubbs Test (Grubbs, 1950) nor the Bonferroni outlier test indicated influential outliers or observations. Therefore, no further participants had to be excluded. Consequently, 14 percent of the participants who took part in the experimental manipulation had to be excluded. The new sample size for the subsequent analyses was $N = 50$.

Due to the specific nature of the hypothesis, one-tailed testing was performed.

5.2.2 Manipulation Check for Comparison Mindsets

Preceding Analyses. No statistical test to assess the distribution of the raw data or the studentized residuals revealed a deviance from normality. In addition, no violation of the homogeneity of variance of the raw data and the studentized residuals within the two comparison mindset conditions was indicated by the Fligner-Killeen test. Consequently, robust-tests as suggested by Wilcox (2012) were not warranted and only the results of the independent samples t-test will be reported.

Results. In correspondence with the manipulation of comparison mindsets, participants in the difference mindset condition reported their group to be more different (M = 4.34, SD = .92), than participants in the similarity mindset condition (M = 3.80, SD = 1.10), $t(48)$ = 1.84, p = .036 (one-tailed), η^2 = .07, d = .52. The manipulation can therefore be deemed successful.

5.2.3 Hypothesis Test: Comparison Mindsets on Projection of Interest-weightings

Preceding Analyses. Since Brunner and Munzel's (2000) generalized Wilcoxon test can be considered robust, testing the assumptions for parametric tests was not warranted.

Results. In the difference mindset condition, a higher sum of absolute differences between participants' importance ranking for their own interests and the importance ranking they completed for the interests of their fellow group member (Mdn = 4.00) was found than in the similarity mindset condition, (Mdn = 3.00; cf. Figure 4).

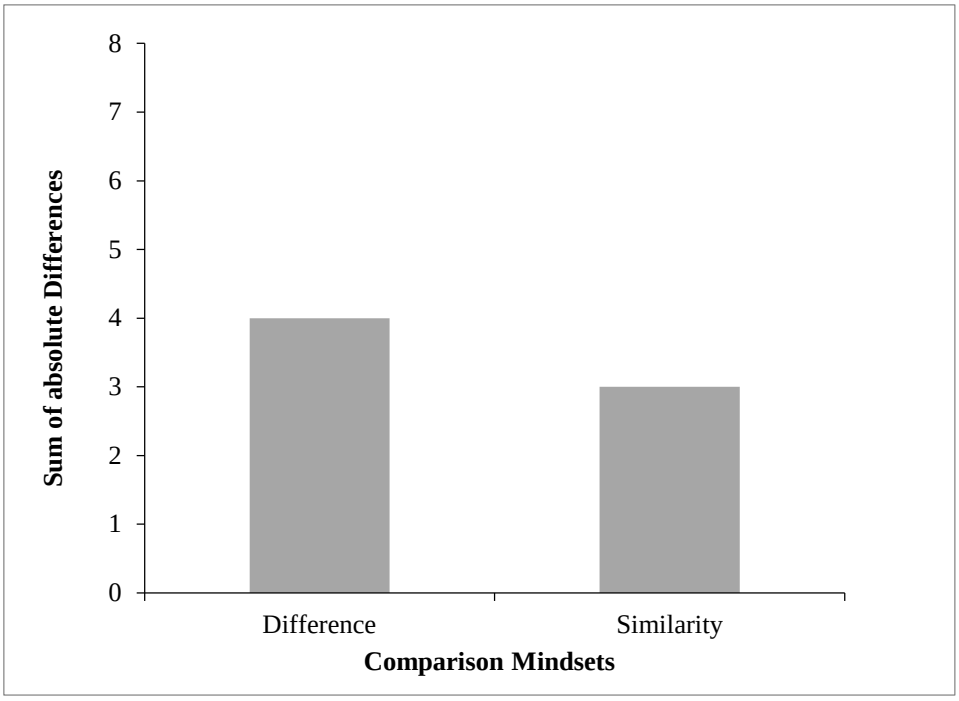

Figure 4. Median sum of absolute differences as a function of comparison mindsets in Study 2.

The Brunner and Munzel generalized Wilcoxon test (2000) yielded a test statistic of W_{BF} = 2.41 and a t-distribution-based p value of .01 (one-tailed). Degrees of freedom are taken from the Satterthwaite-Smith-Welch approximation, df = 49.19. The estimated effect size is .34, 90% *CI* [0.23, 0.45]. Therefore, it can be concluded that participants with a difference mindset project their interest-weightings in the upcoming negotiation to a lower degree onto their fellow group members than do participants with a similarity mindset.

5.3 Study 2: Discussion

The results of Study 2 support Proposition 2 and hence provide an answer to Research Question 2, asking how comparison mindsets influence group members' projection of their own interest-weightings onto their fellow group members: Compared to a similarity mindset, a difference mindset reduces group members' tendency to project their own interest-weightings onto their fellow group members.

Study 2 makes several methodological and theoretical contributions. *First*, Study 2 demonstrates that stimuli comparisons other than the common picture comparison task (e.g., Mussweiler & Damisch, 2008) can be used to manipulate comparison mindsets. Several authors describe comparison mindsets as the activation of either distinctive or common *self-referential information* "used as a comparison standard to draw inferences about other people (Mussweiler, 2003a, 2003b)" (Todd et al., 2011; p. 135). Within the common picture comparison tasks (cf. Corcoran et al., 2009; Mussweiler, 2001; Mussweiler & Damisch, 2008; Todd et al., 2011), the existence of self-referential information is at least questionable. In contrast, self-referential information is an important part of the stimulus configuration in the comparison mindset manipulation used in Study 2. Therefore, the transfer of the common comparison mindset manipulations to a setting where self-referential information is included in the stimuli configuration can be deemed suitable for manipulating a similarity or a difference mindset in a social context.

Second, Study 2 provides evidence that the effect of comparison mindsets on projection found in previous research (Ames, 2004b; Todd et al., 2011) can also be found in the context of negotiations. Moreover, it shows that projection does not only happen between negotiation parties (e.g., Pinkley et al., 1995) on opposed (i.e., fixed pie perceptions) or apparently opposed (i.e., illusory conflicts) interests. Instead, Study 2 demonstrates that group members may also project their own weightings onto the compatible interests of their fellow group members.

Third, the results suggest that group members with a similarity mindset tend to project their own interest-weightings onto their fellow group members even before having had the chance to interact with them. Therefore, it can be concluded that the level of projection resulting from comparison mindsets may influence the within-group information elaboration from the very beginning the members interact with each other. Members of a negotiation

group usually start interacting during a joint pre-negotiation preparation phase and may continue to work together during the negotiation with another group. Therefore, the effect of comparison mindsets on group members' within-group projection and its consequences for within-group information elaboration should be relevant before and during the negotiation. To sum up, showing how comparison mindsets influence group members' projection of their own interest-weightings onto their fellow group members was an important first step to provide insight into the way comparison mindsets may influence the information elaboration within groups before and during the negotiation.

The avoidance of any real social interaction between the group members in this study provided evidence for the basic effect of comparison mindsets on group members' projection of interest-weightings. However, it did not allow for an assessment how comparison mindsets influence the actual information elaboration behavior of group members before and during a negotiation. While some studies point to a relationship between comparison mindsets and information elaboration within negotiation groups (Brodt & Diez, 1999; Peterson & Thompson, 1997), no direct empirical evidence has been provided so far. Therefore, after having established the cognitive effects of comparison mindsets in Study 2, I now turn to the three remaining research questions and propositions about the way comparison mindsets influence the actual information elaboration behavior within groups before and during negotiations. As groups can be involved as negotiators as well as constituents in negotiations (see Section 2.2.2.1 and Section 2.2.2.2), I assessed the effect of comparison mindsets on the processes and outcomes in group-on-group negotiations in Study 3 and the effect on representative negotiations in Study 4.

6 Study 3: How Comparison Mindsets influence group-on-group Negotiations

Study 3 explored whether comparison mindsets go beyond influencing within-group projection but also influence group members' actual behavior and outcomes. Therefore, I moved from assessing individual participants' perceptions and cognitions about virtual groups to investigating the information elaboration within real groups of three participants before and during a negotiation with another group of three. In this way, Research Questions 3, 4 and 5 (see Figure 1 and 2) and the propositions associated with them became the focus of attention.

In correspondence with Research Question 3, it was explored how comparison mindsets influence the within-group information elaboration and outcomes in a preparation phase prior to the negotiation. The answer stated in Proposition 3 is that a difference mindset, compared to a similarity mindset, leads to a higher within-group elaboration of group members' diverse interest-weightings prior to the negotiation. In this way, a difference mindset enables negotiation groups to better identify and include those issues in their first offers that meet their most important interests best. Hence, groups with a difference mindset achieve a high first offer quality than groups with a similarity mindset.

Addressing Research Question 4, Study 3 explored how comparison mindsets influence joint outcomes in integrative group-on-group negotiations. Proposition 4 suggests three potential mediation paths in which a difference mindset, compared to a similarity mindset, increases the joint outcomes of negotiation groups (cf. Figure 1). *The first path* is via information elaboration before the negotiation, indicated by first offer quality. *The second path* is via within-group information elaboration during the negotiation, indicated by the increase or decrease of interest-consistent claims over the course of the negotiation. *The third path* is via

both first offer quality at the beginning of the negotiation and interest-consistent claims during the negotiation, because one mechanism might not be sufficient without the other.

Finally, Study 3 resembles the first part of addressing Research Question 5 how comparison mindsets affect joint outcomes in group-on-group versus representative negotiations. In contrast to representative negotiations, group-on-group negotiations provide the chance for groups to engage in information elaboration before as well as during the negotiation. Therefore, Proposition 5 (see P 5: group-on-group, Figure 1) assumes for negotiations between groups that the effect of comparison mindsets on joint outcomes is mediated via either one of the three mediation paths. By finding out in which way comparison mindsets affect joint outcomes in group-on-group negotiations, it is possible to compare the results with the way comparison mindsets affect representative negotiations.

To answer these three research questions, every experimental session in Study 3 consisted of a face-to-face negotiation between two three-person groups and a prior face-to-face negotiation preparation within each of the two groups. In these two negotiation groups the *identical* comparison mindset was manipulated (i.e., both groups either had a difference mindset or a similarity mindset at the same time). Comparison mindsets were manipulated like in Study 2. To strengthen the manipulation, comparison mindsets were manipulated two times: First, at the very beginning of an experimental session, and second, after participants had read all instructions and were about to enter the pre-negotiation preparation. This second mindset manipulation was added to counter the fading of the experimental manipulation, as the instructions prior to the pre-negotiation preparation were longer and more complex than the instructions in Study 2. The dependent variables were assessed during and at the end of the pre-negotiation preparation phase and the subsequent group-on-group negotiation.

The negotiation paradigm was an adaptation of the paradigm used in Study 2 and the paradigm developed by Trötschel and colleagues (2011). This paradigm breaks down

negotiation parties' preferences for negotiation issues into two components underlying these preferences: Negotiation parties' interest-weightings and the degree to which negotiation issues serve those interests (i.e., their performance). The preference for a negotiation issue is high when it performs high on highly-weighted interests of the negotiator. With the help of these characteristics of the paradigm, I created a negotiation task according to the principles of a hidden profile task. By distributing the information about a group's interest-weightings among the three members of each negotiation group, each group member held a unique set of interest-weightings. To learn about the differential weightings of the group's interests, the unique interest-weightings each group member held had to be combined with the interest-weightings of the other two group members. The three members of one group were explicitly told that they all had the common goal to achieve high outcomes for their group. On one hand, this common group goal could create a situation in which the importance of joint decision making and information elaboration was emphasized. On the other hand, the common group goal could also distract from the mere existence of diverse information and interest-weightings within the negotiation group. This ambiguous setting provided an ideal opportunity to assess the effects of comparison mindsets on the information elaboration and outcomes of groups with diverse interest-weightings.

Since the results of the manipulation check in Study 2 confirmed the effect of the comparison mindset manipulation, I will not report additional manipulation checks in the subsequent studies. This decision corresponds to previous research on comparison mindsets, which completely refrains from any usage of manipulation checks (e.g., Mussweiler & Damisch, 2008; Todd et al., 2011).

6.1 Study 3: Method

6.1.1 Participants and Design

276 students from the University of Trier with different academic majors (e.g., economics, educational sciences, psychology) participated in this study and were recruited via circular e-mail and leaflets. Due to technical difficulties, demographics of the first two experimental sessions with twelve participants in total could not be recorded. Therefore, only the demographics of the remaining 264 participants can be reported here (58.3 % female, age 17 – 48, M = 22.64, SD = 3.39). However, experimenters reported that these twelve participants had no demographic features diverging from the other participants. Other problems did not occur in these sessions. Hence, the data of the twelve participants could be kept in the analyses. As compensation, participants received 12 - 14 Euros, as the duration of the study varied, or course credit. Comparison mindsets were manipulated as the experimental between-subjects factor.

6.1.2 Procedure

For each experimental session, six participants were recruited. Upon arrival, participants were randomly assigned to one of two travel agencies. Each of the six participants had to draw a button from a bag. Three of these buttons depicted the logo of a travel agency named *Red Sunset Travel* (Group A: RST). The other three buttons depicted the logo of a travel agency named *Blue Sea Travel* (Group B: BST). After putting on the button, participants were told that they would form a group with the other two participants who drew the button of the same agency (i.e., RST or BST, respectively). Together, they would represent this agency in a negotiation with the group of the other agency about the distribution of hotels on an island. Subsequently, both three person groups were taken to separate rooms. Each experimental session of the study was comprised of three phases. In the *first phase*, the comparison mindsets of the individual members of each group were manipulated. In the

second phase, both negotiation groups had a negotiation preparation within their respective group. In the *third phase*, the two groups met to negotiate the distribution of the six hotels.

In the first phase of the study, each participant was seated in a separate cubicle in the respective room of his or her group. Here, he or she individually underwent the manipulation of one of the two comparison mindsets (i.e., either difference or similarity mindset) on the computer. Like in Study 1 and Study 2, this task was allegedly conducted for another experiment and was therefore unrelated to the negotiation study. The members of both negotiation groups underwent *the same* comparison mindset manipulation. This means that in both groups of one experimental session, the identical comparison mindset (i.e., similarity vs. difference mindset) was manipulated. Next, each member of a negotiation group received a unique booklet with a unique set of information about his or her agency's interest-weightings. These interest-weightings concerned six hotel dimensions. Importantly, the information about each agency's interest-weightings was distributed among all three members of each negotiation group. For this reason, each group member held a unique set of interest-weightings. To find out which interests were more important and which were less important for their agency, group members had to elaborate their diverse interest-weightings within their group. They had the chance to do so during the within-group pre-negotiation preparation in Phase 2 or during the group-on-group negotiation in Phase 3.

In the second phase of the study, the three members of each group met face-to-face in order to collaboratively prepare for the upcoming negotiation. During this pre-negotiation preparation, group members had ten minutes time to discuss the upcoming negotiation and to agree on a first offer they wanted to start the negotiation with. Both group preparations in each experimental session were videotaped to assess the within-group information elaboration.

In the third phase of the study, the two groups met face-to-face to negotiate the distribution of the six hotels between the two travel agencies. Both groups were seated vis-à-vis to each other. After reading their first offers to each other, the two groups had three negotiation rounds of five minutes to reach an agreement. They were informed that if they failed to reach an agreement after those three rounds, other travel agencies would have the chance to acquire the hotels. One minute before the end of each negotiation round, the groups were asked to come up with a claim for this round. At the end of each round, both groups read their claims for the current round to each other. At the end of the negotiation, an experimenter recorded the joint negotiation outcome of the two negotiation groups. Participants went back to their cubicles where they individually answered demographical questions, were thanked for their participation and debriefed.

6.1.3 Negotiation Task

Building on the negotiation paradigm by Trötschel and colleagues (2011) and the paradigm used in Study 2, the negotiation setting described the negotiation between two travel agencies about the distribution of six hotels on a Mediterranean island. Three construction principles are crucial within this task: The *first construction principle* determines how the single negotiation groups can maximize their single outcomes in the negotiation. The *second construction principle* determines the way the information about each agency's interest-weightings is distributed among the three members of one group in order to create a hidden-profile situation. In this way, this principle determines how the two negotiation groups in each experimental session could maximize their joint outcomes. The *third construction principle* involves reversed integrativity as a special challenge for the negotiation groups in obtaining high joint outcomes.

6.1.3.1 Construction Principle 1: Maximizing the Group's single Outcomes

The task for each group representing a travel agency was to obtain the maximum possible outcome for the agency. The maximum possible outcome for a single negotiation group was determined by two characteristics. First, it was determined by the amount of hotels a group could secure for its agency: The more hotels a negotiation group could secure for its agency, the higher the single outcome for an agency group. Second, it was determined by the value of a single hotel for the travel agency group and hence its preference for this hotel: The more valuable a hotel was for an agency, the higher the single outcome was for an agency if its negotiation group could secure this hotel. Akin to the paradigm by Trötschel and colleagues (2011), the value of a hotel for a travel agency was determined by two characteristics: First, the customers' interest-weightings concerning the six dimensions of the hotels (i.e., service, general facilities, cultural activities, sports facilities, location, and cuisine) and second, the performance of a hotel on these six dimensions.

Group members received the specific information about the customers' interest-weightings in the form of a customer survey in their booklet. Each member of a negotiation group received one out of three customer surveys: One member got the survey from the Northern German offices of the agency that contained information about the customers from Northern Germany (e.g., RST Office Northern Germany, see Table 2). The remaining two group members got a survey from either the Middle German or Southern German offices of the agency. The reason why each member of a negotiation group held one out of three different customer surveys will be explained in the next section about Construction Principle 2. First, it is important to understand the content of these surveys, as these form the basis of the two travel agencies' interest-weightings and hence represent one characteristic that contributes to the value of the six hotels.

	Hotel Characteristics
Hotel Dimensions	
Service	- Staff speaks good English or German - Professional childcare service - Transfer from and to airport / train station / harbor - Fast and uncomplicated check-in / check-out - Hotel takes care of logistics for private excursions (e.g., car rentals) - Pets are allowed and taken care of, if needed
General Facilities	- Playground and games for children - Cots are available - Air-conditioned rooms - On-site parking - Free wireless internet - Quiet hotel room (insulated walls, windows) - Good room facilities (e.g., large bathroom, fridge) - Hotel pool - Big and well equipped lounge area - International TV channels, pay-per-view movies
Cultural Activities	- Information service about the history and culture of the region - Family friendly daytime entertainment program at the hotel (such as games, fun competitions, etc.) - Evening entertainment in the hotel (e.g., concerts, parties, movies) - Excursions and guided tours to the attractions of the region
Sports Facilities	-
Location	- Quiet location - City center within walking distance / fast public transport - Public transport available - Safe location for children (away from main roads)
Cuisine	- Special dietary requirements are taken into account (e.g., vegetarian and vegan food, allergies) - Local food available - Hotel, bistro and bar open at all times - Room service - Various menu options (e.g., buffet, à la carte) - Catering for every budget (e.g., self-catering, half and full board)

Table 2. Hotel characteristics reported by the customers of the Northern German RST offices (Study 3). An increase in reported hotel characteristics by the customers in each of the six hotel dimensions resulting in an increase of importance in this dimension in deciding which hotel to book. Number of reported hotel characteristics varied between 0 and 10.

In each of the three surveys, customers had been asked to indicate hotel characteristics within the aforementioned six hotel dimensions that influenced their decision to book a hotel. Group members were told that customers' interest-weighting for a hotel dimension was indicated by the *number of hotel characteristics* the customers reported within this dimension (e.g., service): The more hotel characteristics the customers reported, the more important the hotel dimension was for their decision to book the hotel and hence the higher their interest-weighting for this hotel dimension. Since booking rates determine a travel agency's profit, customers' interest-weightings directly transfer to the travel agency's interest-weightings. If no hotel characteristics had been reported at all within one hotel dimension (e.g., sports facilities, Table 2), customers' interest-weighting for this dimension was low and so was it for the agency. If ten hotel characteristics had been reported by the customers (e.g., general facilities, Table 2) customers' interest-weighting for this dimension was high and so was it for the agency. Therefore, the customers' interest-weightings for the six hotel dimensions varied between 0 (*low interest*-weighting *on the respective hotel dimension*) to 10 (*high interest*-weighting *on the respective hotel dimension*). To sum up, some of the customers' interests had a high weight compared to the other interests (e.g., general facilities, service, and cuisine) whereas other interests had a low weight (e.g., sports facilities, cultural activities, and location).

The performance of a hotel on each of the six hotel dimensions was indicated by stars, ranging from 1 (*low performance on the respective hotel dimension*) to 5 (*high performance on the respective hotel dimension*). Hence, the more stars a hotel had received for a hotel dimension (e.g., service) the better its performance on this hotel dimension.

To identify how valuable a hotel was for an agency, group members had to link the information about the customers' interest-weightings (i.e., the agency's interest-weightings) on the six hotel dimensions to the performance of a hotel on these dimensions. The higher a

hotel performed on those hotel dimensions that were of high interest for the customers, the more valuable a hotel was for the travel agency and hence for the group. The exact numerical value of a hotel for a group could be identified by calculating the product of the number of interest points (ranging from 0 to 10) and the number of stars for each hotel dimension (ranging from 1 to 5) and summing up all six of these products. Consequently, the higher the performance (i.e., the more stars) of a hotel in the provided dimensions with a highly-weighted customer interest, the more valuable a hotel was for the agency (i.e., $V_I = \sum I_I * Q_{ID}$; with V_I = value of a hotel, I_I = interest-weighting on hotel dimension, and Q_{ID} = hotel's performance on the respective hotel dimension; cf. Giacomantonio et al., 2010; Trötschel et al., 2011). As a result, the single negotiation groups could maximize their single outcomes with the help of three strategies: By getting as many hotels as possible out of the negotiation, by securing as many valuable hotels as possible for their group, or by applying both strategies.

6.1.3.2 Construction Principle 2: Diversity in Interest-weightings as a Challenge for within-group Information Elaboration

While the negotiation paradigm is in many ways very similar to the paradigm of Trötschel and colleagues (2011), there is one important difference. This difference constitutes the special challenge of this negotiation task: Within both negotiation groups, the members did not hold identical information about the interest-weightings of their travel agency's customers. Instead, the information about the customers' and hence the whole agency's interest-weightings was distributed among the three members of each negotiation group. Therefore, Construction Principle 2 resembles the principle of a hidden profile task: To identify the important information for the whole group, group members had to exchange and combine (i.e., elaborate) this distributed information about the group's interest-weightings.

As already mentioned in Section 6.1.3.1, the distribution of interest-weightings among the three group members of each agency was achieved with the help of customer surveys from

three geographical regions where the agencies had their offices. Each group member received a unique customer survey from the offices in Northern, Middle or Southern Germany. Table 3 depicts the results of these customer surveys.

	Red Sunset Travel			**Blue Sea Travel**		
Hotel Characteristics	Northern Offices	Middle Offices	Southern Offices	Northern Offices	Middle Offices	Southern Offices
	Number of reported hotel characteristics within hotel dimensions					
Service	6	6	0	10	4	4
General Facilities	10	4	4	0	6	6
Cultural Activities	4	10	4	6	0	6
Sports Facilities	0	6	6	4	10	4
Location	4	4	10	6	6	0
Cuisine	6	0	6	4	4	10

Table 3. Number of hotel characteristics within each hotel dimension reported by the customers of the Northern, Middle and Southern offices of RST and BST. Number of hotel characteristics varied between 0 (low *interest-weighting on respective hotel dimension*) to 10 (*high interest-weighting on respective hotel dimension*). Note that customers' different interest-weightings account for the diverse interest-weightings within and between the two negotiation groups BST and RST in Study 3.

As can be seen in Table 3, one group member was given the survey from the Northern German offices of the agency that contained information about the customers from Northern Germany (i.e., RST Northern Offices). The remaining two members were given a survey from either the Middle German offices (i.e., RST Middle Offices) or Southern German offices (i.e., RST Southern Offices). When looking at the number of reported hotel characteristics in Table 3, it is important to remember that the more hotel characteristics the customers reported for one hotel dimension, the more important this hotel dimension was for their booking decision and hence the higher their interest-weighting on this hotel dimension (cf. Section 6.1.3.1). With this in mind, it becomes clear that customers' interest-weightings from the Northern, Middle and Southern offices of both agencies' differed from each other. For instance, with

four reported hotel characteristics, the hotel dimension *general facilities* was rather unimportant for customers of the RST offices in Middle Germany and South Germany compared to other hotel dimensions (i.e. low interest-weighting). In contrast, with ten reported hotel characteristics, it was highly important for customers of the RST offices in North Germany, compared to all remaining hotel dimensions (i.e. high interest-weighting).

For each negotiation group, knowing the customers' interest-weightings from all German regions taken together was the key to the integrative potential of the group-on-group negotiation. Knowing the customers' interest-weightings was only possible with a high level of within-group elaboration of group members' diverse information. This high level of within-group information elaboration could be achieved in three ways: By summing up the number of reported hotel characteristics from all three customer surveys (i.e., from North, Middle and South Germany), by averaging the hotel characteristics or by making an approximate estimation. As can be seen in Table 3, RST's customers from all three German regions reported more hotel characteristics within the hotel dimensions general facilities, cultural facilities and location (i.e., [4 + 4 + 10] / 3 = 6) than BST's customers from all three German regions did (i.e., [6 + 6 + 0] / 3 = 4). Therefore, the interests on these dimensions had a higher weight for RST than for BST. In contrast, BST's customers from all three German regions taken together reported more hotel characteristics within the hotel dimensions service, sports facilities and cuisine (i.e., [4 + 4 + 10] / 3 = 6) than RST's customers from all three German regions did (i.e., [6 + 6 + 0] / 3 = 4). Therefore, the interests on these dimensions had a higher weight for BST than for RST. These diverging interest-weightings between the two agencies allowed for logrolling, because three of the six available hotels served the highly-weighted interests of RST better whereas three of them served the highly-weighted interests of BST better.

	Hotels to be distributed between RST and BST					
	Albatros	Beauty	Charme	Dream	Eden	Fantasy
Hotel Dimensions	Number of Stars in each Hotel Dimension indicating Hotel Performance					
Service	2	5	2	2	1	2
General Facilities	2	2	2	2	5	1
Cultural Activities	5	2	1	1	2	2
Sports Facilities	1	2	2	2	2	5
Location	2	1	2	5	2	2
Cuisine	2	1	5	1	2	2

Table 4. Performance of the six hotels in each hotel dimension, indicated by the number of stars (Study 3). The more stars a hotel has within a hotel dimension, the higher its performance in this dimension. Note that hotels differ in the degree to which they perform on the six hotel dimensions.

As can be seen in Table 4, the hotels Eden, Albatros and Dream performed high on the hotel dimensions general facilities, cultural activities and location, as indicated by their 5 stars on these dimensions. Therefore, they served RST's highly weighted interests better. In contrast, the hotels Beauty, Fantasy and Charme performed high on the hotel dimensions service, sports facilities and cuisine, as indicated by their 5 stars on these dimensions. Therefore, they served BST's highly weighted interests better. If the two negotiation groups distributed the hotels in a way that each agency got those three hotels that served its highly-weighted interests best, the joint outcomes of the two groups could be maximized. Yet, finding this integrative solution was nearly impossible, if the members of each group did not sufficiently elaborate the diverse interest-weightings within their group. If they failed to exchange and integrate the different interest-weightings from the three customer surveys, group members could not obtain a mutual understanding of the high or low weightings of

their group's interests and even ran the risk of demanding the wrong hotels. This risk is due to Construction Principle 3 of reversed integrativity.

6.1.3.3 Construction Principle 3: Overcoming reversed Integrativity with Information Elaboration

The principle of reversed integrativity can be recognized when looking at the three customers' surveys (cf. Table 3) more closely. Within each negotiation group, always one of the three group members held the crucial information about the interest-weighting for the agency on one hotel dimension. At the same time, the information of the other two group members conveyed a nearly opposite picture of the interest-weighting on the very same hotel dimension. As can be seen in Table 3, for instance, the interest on the hotel dimension *general facilities* had a high weighting for the customers of the RST office in North Germany (ten reported hotel characteristics) while it had a low weighting for the customers of the RST offices in Middle Germany and South Germany (four reported hotel characteristics, respectively). At the same time, general facilities had a rather low weighting for the customers of the BST office in North Germany (zero reported hotel characteristics) while it had a high weighting for the customers of the BST offices in Middle Germany and South Germany (six reported hotel characteristics). In case of a high information elaboration, all three members of RST would learn that the customers' interests on general facilities overall had a high weight compared to the interests on other dimensions (i.e., [10 + 4 + 4] / 3 = 6). Correspondingly, all three members of BST would learn that general facilities was a hotel dimension with an overall low interest-weight compared to other dimensions, if they elaborated their information correctly (i.e., [0 + 6 + 6] / 3 = 4). However, if the two groups failed to elaborate the diverse information about the interest-weightings their group members held, two out of three group members of RST and BST would arrive at the wrong conclusion about the interest-weighting on the hotel dimension general facilities: The group members of BST holding the customers'

surveys from Middle and South Germany would think that interests on general facilities had a high weight compared to other dimensions whereas the group members of RST holding the customers' surveys from Middle and South Germany would think that interests on general facilities had a rather low weight. Consequently, in both negotiation groups, two out of three group members could only learn about the actual weight of the interest on a hotel dimension for their whole agency, if the members of each group exchanged and elaborated their information about their customers' interest-weightings on this dimension.

This principle of *reversed integrativity* applied to all six hotel dimensions and could have fatal consequences for group members' preferences for the six hotels. The six hotels were designed in a way that they always served the highly-weighted interests of one of the two agencies better. Therefore, a wrong conclusion about the interest-weighting on a hotel dimension lead to the preference for a hotel that truly served the interests of the other group better. As explained above, only one out of three members of each negotiation group held information that reflected the true interest-weighting of an agency on a hotel dimension. Therefore, when information elaboration was low, the probability of ending up with the wrong conclusion about the interest-weightings on the hotel dimensions was much higher than ending up with the correct conclusion. As a consequence, groups with a low within-group information elaboration ran the risk of preferring and claiming hotels that served the highly-weighted interests of the other group instead of their own.

Again, this effect can be best explained with the help of an example: Hotel Eden (cf. Table 4) performed high on general facilities. If the information of all group members of BST and RST was elaborated and integrated, both groups could come to the conclusion that Eden was more valuable for RST than for BST, because the interest-weighting on the dimension general facilities was overall higher for RST than for BST. However, if information elaboration was low, Eden appeared to be valuable for the group members of

BST with the customers' surveys from the offices in Middle and South Germany. At the same time, Eden appeared to be of low value from the perspective of the group members with the customers' surveys from the RST offices in Middle and South Germany (cf. Table 3). Therefore, the two groups ran the risk of assigning Eden to BST rather than RST, although it overall served a highly-weighted interest of RST, not of BST.

This principle applied to all six hotels in the portfolio: Every hotel that was most valuable for one agency appeared to hold a lower value for two group members of this agency. At the same time, it seemed to be more valuable for two group members of the other agency. Therefore, groups who did not sufficiently elaborate group members' diverse interest-weightings before or during the negotiation ran the risk of demanding hotels that primarily served the other travel agency's highly-weighted interests instead of their own agency's highly-weighted interests. At the same time, they were in danger of letting go of those hotels that served their agency's highly-weighted interests best. To sum up, the customer surveys and the six hotels were construed in a way to provoke a distribution contrary to the two agencies' overall highly-weighted interests if the group members did not exchange and integrate their differential information about the customers' interest-weightings.

6.1.4 Operationalization of the independent Variable: Comparison Mindsets

Comparison mindsets were manipulated with the help of two procedures which took place right before the group members met for the pre-negotiation preparation. In both procedures, each group member had to answer a number of questions individually in front of a computer. Subsequently, their own answers and ostensibly the answers of the other two members of their group were presented to them on the computer screen. However, only group members' own answers were real. The answers of the other two group members that were presented to them were bogus and served the manipulation of comparison mindsets. These bogus answers were designed in a way that the number of similarities and the number of

differences between the answers of all three group members was equal. In this way, it was made sure that different results for the two comparison mindset conditions could not be explained by different levels of diversity within the groups but instead by group members' differential sensitivity towards either similarities or differences. In both procedures, this differential sensitivity was achieved by asking participants to focus on either the similarities (i.e., similarity mindset condition) or the differences (i.e., difference mindset condition) between group members' answers.

The first procedure was the same one as used in Study 2. In the similarity mindset condition, participants had to write down three similarities between the answers of the three group members (i.e., their own answers and the bogus answers of the other two group members). In the difference mindset condition, they had to write down three differences.

In the second procedure, all participants had to rank six group characteristics (e.g., personality style, education, etc.) according to how much they thought these group characteristics would influence the quality of a group's work ranging from 1 (*highest ranking*) to 6 (*lowest ranking*). In the following step, their own rankings and allegedly the rankings of two other group members were presented to them in a table. As can be seen in Table 5, three group characteristics were ranked similarly (cf. personality style, approach to work and period of life) while the remaining three characteristics (cf. education, values and competencies) were ranked differently by the participant, and ostensibly, the other two group members. In both mindset conditions, participants were asked to form a joint ranking for the whole group based on the individual rankings of all three group members: Participants in the similarity mindset condition were asked to rank the importance of the six group characteristics on the basis of the similarities between group members' individual rankings. Alternatively, group members in the difference mindset condition were asked to rank the six group characteristics on the basis of the differences between group members' individual rankings.

	Group Members		
	Member 1	Member 2	Member 3
Ranking of group characteristics according to their perceived influence on group work			
Personality style	6	6	5
Education	5	2	1
Approach to work	4	4	4
Values	3	1	6
Period of life	2	3	2
Competencies	1	5	3

Table 5. Group members' ranking of six group characteristics according to their perceived influence on group work (Study 3). The table with two bogus rankings for two other group members (Member 2, Member 3) was presented to each group member together with their own true ranking (Member 1).

Please keep in mind that in both procedures for the manipulation of comparison mindsets, all six participants in the same experimental session underwent the manipulation of the same comparison mindset (i.e., either similarity or difference mindset). Therefore, in both negotiation groups BST and RST, the same comparison mindset was activated.

6.1.5 Operationalization of the dependent Variables

The dependent variables in Study 3 could be assessed on two different levels or, in other words, hierarchies (see Figure 5). The first and lowest level lies within the negotiation group (see Level 1: Negotiation groups). For assessing the processes and outcomes of the pre-negotiation preparation within the groups, the dependent variables (i.e., information elaboration, first offer quality) were measured for each single negotiation group. Therefore, the measurement unit for the group preparation before the negotiation was the single negotiation group.

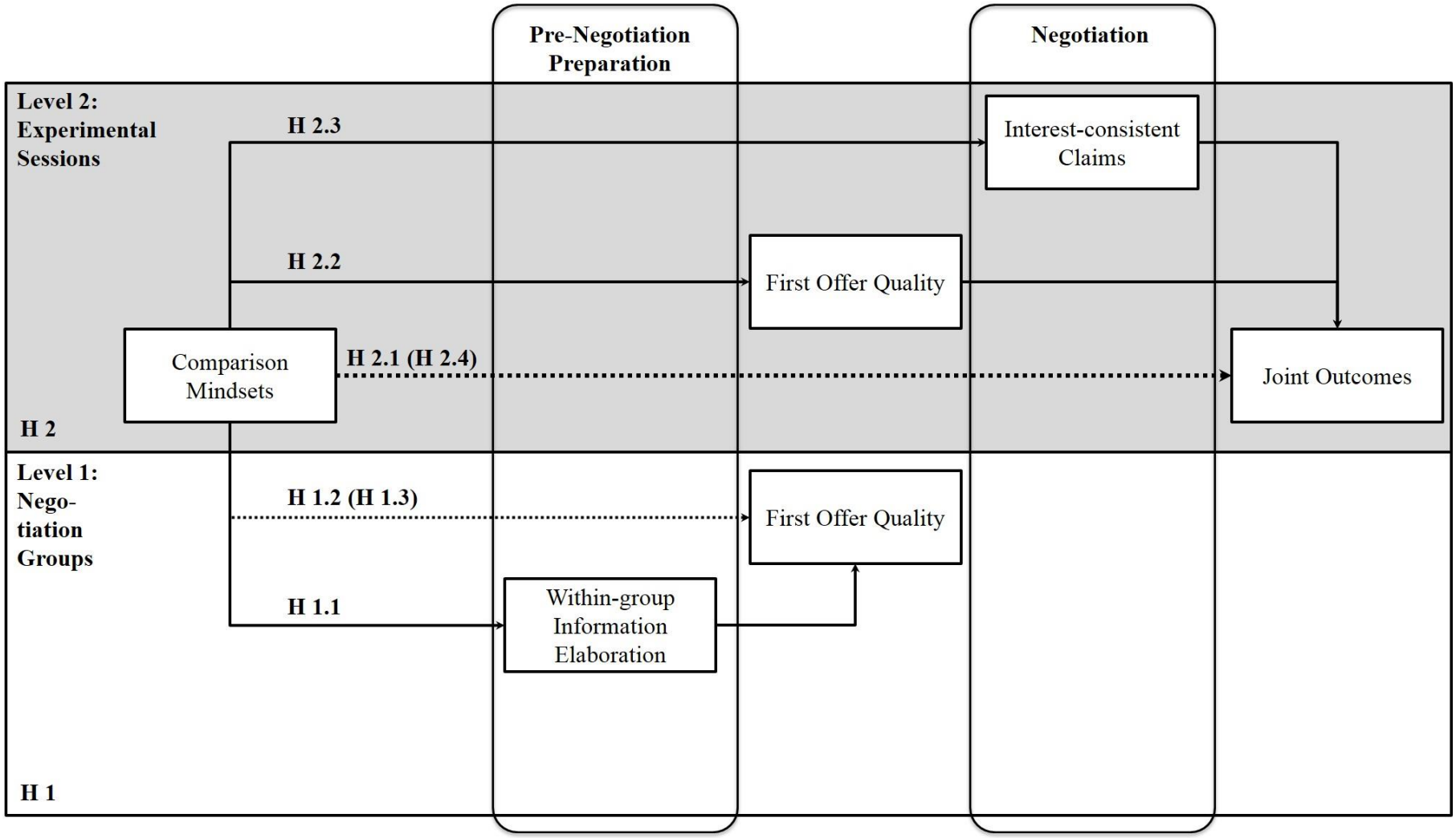

Figure 5. Summary of the hypotheses in Study 3. Hypotheses H 1.1 to H 1.3 represent the sub-hypotheses of Hypothesis 1. Hypotheses H 2.1 to H 2.4 represent the sub-hypotheses of Hypothesis 2. It is important to note that Hypothesis 1 is assessed at the level of the single negotiation groups whereas Hypothesis 2 is assessed at the level of the experimental sessions, consisting of the two groups negotiating with each other.

For assessing the processes and outcomes of the group-on-group negotiation, the dependent variables (i.e., first offer quality, interest-consistent claims, and joint outcomes) were measured on the level of the experimental session. In every experimental session, two groups entered a negotiation together to reach an agreement (see Level 2, Figure 5). To obtain measures on the level of the experimental session, the measures of the two groups within each experimental session were summed up. This approach of summation is based on the additive composition model (Chan, 1998). It assumes that the sum or average of the lower level units (e.g., the first offer quality of the two groups) is meaningful, not the variance amongst them. In correspondence with this model, Meyer and Schermuly (2012) argue that the individual contributions of the lower level units (e.g., the single groups) increase the likelihood of the upper level unit (e.g., the dyad of negotiation groups within an experimental session) to perform well. In a similar manner, Thompson (1991) could demonstrate that "the efforts of one party are sufficient to reach integrative agreements" (p. 170; see also Thompson et al., 1996) for the negotiation dyad in one experimental session.

Based on these findings and theoretical arguments, it can be assumed that single groups' first offer quality or interest-consistent claims increase the likelihood of high joint outcomes for both groups in one experimental session. Hence, for assessing the processes and outcomes of the group-on-group negotiation, all measures at Level 1 (e.g., the first offer quality of a single group) are treated as contributions to the Level 2 measurements (e.g., first offer quality of the negotiation dyad in one experimental session). This leads to the summation of the Level 1 variables for each experimental session.

6.1.5.1 Dependent Variables assessing the Processes and Outcomes of the within-group pre-negotiation Preparation

Within-group information elaboration. To assess the within-group information elaboration before the negotiation, the videotapes were coded. The coding scheme was

adapted from Homan and colleagues (2007a, 2007b). A score of 1 was given, when group members did not mention the information about the customers' interest-weightings at all. Instead, they talked about other topics such as first offers or strategies. A score of 2 was given, when at least one piece of information about the customers' interest-weightings was mentioned. However, the group members did not notice any differences in their interest-weightings. A score of 3 was assigned, when group members noticed their diverse interest-weightings, but did not try to integrate them. Alternatively, they arrived at an integration based on irrelevant information not even contained in the booklets (e.g., "When I go on vacation I find service most important, so we should get a hotel with great service"). A score of 4 was given when group members tried to arrive at a common understanding based on their preferences for the hotels instead of their information about the customers' interest-weightings. A score of 4 was also assigned, when only a subset of the group's information about the customers' interest-weightings was taken into consideration. In this case, the survey results of one group member were not exchanged and hence could not be taken into account. A score of 5 was given when all group members exchanged their information about the customers' interest-weightings and made attempts to integrate them. However, they arrived at mediocre results. For instance, groups scored a 5 when they started to integrate the information for some interest-weightings, but not for a sufficient number of interests to arrive at a meaningful ranking of their importance. Alternatively, group members exchanged the information of all three group members, but decided to focus on the information of only two instead of all three group members. A score of 6 was given, when group members decided to focus on those three hotels that served the most highly-weighted interests of the customers in North, Middle, and South Germany best (cf. Table 3 and Table 4). For group members of RST, for instance, that would be hotel Eden for the customers in North Germany, hotel Albatros for the customers in Mid Germany and hotel Dream for the customers in South Germany. A score of 6 was also assigned, when groups identified the three most highly-

weighted interests or the three interests with the lowest weightings by exchanging and integrating all available information about the customers' interest-weightings. However, in contrast to groups who scored a 7 on the information elaboration scale, they did not explicitly mention the importance of the other three dimensions. Finally, a score of 7 was given, when all customers' interest-weightings were correctly integrated. This integration of the customers' interest-weightings from all over Germany could be completed by summing up, averaging or estimating the number of hotel characteristics customers had reported in the surveys from North, Middle and South Germany.

To conclude, the higher the within-group information elaboration score, the more did group members exchange and integrate their different interest-weightings. 19 % of the videotapes were double coded by two raters with an average ICC of .98. Due to this excellent inter-rater reliability (Cicchetti & Sparrow, 1981), raters coded the remaining videos individually (cf. Homan et al., 2007a, 2007b).

Groups' first offer quality. As an outcome of the within-group pre-negotiation preparation, the first offer quality of every single negotiation group at the end of this phase was assessed. For this purpose, an adaptation of Trötschel and colleagues' (2011) measure for logrolling was used. It was counted how many hotels each group claimed in its first offers that performed high on the group's most important and hence most highly-weighted interests. Out of the six hotels to be distributed among the two groups, hotel Albatros, Dream and Eden served the highly-weighted interests of RST best (cf. Table 3; Table 4) while the other three hotels served the highly-weighted interests of BST best. Therefore, first offer quality of each group could vary between 0 (*none of the three interest-consistent hotels claimed*) and 3 (*all of the three interest-consistent hotels claimed*). The more hotels a group claimed that met its travel agency's highly-weighted interests, the higher was the first offer quality.

6.1.5.2 Dependent Variables for assessing the Processes and Outcomes of the group-on-group Negotiation

Negotiation dyads' first offer quality. As explained earlier, the processes and outcomes during the negotiation are assessed on the level of the experimental session. This means, the measures of the two groups forming a negotiation dyad in every experimental session have to be aggregated. A negotiation dyad consists of one negotiation group representing RST and one negotiation group representing BST. To obtain a measure for the first offer quality of a negotiation dyad in each experimental session, the first offer quality of the two single groups at the end of the pre-negotiation preparation were summed up. Hence, negotiation dyads' first offer quality merely consists of the two groups' first offer quality (cf. previous Section 6.1.5.1) brought to the level of the experimental session.

As each group's first offer quality could vary between 0 (*none of the three interest-consistent hotels claimed*) and 3 (*all of the three interest-consistent hotels claimed;* cf. Section 6.1.5.1), the negotiation dyad's first offer quality could vary between 0 (*none of the two groups claimed an interest-consistent hotel*) and 6 (*both groups claimed all of their interest-consistent hotels*). Consequently, the more hotels the two groups claimed in their first offers that scored high on their travel agencies' highly weighted interests, the higher was the negotiation dyad's first offer quality.

Negotiation Dyads' interest-consistent claims. Similar to first offer quality, the measurement of logrolling by Trötschel and colleagues (2011) was adapted to assess negotiation dyads' change of interest-consistent claims over the course of the negotiation. More specifically, it was assessed how much the interest-consistent claims of the two groups in an experimental session improved or deteriorated over the course of the negotiation after they had made their first offers. For this purpose, it was assessed from one negotiation round to the next, how many more or less interest-consistent hotels the two groups claimed.

Subsequently, the three changes in interest consistent claims (i.e., the change from first offers to Round 1, the change from Round 1 to Round 2, the change from Round 2 to Round 3) were summed up for the two negotiation groups in one experimental session. The resulting interest-consistent claims in a negotiation dyad could vary between -6 and +6. Positive values resemble an increase in the number of interest-consistent claims of a negotiation dyad over the course of the negotiation whereas negative values resemble a decrease in the number of interest-consistent claims. For instance, a negotiation dyad in an experimental session obtained a value of -6 when each of the two groups within a negotiation dyad started out with claiming its three interest-consistent hotels in its first offers but continued with claiming only two interest-consistent hotels each in the first negotiation round (i.e., -2 interest-consistent claims in the dyad from first offers to Round 1), one interest-consistent hotel each in the second round (i.e., -2 interest-consistent claims in the dyad from Round 1 to Round 2), and no interest-consistent hotel each in the third negotiation round (i.e., -2 interest-consistent claims in the dyad from Round 2 to Round 3). Correspondingly, negotiation dyads obtained a value of 6 when both groups within a dyad changed their claims from demanding no interest-consistent hotel at all in their first offers to claiming one interest-consistent hotel each in the first negotiation round (i.e., +2 interest-consistent claims in the dyad from first offers to Round 1), two interest-consistent hotels each in the second round (i.e., +2 interest-consistent claims in the dyad from Round 1 to Round 2), and finally all three interest-consistent hotels each in the third negotiation round (i.e., +2 interest-consistent claims in the dyad from Round 2 to Round 3). Consequently, a score of zero for the interest-consistent claims within a negotiation dyad means that, compared to their first offers, the two groups in one experimental session did not improve or deteriorate in their interest-consistent claims over the course of the negotiation.

Joint outcomes. Joint outcomes were calculated by putting the negotiation dyads' actual joint outcomes into proportion with their highest possible joint outcomes and multiplying this proportion with 100 to obtain the percentage (i.e., $[J_{actual} / J_{max}] * 100$; with J_{actual} = negotiation dyads' actual joint outcomes, and J_{max} = negotiation dyads' maximal joint outcomes). To obtain negotiation dyads' *actual joint outcomes*, each group's single outcome was calculated by summing up the point values of all hotels that the respective group had obtained (cf. 6.1.3.1; $V_I = \sum I_I * Q_{ID}$; with V_I = value of a hotel, I_I[5] = interest-weighting on hotel dimension, and Q_{ID} = hotel's performance on the respective hotel dimension). Then, the single outcomes of the two negotiation groups within each experimental session were summed up. To obtain negotiation dyads' *maximal joint outcomes*, those point values were summed up that the two groups would receive together, if each group got those hotels out of the negotiation that served its highly-weighted interests best (i.e., RST got Albatros, Dream and Eden; BST got Beauty, Charme and Fantasy; cf. Table 3 and Table 4). A joint outcome of 100 percent resulted, if the two groups in one experimental session attained the maximal joint outcome (i.e., $[J_{max} / J_{max}] * 100 = 100$). A joint outcome of 90 percent resulted, if the two groups in an experimental session distributed all hotels contrary to their interest-weightings and hence received the minimal joint outcome (i.e., $[J_{min} / J_{max}] * 100 = 90$; with J_{min} = negotiation dyads' lowest possible joint outcomes). Hence, joint outcomes could vary between 90 percent *(= the two groups distributed all hotels contrary to their interest-weightings*) to 100 percent (= *the two groups distributed all hotels according to their interest-weightings*). Please note that the minimal joint outcomes of 90 percent are quite high, because the absolute point values of the six hotels were rather high as well. Therefore, the relative gains due to an interest-consistent distribution of the hotels are quite low. However, due to the

[5] Please note that I_I resembles the customers' interest-weightings in all three German regions of a travel agency altogether instead of customers' interest-weightings in one special region (e.g., North Germany). Consequently, the basis for I_I are the integrated interest-weightings of the whole agency, resulting from the within-group elaboration of group members' information about the customers' interest-weightings from North, Middle, and South Germany.

extreme differences of the hotels' performances on the six hotel dimensions (cf. Table 4), differences in the value of the hotels for each group were highly noticeable.

6.1.6 Hypotheses

6.1.6.1 Hypothesis 1

The testing of Hypothesis 1 is divided into three sub-hypotheses (cf. Figure 6).

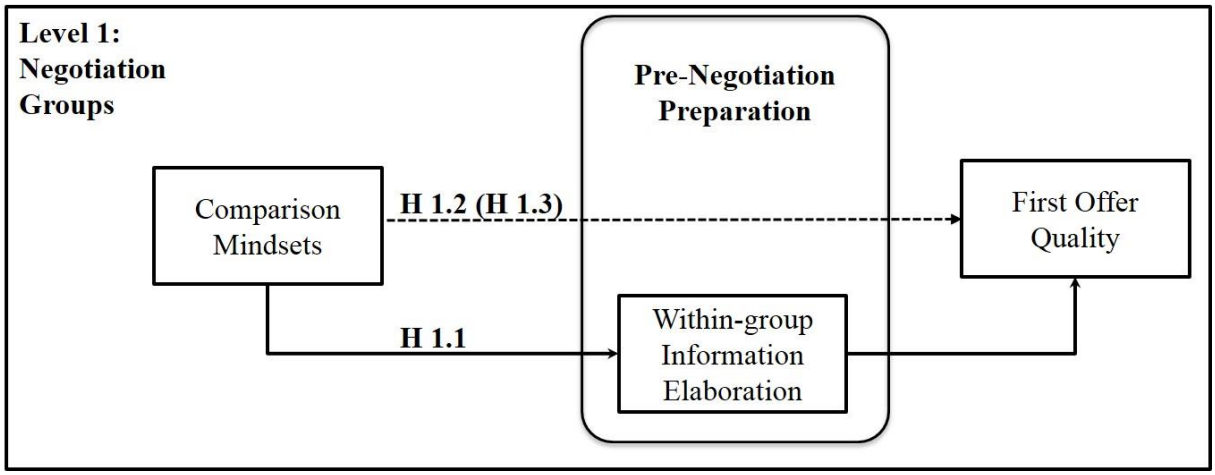

Figure 6. Hypothesis 1, with its sub-hypotheses H 1.1 to H 1.3 in Study 3. Level of analysis is the single group (Level 1: negotiation groups).

Hypothesis 1.1. Groups in the difference mindset condition reveal a higher within-group information elaboration during the groups' pre-negotiation preparation than groups in the similarity mindset condition.

Hypothesis 1.2. Groups in the difference mindset condition reveal a higher first offer quality than groups in the similarity mindset condition.

Hypothesis 1.3. Comparison mindsets affect groups' first offer quality via within-group information elaboration during the pre-negotiation preparation. More specifically, it is predicted that, compared to groups in the similarity mindset condition, groups in the difference mindset condition reveal a higher first offer quality due to their higher within-group information elaboration.

6.1.6.2 Hypothesis 2

Hypothesis 2 is assessed on the level of experimental sessions (cf. Level 2: experimental sessions, Figure 7). In every experimental session two groups negotiated with each other. Therefore, all dependent variables of the two groups in each experimental session were summed up. The testing of Hypothesis 2 is divided into four sub-hypotheses:

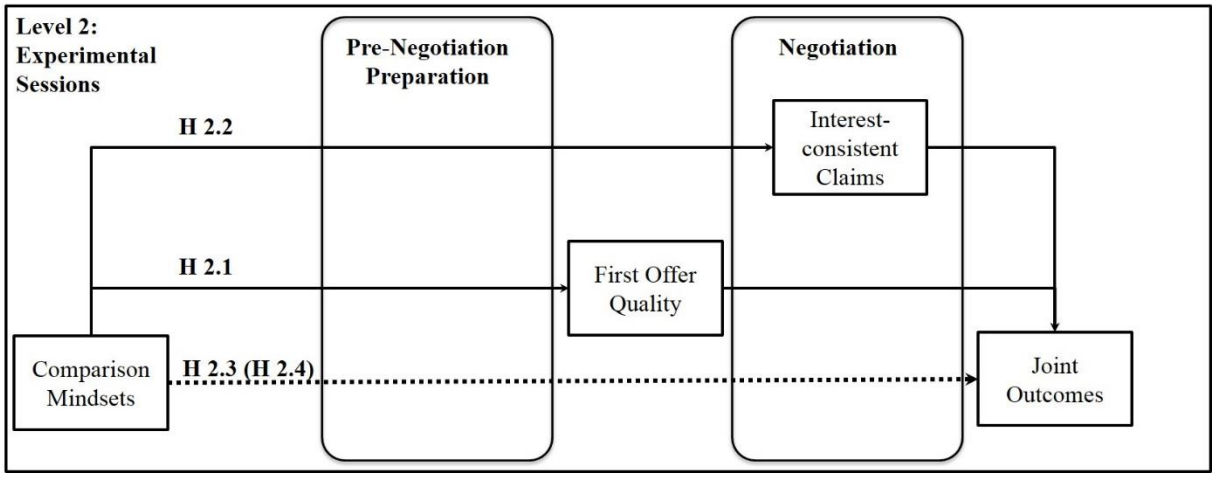

Figure 7. Hypothesis 2, with its sub-hypotheses H 2.1 to H 2.4 in Study 3. Level of analysis is the experimental session with its negotiation dyads (Level 2: experimental sessions).

Hypothesis 2.1. Negotiation dyads in the difference mindset condition reveal a higher first offer quality than negotiation dyads in the similarity mindset condition.

Hypothesis 2.2. Negotiation dyads in the difference mindset condition reveal higher interest-consistent claims than negotiation dyads in the similarity mindset condition.

Hypothesis 2.3. Negotiation dyads in the difference mindset condition obtain higher joint outcomes than negotiation dyads in the similarity mindset condition.

Hypothesis 2.4. It is explored, how the effect of comparison mindsets on negotiation dyads' joint outcomes is mediated: Via Mediation Path 1, Path 2 or Path 3 (cf. Figure 1). More specifically, it is explored if, compared to negotiation dyads in the similarity mindset condition, negotiation dyads in the difference mindset condition obtain higher joint outcomes

by either revealing a higher first offer quality, demanding more interest-consistent hotels over the course of the negotiation, or by doing both.

6.1.7 Analyses of Data

The conclusions of all preceding tests will be summarized in Section 6.2.1 or the *preceding analyses* part in the section of the respective hypothesis test. Specific results will be provided in the Appendix if they suggest the use of additional tests.

6.1.7.1 Software used for statistical Analyses

For the statistical analyses, the R software and SPSS 21 were used.

6.1.7.2 Detection of Outliers and influential Observations

The same procedures for identifying outliers were used as in Study 1 (c.f., Section 4.1.5.2) and Study 2.

6.1.7.3 Analyses for the Selection of statistical Methods for Hypothesis-testing

For selecting the appropriate statistical methods, the same procedures like in Study 1 (c.f., Section 4.1.5.3) and Study 2 were used.

6.1.7.4 Special statistical Methods for Analyzing within-group Information Elaboration

Multiple imputation. Due to random technical problems, the pre-negotiation preparation phase of four groups could not be recorded. Therefore, a multiple imputation procedure, implemented in SPSS 21, was used to generate five different data sets with five different estimates of the four missing values of within-group information elaboration. In this way, the uncertainty in the missing data is accounted for (Baraldi & Enders, 2010). By pooling the results of these five different estimations (Baraldi & Enders, 2010) the bias associated with singular imputations can be overcome. So far, not for every statistical

procedure in SPSS pooling has been implemented. Therefore, if necessary, the pooled results were calculated manually as suggested by Rubin (1987).

Multilevel analyses. For assessing Research Question 3, it is analyzed how the within-group information elaboration prior to the negotiation influences groups' first offer quality. Within-group information elaboration in the pre-negotiation preparation phase was assessed on the level of the single negotiation groups (see Figure 6; Level 1: negotiation groups). However, the single negotiation groups were nested in the experimental session, because always two groups took part in one experimental session. After these two groups prepared for the negotiation individually, they entered a negotiation where they negotiated with each other. This nested structure of the data requires thorough testing, whether the experimental session explains variance in within-group information elaboration beyond the experimental factor comparison mindsets. If experimental session indeed explains a significant amount of variance in within-group information elaboration, multilevel analyses (Bliese, 2013) will be warranted.

To assess the structure of the data, a univariate Analysis of Variance (ANOVA) with the experimental session as the only focal predictor of information elaboration was conducted, first. In this way, it was tested whether experimental session was a significant predictor of the dependent variable. If the effect of experimental session is significant, multilevel analyses are recommended to avoid a misinterpretation of the results of the hypothesis tests. Second, the intraclasscorrelation ICC(1) and the reliability of the group mean ICC(2) was calculated (Bliese, 2000, 2013) with the help of the multilevel package (Bliese, 2013) of the R Software. The intraclasscorrelation is a measure of "how much of the variance in the outcome can be explained by group membership" (Bliese, 2013, p. 52), in this case by experimental session. The ICC varies between 0 and 1 with larger values indicating a higher proportion of the total variance explained by the grouping factor experimental session. While a clear cut-off value

for the ICC(1) does not exist, the cut-off value for the reliability of the group mean ICC(2) is .70 (Bliese, 2013). Therefore, the reliability of the group mean can be helpful to make the decision whether or not multilevel analyses are warranted for within-group information elaboration.

In order to provide an even more solid groundwork for the decision whether or not to perform multilevel analyses, two types of regressions for the effect of the independent variable comparison mindsets on the dependent variable within-group information elaboration were calculated. The first model was a generalized least square (gls) model without the grouping factor experimental session. The second model was a multilevel model including the grouping factor experimental session in addition to the independent variable comparison mindsets. The fit indices of the gls model were then compared against the fit indices of the multilevel model (Bliese, 2013) using the Maximum Likelihood Estimator (Hox & Roberts, 2011) for both models. These calculations were performed with the nlme package (Pinheiro, Bates, DebRoy, Sakar, & R Development Core Team, 2013) of the R Software. A better fit of the multilevel model provides further evidence that multilevel analyses should be performed. To sum up, a significant ANOVA with experimental session as the only focal predictor, high ICC(1) and ICC(2) values as well as a better fit of the multilevel model than the gls model would lead to multilevel hypotheses testing.

6.1.7.5 Special statistical Methods for Analyzing First Offer Quality

Multilevel analyses. As explained in the previous section, for Research Question 3 it is analyzed how the within-group information elaboration prior to the negotiation influences groups' first offer quality. Therefore, like within-group information elaboration, first offer quality was assessed on the level of the single negotiation groups (cf. Level 1: negotiation groups, Figure 6). Because the single negotiation groups were nested in the experimental session, it was also tested whether the experimental session explains variance in first offer

quality beyond the experimental factor comparison mindsets. If experimental session indeed explains a significant amount of variance in groups' first offer quality, multilevel analyses (Bliese, 2013) will be warranted. The required analyses to arrive at this decision are identical to those described in the previous Section 6.1.7.4.

Count data. In addition to its potential multilevel structure, negotiation groups' first offer quality has another characteristic that needs to be taken into consideration. Like the measure for comparison mindsets in Study 1, first offer quality resembles count data. To assess first offer quality, the number of claimed hotels were counted that corresponded to the groups' interests. With the help of the statistical procedures to assess the distributional characteristics of the dependent variables (cf. Section 4.1.5.4), it was checked whether first offer quality held those characteristics of count data that required the use of special statistical regression models (Atkins & Gallopp, 2007; Cameron & Trivedi, 1998; de Beuf et al., 2012; Kleiber & Zeileis, 2008). In addition, tests for dispersion and zero-inflation (Kleiber & Zeileis, 2008) helped to determine which of these models were warranted.

6.2 Study 3: Results

6.2.1 Data Assessment and Treatment of Data

Reports of the experimenters revealed that in two experimental sessions at least one participant had serious motivational deficits or lacked an even basic understanding of the negotiation task. Since an at least average motivation and a basic understanding of the task was a prerequisite for the chance to perform well in the negotiation, the groups in these two sessions ended up with inferior negotiation results. Due to this disadvantage in comparison to other experimental sessions, these two sessions (i.e., twelve participants) were eliminated from further analyses. All pairs of negotiating groups in the remaining experimental sessions reached an agreement. Hence, no impasses had to be excluded, which is a common procedure in the negotiation literature (e.g., Galinsky & Mussweiler, 2001; Galinsky et al., 2002).

Moreover, neither tests for outliers nor influential observations indicated the necessity to exclude additional groups. Hence, subsequent analyses are conducted on 88 negotiation groups and a total sample size of $N = 264$.

For Hypothesis 1, assessing Research Question 3 (see Figure 6), the degrees of freedom are related to the number of single negotiation groups (i.e., 88 negotiation groups). For Hypothesis 2, assessing research Question 4 (see Figure 7), the degrees of freedom are related to the number of experimental sessions with the two negotiation groups in every session (i.e., 44 negotiation dyads).

Due to the specific nature of the Hypotheses, one-tailed testing was applied.

6.2.2 Testing Hypothesis 1: Comparison Mindsets on First Offer Quality via Information Elaboration

6.2.2.1 Hypothesis 1.1 Test: The Effect of Comparison Mindsets on within-group Information Elaboration

Preceding analyses. Multilevel analyses did not indicate a multilevel structure of the dependent variable within-group information elaboration (see Appendix 10.1.3.1). Moreover, no violation of the homogeneity of variance assumption was found. However, the analyses of the distributional characteristics of the raw data and the studentized residuals pointed to a violation of the normality assumption. Therefore, the results of the percentile bootstrap method for comparing trimmed means with 20 percent trimming and a bootstrap sample of $N = 2000$ will be reported together with the robust analog of Cohen's d (Wilcox, 2012).

Results. The pooled results of the bootstrap method for comparing trimmed means indicate that there were no differences between the within-group information elaboration in the difference mindset condition ($M = 4.42$, $SD = 2.29$) and the similarity mindset condition ($M = 4.54$, $SD = 2.42$), estimated difference = .31, $p > .10$, 95% CI [-0.70, 1.15].

Consequently, the findings do not provide evidence that comparison mindsets influence the within-group information elaboration during the pre-negotiation preparation.

6.2.2.2 Hypothesis 1.2 Test: The Effect of Comparison Mindsets on Negotiation Groups' First Offer Quality

Preceding analyses. Analyses to assess the multilevel structure of the data revealed that multilevel analyses were not warranted (Appendix 10.1.3.2). While the raw data was neither significantly skewed nor heteroskedastic between the two experimental conditions, the Shapiro-Francia test indicated that the studentized residuals were not normally distributed. As the data was significantly under-dispersed but had no zero inflation, a tilted Poisson regression model was calculated to meet the requirements of under-dispersed count data.

Results. According to the tilted Poisson regression model, groups in the difference mindset condition did not claim more hotels in their first offers that fit their interest-weightings (M = 2.25, SD = 0.81) than did groups in the similarity mindset condition (M = 2.20, SD = 0.79), estimate = .02, z = .27, p = .39[6]. These results do not provide evidence that comparison mindsets influence groups' first offer quality prior to the negotiation.

6.2.2.3 Hypothesis 1.3 Test: The Effect of Comparison Mindsets on First Offer Quality via Information Elaboration

Hypothesis 1.3 (see H 1.3. in Figure 6) stated that comparison mindsets influence groups' first offer quality via within-group information elaboration during the pre-negotiation preparation. Yet, testing Hypothesis 1.1 and Hypothesis 1.2 revealed that comparison mindsets neither have an effect on groups' first offer quality nor the proposed mediator within-group information elaboration. While the direct effect of the independent variable on the dependent variable is not a necessary precondition for a mediation, the independent

[6] The generalized Poisson regression model neither revealed significant results, estimate = .02, z = .25, p = .40.

variable needs to have a significant effect on the mediator (Shrout & Bolger, 2002; Zhao, Lynch, & Chen, 2010). Since this effect was not found when testing Hypothesis 1.2, it can be concluded that there is no significant indirect effect of comparison mindsets on groups' first offer quality via within-group information elaboration.

Reviewing the procedure of Study 3, the task structure of the pre-negotiation preparation is likely to be responsible for the missing effect of comparison mindsets on information elaboration and first offer quality. The task of generating a first offer during the pre-negotiation preparation led group members to focus on the negotiation issues. Hence, it was more important for groups to come up with a first offer than taking a step back and finding a resolution for their diverse interest-weightings first. This explanation will be discussed in more detail in the discussion section of Study 3.

6.2.3 Testing Hypothesis 2: Comparison Mindsets on joint Outcomes via First Offer Quality or interest-consistent Claims

In Hypothesis 2, the influence of comparison mindsets on joint outcomes in integrative negotiations was in the focus of attention. Compared to a similarity mindset, a difference mindset was expected to increase joint outcomes on one out of three potential mediation paths (cf. Figure 1). With the help of four sub-hypotheses (see Figure 7) it is tested on which of the three mediation paths comparison mindsets affect joint outcomes.

6.2.3.1 Hypothesis 2.1 Test: The Effect of Comparison Mindsets on Dyads' First Offer Quality

Preceding analyses. The raw data of negotiation dyads' first offer quality did not deviate from normality, however histogram, qq plots and the Shapiro-Francia test indicated that the studentized residuals did (Appendix 10.1.3.3). Yet, the variances within the two experimental conditions were homogeneous. The dispersion test revealed a significant under-

dispersion but no zero inflation was found. Therefore, the tilted Poisson regression model for count data will be reported.

Results. In correspondence with the results of Hypothesis 1.2, the tilted Poisson regression revealed that negotiation dyads with a difference mindset (M = 4.50, SD = 1.30) and a similarity mindset (M = 4.41, SD = 1.14) did not differ in the number of claimed hotels that fit their group's interest-weightings, estimate = .02, z = .25, p = .40[7]. Consequently, comparison mindsets did not influence dyads' first offer quality and Hypothesis 2.1 was not supported.

6.2.3.2 Hypothesis 2.2 Test: The Effect of Comparison Mindsets on Dyads' Interest-consistent Claims

Preceding analyses. Tests of both raw data and residuals confirmed that all assumptions for an independent samples t-test were fulfilled (see Appendix 10.1.3.4).

Results. After their first offers, negotiation dyads with a difference mindset increased their interest-consistent claims across the subsequent three negotiation rounds (M = .23, SD = 1.07). In contrast, dyads with a similarity mindset slightly decreased their interest-consistent claims (M = -.05, SD = 1.06). This difference between the interest-consistent claims of negotiation dyads with a difference mindset and a similarity mindset was significant, $t(42) = 2.27$, p = .014, (one-tailed), η^2 = .11, d = .68. These results provide evidence that, compared to a similarity mindset, a difference mindset increases negotiation dyads' interest-consistent claims over the course of the negotiation, which indicates a higher within-group information elaboration during the negotiation under a difference mindset.

[7] The generalized Poisson regression model neither revealed significant results, estimate = .03, z = .42, p = .34.

6.2.3.3 Hypothesis 2.3 Test: The Effect of Comparison Mindsets on Dyads' Joint Outcomes

Preceding analyses. While the distributional characteristics of the raw data indicated slight deviations from normality, the Shapiro-Francia test to assess the distribution of the studentized residuals was not significant (see Appendix 10.1.3.5). Therefore, no robust method accounting for non-normality had to be performed. Yet, the Fligner-Killeen test indicated heterogeneous variances. Therefore, the Welch two samples t-test with adjusted degrees of freedom will be applied.

Results. A Welch two samples t-test indicated that dyads of negotiation groups in the difference mindset condition achieved higher joint outcomes (M = 97.90, SD = 1.65) than did dyads in the similarity mindset condition (M = 96.49, SD = 2.84), $t(33.74) = 2.01$, $p = .026$ (one-tailed), $\eta^2 = .09$, $d = .61$. This difference of 1.4 percent between dyads in a difference mindset and a similarity mindset corresponds to the correct allocation of almost one more hotel: Dyads in a difference mindset allocated almost five hotels correctly on average (M = 4.67) while dyads in a similarity mindset allocated nearly four hotels correctly (M = 3.94). These results hence support the hypothesis that, compared to a similarity mindset, a difference mindset leads to higher joint outcomes.

6.2.3.4 Hypothesis 2.4 Test: The Effect of Comparison Mindsets on Dyads' Joint Outcomes via interest-consistent Claims

Since the effect of comparison mindsets on first offer quality turned out as not significant, Paths 1 and 3 (cf. Figure 1) with first offer quality as a potential mediator do not qualify as ways in which comparison mindsets could influence joint outcomes in group-on-group negotiations (Zhao et al., 2010). The remaining path on which comparison mindsets could influence joint outcomes is via interest-consistent claims over the course of the negotiation (see Path 2, Figure 1).

Preceding analyses. Tests revealed that the distribution of the studentized residuals of the complete model with comparison mindsets and interest-consistent claims as predictors for joint outcomes was normal (see Appendix 10.1.3.6). Moreover, the relationship between the potential mediator interest-consistent claims and joint outcomes was linear and the multicollinearity between the predictors was low. Consequently, characteristics of the data impairing the assumptions of a regression based mediation analysis can be ruled out. Therefore, the bootstrap approach for testing the indirect effects (Hayes, 2013; Preacher & Hayes, 2004, 2008) could be applied by using the PROCESS Macro for SPSS, Version v2.04 (Hayes, 2012).

Results. Comparison mindsets were effect coded with similarity mindset = -1 and difference mindset = 1 and added to the analyses as the independent variable. Interest-consistent claims were submitted to the analyses as the proposed mediator while joint outcomes were added as the dependent variable. The bootstrap results with a bootstrap sample of $N = 3000$ indicated that the indirect effect through interest-consistent claims was significantly different from zero, with a completely standardized indirect effect of .16 and a 95 percent bias-corrected confidence interval (see Efron, 1987) of .04 to .33. The mediation effect size equaled $r^2 = .07$. The confidence interval for the total effect (i.e., direct plus indirect effect) did not include zero, 90% CI [0.12, 1.29]. Remarkably, the confidence interval for the direct effect of comparison mindsets on joint outcomes, where the indirect effect via interest-consistent claims is controlled for, does include zero, 90% CI [-0.24, .67]. Please note that a 90 percent confidence interval for the total and direct effect was used, since one-tailed testing was applied due to the specific Hypotheses. These findings suggest that the effect of comparison mindsets on the joint outcomes of the two groups in one experimental session is fully mediated by the development of the interest-consistent claims between the groups over the course of the negotiation. Figure 8 illustrates the results according to the causal steps

approach (Baron & Kenny, 1986). As can be seen with the help of the standardized regression weights, negotiation dyads with a difference mindset increase their interest-consistent claims over the course of the negotiation and therefore increase their joint outcomes compared to negotiation dyads with a similarity mindset.

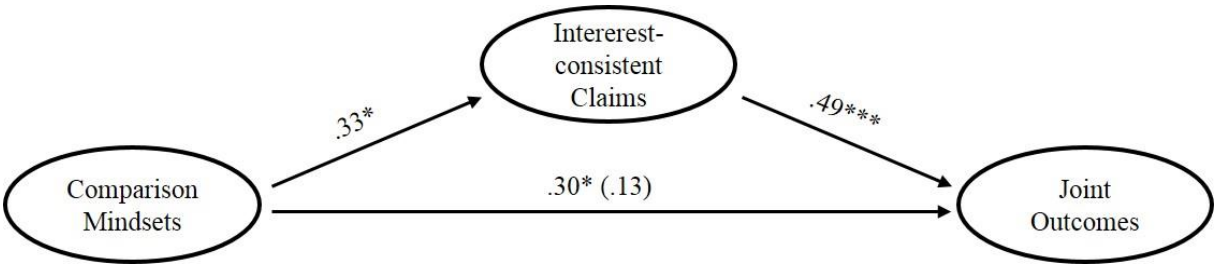

Figure 8. Mediated relations between comparison mindsets, interest-consistent claims and joint outcomes in Study 3. Numbers are standardized regression weights. Comparison mindsets are effect coded, with -1 = *similarity mindset* and +1 = *difference mindset*. * $p < .05$. ** $p < .01$. *** $p < .001$ (one-tailed).

6.3 Study 3: Discussion

Research Question 3 asked how comparison mindsets affect the within-group elaboration of group members' diverse interest-weightings and their outcomes prior to the negotiation. In contrast to Proposition 3, neither an effect of comparison mindsets on the within-group information elaboration during the pre-negotiation preparation nor on groups' first offer quality was found.

Research Question 4 asked how comparison mindsets influence joint outcomes in integrative negotiations, where interest-weightings within the negotiation groups are diverse. Proposition 4 suggested three potential mediation paths in which a difference mindset could increase negotiation groups' joint outcomes compared to a similarity mindset: Via within-group information elaboration before the negotiation (Path 1), via within-group information elaboration during the negotiation (Path 2) or via a combination of these two (Path 3). Study 3 demonstrated that comparison mindsets influence the joint outcomes of the two groups within a negotiation dyad via their interest-consistent claims over the course of the negotiation (cf.

Path 2, Figure 1). Since the type of comparison mindset did not affect groups' first offer quality, this variable did not qualify as a potential mediator. Instead, negotiation dyads with a difference mindset achieved higher joint outcomes, because they were better able to increase their interest-consistent claims over the course of the negotiation than dyads with a similarity mindset. Increasing ones' interest-consistent claims was only possible for negotiation groups if they identified and combined the diverse interest-weightings within the group. As the within-group information elaboration prior to the negotiation did not differ between groups with a difference mindset and groups with a similarity mindset, only the within-group information elaboration during the negotiation could be responsible for this effect. Therefore, it can be concluded that, compared to a similarity mindset, a difference mindset increases the within-group elaboration of diverse interest-weightings during the negotiation. In this way, a difference mindset enables negotiation groups to compensate for the lack of within-group information elaboration before the negotiation. Therefore, within-group information elaboration before a group-on-group negotiation is not a necessary pre-condition for high joint outcomes.

The missing support for Proposition 3 and the mediation of the effect of comparison mindsets on joint outcomes solely via interest-consistent claims raise the question why comparison mindsets only seem to influence groups' information elaboration during but not before the negotiation. Reviewing the procedure of Study 3, one characteristic of the negotiation paradigm can be identified that may be responsible for the missing effect of comparison mindsets on information elaboration before the negotiation and first offer quality. Coming up with a first offer for the group-on-group negotiation was the groups' most important task for the pre-negotiation preparation. First offers are composed of negotiation issues. Therefore, the task structure led group members to focus on the negotiation issues and hence to neglect the underlying interest-weightings. In line with this notion, 73 percent of all

groups reached an elaboration score between 1 and 4 or an elaboration score of 6. Looking at the scale description (cf. Section 6.1.5.1), these scores indicate that group members either did not notice any differences in their interest-weightings or focused on finding a common ground with regard to the hotels to be claimed in their first offers. Consequently, the task to come up with a first offer limited the possible variance between the pre-negotiation information elaboration of groups with a similarity mindset and groups with a difference mindset. Since the elaboration of group members diverse interest-weightings is an essential precondition for differentiating between hotels of high and low importance for the agencies, a low elaboration of interest-weightings in both experimental conditions lead to a low difference between the first offer quality within both conditions.

This finding has two major implications: *First*, it suggests that the way a pre-negotiation preparation is designed affects the information elaboration within groups during this phase. If the group's task or the available information distracts group members from their diverse interest-weightings, the probability of an effective within-group elaboration of these diverse interest-weightings during the pre-negotiation preparation is low. Following this logic, an effect of comparison mindsets on within-group information elaboration and first offer quality prior to the negotiation might have been found in Study 3, if the task to come up with a first offer had not distracted group members from their diverse interests. *Second*, this finding demonstrates that the within-group information elaboration before a group-on-group negotiation is not a necessary pre-condition for high joint outcomes in the group-on-group negotiation. Instead, the within-group elaboration of group members' diverse interest-weightings, indicated by an increase of interest-consistent claims over the course of the negotiation, can compensate for a lack of within-group information elaboration before a group-on-group negotiation. Consequently, the findings of Study 3 also allow for a partial answer to Research Question 5 how comparison mindsets affect joint outcomes in group-on-

group versus representative negotiations. As Proposition 5 stated, a difference mindset can lead to higher joint outcomes via higher levels of within-group information elaboration during the group-on-group negotiation. A higher within-group information elaboration prior to the group-on-group negotiation is not required.

7 Study 4: How Comparison Mindsets influence Representative Negotiations

Study 4 investigated the effects of comparison mindsets on within-group information elaboration and outcomes before and during representative negotiations. Therefore, Research Question 3 and 4 were reassessed in the context of representative negotiations. Thereby the answer to Research Question 5 about the effects of comparison mindsets in group-on-group versus representative negotiations was completed.

The chance of the individual group representatives to compensate for a low information elaboration within their group prior to the negotiation is rather limited. Since their fellow group members are not present during the representative negotiation, representatives usually do not have the possibility to seek and elaborate information about group members' diverse interest-weightings during the negotiation. Therefore, representatives lack the opportunity to engage in within-group information elaboration with their fellow group members during the negotiation and can hence not improve their knowledge of their group's overall interest-weightings. As a result of this, representatives also lack the chance to increase their interest-consistent claims over the course of the negotiation. Instead, only the within-group information elaboration prior to the negotiation has the chance to translate into the negotiation between the two representatives and affect its outcome. If a negotiation group did not elaborate the diverse interest-weightings of its members prior to the representative negotiation, an individual group representative can only base his or her first offer on his or her individual interest-weightings. If the representative's individual interest-weightings do not correspond to the group's overall interest-weightings, the representative's first offer does not include hotels that meet the group's highly-weighted interests. Therefore, from the perspective of the whole negotiation group, the representative's first offer is of a rather low quality. In contrast, if a negotiation group did elaborate the diverse interest-weightings of its

members prior to the representative negotiation, then the individual group representative has a better chance to identify negotiation issues that meet his or her group's highly-weighted interests. Hence, the representative should be able to include these issues in his or her first offer, thereby attaining a high first offer quality. Since first offer quality sets the anchor for the quality of representatives' claims over the course of the negotiation, first offer quality is crucial for integrative negotiation outcomes (Galinsky & Mussweiler, 2001; Moran & Ritov, 2002; Ritov, 1996).

With regard to Research Question 3 about the way comparison mindsets influence within-group information elaboration and outcomes prior to the negotiation, Proposition 3 predicted that a difference mindset, compared to a similarity mindset, increases within-group information elaboration before the negotiation and in this way increases representatives' first offer quality.

Due to the limited possibility of within-group information elaboration during representative negotiations, very specific answers to Research Question 4 about the way comparison mindsets influence joint outcomes are proposed in the context of representative negotiations. As Proposition 5 states, only the first of the three potential mediation paths applies in which comparison mindsets could affect joint outcomes (see P 5: Representatives, Figure 1). This mediation path resembles the influence of comparison mindsets on joint outcomes via first offer quality and hence via within-group information elaboration before the negotiation. Specifically, it is explored if a difference mindset leads to higher joint outcomes in representative negotiations than a similarity mindset by increasing within-group information elaboration before the negotiation, indicated by representatives' first offer quality. Since group representatives do not have the chance to elaborate group members' diverse interests during the negotiation, Path 2 and Path 3 (cf. Figure 1) should not be significant.

As discussed in Study 3 (cf. Section 6.3), the characteristics of the pre-negotiation preparation within groups might have led group members to focus on the negotiation issues and distracted them from group members' diverse information about the customers' and hence their agency's interest-weightings. Due to the crucial importance of within-group information elaboration before the representative negotiation, the pre-negotiation preparation was adapted in order to avoid a strong focus on the negotiation issues and give group members the chance to exchange and integrate their diverse information about the group's underlying interest-weightings. This time, groups did not have to come up with a first offer at the end of the pre-negotiation preparation. Instead, groups were given rather general instructions and information concerning the specific characteristics of the hotels was withheld until the pre-negotiation preparation was over. Hence, group members only had the chance to discuss information about their customers' interest-weightings, their strategies and their first offers on a very general level (e.g., start with an aggressive versus moderate first offer). After the pre-negotiation phase was over, group members individually received the specific information about the hotels and were asked individually to come up with a first offer for the subsequent representative negotiation.

7.1 Study 4: Method

7.1.1 Participants and Design

150 students from the University of Trier with different academic majors (e.g., economics, educational sciences, psychology) participated in this study and were recruited via circular e-mail and leaflets (64.7 % female, age 18 – 36, M = 22.83, SD = 2.94). Participants received 12 - 14 Euros or course credit as remuneration. Comparison mindsets were manipulated as the experimental between-subjects factor.

7.1.2 Procedure

The major part of the setting and the procedure was identical to Study 3 (cf. Section 6.1.2). For each experimental session, six participants were recruited. Upon arrival, three participants were randomly assigned to travel agency RST while the remaining three participants were assigned to travel agency BST. The Groups were told that the task would be to negotiate the distribution of nine hotels on an island. Subsequently, the two groups were taken to separate rooms. Study 4 was comprised of three phases. Figure 9 depicts participants' configuration within these phases in each experimental session. In the *first phase*, the single group members underwent the mindset manipulation individually (cf. individual group members, Figure 9).

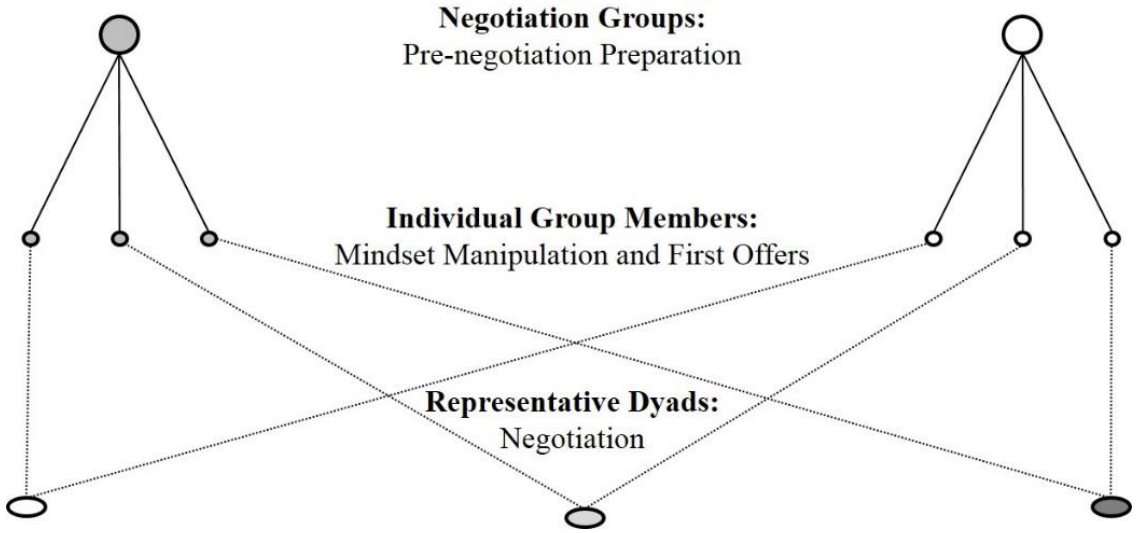

Figure 9. Configuration of the participants in the experimental procedure. After the individual manipulation of comparison mindsets, a group of three participants prepared the negotiation for each agency. Subsequently, individual group members created first offers. Afterwards, each group member represented their group in a dyadic negotiation with a member of the other group.

In the *second phase*, the three members of one negotiation group met for a ten minutes pre-negotiation preparation within their group (cf. negotiation groups). In this pre-negotiation preparation, they had the chance to elaborate the diverse information, group members had been given about the customers' interest-weightings. Compared to Study 3, two important changes in this second phase of Study 4 were made. The *first important change* is that the

members of the two negotiation groups were only provided with specific information about the hotels *after* the pre-negotiation preparation was over and the three members of each group had returned to their individual cubicles. As a result of that, group members had no opportunity to discuss the specific attributes of the hotels during their pre-negotiation preparation. Instead, the only information available to them were the customers' interest-weightings. The *second important change* is that group members had to formulate their first offers for their upcoming representative negotiation *individually* right after the pre-negotiation preparation within the group was over.

In the *third phase*, each group member represented his or her group in a representative negotiation with a member of the other group. First, the single group members had five minutes time to decide which hotels they wanted to demand in their first offers. Subsequently, each group member went to a separate room to represent his or her group in a negotiation with one representative of the other group. Consequently, in every experimental session, *three* representative dyads (cf. Figure 9) simultaneously negotiated the distribution of the nine hotels. Therefore, an important difference to Study 3 is that the third phase of Study 4 resembled a representative negotiation instead of a group-on-group negotiation. After reading the first offers to each other, the two representatives in each dyad had four negotiation rounds of three minutes to reach an agreement. At the end of each round, both representatives read their claims for the current round to each other. At the end of the negotiation, the joint outcome for the representatives within each dyad was recorded. Finally, the participants answered demographical questions, were thanked and debriefed.

7.1.3 Negotiation Task

The negotiation task is adapted from Trötschel and colleagues (2011). Its construction principles correspond in a large part to those of Study 3.

7.1.3.1 Construction Principle 1: Maximizing the Group's single Outcomes

Construction Principle 1 of Study 4 was identical to Construction Principle 1 of Study 3. The task for each group representative was to obtain the highest possible outcome for his or her agency group. This goal could be achieved by maximizing the amount of hotels for the agency group. In addition or as an alternative strategy, representatives could try to obtain those hotels that performed high on the group's highly-weighted interests and were therefore most valuable for the group. Akin to the paradigm by Trötschel and colleagues (2011) and Study 3, the value of a hotel for a travel agency was determined by the customers' interest-weightings concerning the hotel dimensions and the performance of a hotel on these dimensions. Only the number of hotel dimensions and hotel characteristics had to be changed from Study 3 to Study 4 in order to meet the task requirements of a representative negotiation.

As information about the customers' and hence the agency's interest-weightings group members received a customer survey from either the Northern German, the Middle German or the Southern German offices of the agency. In each of the three surveys, customers had been asked to indicate hotel characteristics within five hotel dimensions (service, general facilities, price, cultural activities, and sports facilities) that were important for their decision to book a hotel. Customers reported between 1 (*low interest-weighting on the respective hotel dimension*) to 9 (*high interest interest-weighting on the respective hotel dimension*) characteristics in these five hotel dimensions.

The performance of a hotel on each of these five hotel dimensions was indicated by the number of stars, ranging from 1 (*low performance on the respective hotel dimension*) to 5 (*high performance on the respective hotel dimension*). The higher the performance of a hotel on those hotel dimensions with high interest-weightings, the higher the value of a hotel for the travel agency (i.e., $V_I = \sum I_I * Q_{ID}$; with V_I = value of a hotel, I_I = interest-weighting on hotel

dimension, and Q_{ID} = hotel's performance on the respective hotel dimension; cf. Giacomantonio at al., 2010; Trötschel et al., 2011).

As four hotels served the interests of RST better, while the remaining five hotels served the interests of BST better, the negotiation had integrative potential. However, group members had to exchange and integrate their diverse information about the customers' interests of their agency in order to identify their overall group's interests. This principle is described in the next section.

7.1.3.2 Construction Principle 2: Diversity in Interest-weightings as a Challenge for within-group Information Elaboration

In major parts, Construction Principle 2 of Study 4 corresponds to Construction Principle 2 of Study 3. Information about the customers' and hence about the whole agency's interest-weightings was distributed among the three members of one negotiation group with the help of customer surveys from three geographical regions. One group member got the survey from the Northern German offices of the agency, one from the Middle and one from the Southern German offices. As indicated by the different number of hotel characteristics in each of the five hotel dimensions, the customers' interest-weightings within the three geographical regions of each travel agency (see Table 6) differed from each other. Therefore, group members had to elaborate the distributed information within their group in order to be able to identify the overall interest-weightings of the whole agency and hence the overall weightings for the group. Table 6 depicts the results of these customer surveys.

	Red Sunset Travel			Blue Sea Travel		
Hotel Characteristics	Northern Offices$_a$	Middle Offices$_b$	Southern Offices$_c$	Northern Offices$_a$	Middle Offices$_b$	Southern Offices$_c$
	Number of reported hotel characteristics within hotel dimensions					
Service	3	8	4	3	2	1
General Facilities	1	4	4	9	6	3
Price	9	9	9	9	9	9
Cultural Activities	8	3	7	1	5	3
Sports Facilities	3	2	1	2	4	9

Table 6. Number of hotel characteristics within each hotel dimension reported by the customers of the Northern, Middle and Southern offices of both RST and BST (Study 4). Subscripts indicate which group members with which customer surveys negotiated with each other in the representative negotiation.

Like in Study 3, group members were told that their joint group goal for the negotiation was to obtain hotels that met the interest-weightings of the agency's customers from all over Germany. Depending on the activated cognitive contents, for instance due to the priming of comparison mindsets, this common group goal could either direct group members' attention towards similarities or towards differences. A high level of within-group elaboration of group members' diverse interest-weightings could be achieved by summing up the number of reported hotel characteristics from all three customer surveys, averaging them or making an approximate estimation. Such a high level of information elaboration helped groups to differentiate between highly-weighted interests and interests with a low weight for their agency group. An average of nine for the hotel dimension price suggested, that price was equally important for both travel agencies (i.e., had an identical weighting; cf. Table 6). An average of six for cultural activities and five for Service indicated that these two dimensions had a higher weighting for RST than for BST, who had an average of three for cultural activities and two for Service. In contrast, an average of six for general facilities and five for

sports facilities indicated that these two hotel dimensions had a higher weighting for BST than for RST, who had an average of three for general facilities and two for sports facilities (cf. Table 6). If the two negotiation groups were able to exchange and integrate group members' diverse information about their customers' interest-weightings during their pre-negotiation preparation, group members had the chance to identify and claim those hotels in the representative negotiation that served their groups' highly weighted interests best. If the negotiation groups however failed to elaborate their information appropriately, Construction Principle 3 of reversed integrativity even increased the risk for representatives to obtain the opposite results and hence suboptimal outcomes for both agencies.

7.1.3.3 Construction Principle 3: Overcoming reversed Integrativity with Information Elaboration

In order to attain the principle of reversed integrativity in the three representative negotiations in every experimental session, some adjustments had to be made in comparison to Study 3. As explained in the negotiation procedure, always one member of RST negotiated with one member of BST. Within each of these three dyads, the principle of reversed integrativity was maximized. This was achieved with the help of the customers' interest-weightings in the different regional surveys and the design of the hotels each group member received.

In Table 6, the customer surveys of the two representatives in the same negotiation dyad are marked with the same subscript. These individual customer surveys were designed in a way that an overall highly-weighted interest of one agency group appeared to be as important or even more important to the representative of the other agency group and vice versa. For instance, the interest-weighting on cultural activities is overall very high for RST (i.e., [8 + 3 + 7] / 3 = 6; cf. Table 6) while it is overall rather low for BST (i.e., [1 + 5 + 3] / 3 = 3). In contrast to the overall high interest-weighting for the whole RST group, cultural

activities seem to be rather unimportant from the perspective of the RST member with the customer survey from Middle Germany (only 3 hotel characteristics reported by RST customers from Middle Germany). At the same time, cultural activities seem to be very important for the BST member in the same negotiation dyad (5 hotel characteristics reported by BST customers from Middle Germany). Due to this contradiction between group members' individual interest-weightings and the interest-weightings of the whole group, members of groups with a low level of information elaboration ran the risk of assigning a high weight to the wrong interests and hence prefer those hotels during the negotiation that did not serve their group's highly-weighted interests.

The hotel sets each dyad of representatives received supported this effect. Each representative dyad received a unique set of nine hotels right after the within-group pre-negotiation preparation was over and group members went back to their individual cubicles. Table 7 depicts the set of hotels for the two representatives with the customers' surveys from RST and BST Middle Germany (also see Table 6).

	Hotels to be distributed between RST and BST representatives holding the customer surveys from Middle Germany								
	Albatros	Beauty	Charme	Dream	Eden	Fantasy	Gala	Holiday	Isis
Hotel Dimensions	Number of Stars in each Hotel Dimension indicating Hotel Performance								
Service	3	2	4	2	3	4	2	4	3
General Facilities	2	2	4	3	3	4	2	3	3
Price	3	4	2	5	4	1	3	2	1
Cultural Activities	1	5	2	5	5	1	4	2	1
Sports Facilities	4	3	4	1	3	5	1	5	4

Table 7. Hotel set for the representative dyad holding the customer surveys from RST and BST Middle Germany (Study 4). Performance of the hotels on each hotel dimension is indicated by the number of stars from 1 (*low performance*) to high (*high performance*).

It is important to note that, in addition to this hotel set of RST and BST Middle Germany, two other hotel sets existed: One hotel set for the representative dyad with the customer surveys from RST and BST North Germany, one set for the representative dyad with the customer surveys from RST and BST South Germany. These three hotel sets held special characteristics: On one hand, four hotels in these sets always matched the interest-weightings of RST (i.e., hotel Beauty, Dream, Eden, and Gala) while the other five matched the interest-weightings of BST (i.e., hotel Albatros, Charme, Fantasy, Holiday, and Isis). If the three members of each group had been able to integrate their different interest-weightings during the pre-negotiation preparation, this optimal hotel distribution could be noticed in all three representative dyads. However, the integrative potential reversed if representatives did not know the interest-weightings of their whole group but instead had to make use of their individual information about the customers' interest-weightings. For instance, look at hotel Eden in Table 7. Since cultural activities have a higher weight for RST than for BST, Eden is more valuable for RST than for BST, because it performs high on this highly-weighted interest. To obtain high joint outcomes, the representatives should hence agree on giving Eden to RST. However, if the two representatives from the RST and BST offices in Middle Germany have to rely on their individual customer surveys and their interest-weightings (cf. Table 6; subscript b), Eden appears to be more valuable for BST (i.e., 5 hotel characteristics reported by BST customers from Middle Germany) than for RST (only 3 hotel characteristics reported by RST customers from Middle Germany).

This partial contradiction between individual group members' interest-weightings and the overall interest-weightings of the whole group applied to every customer survey and transferred to the preference for every hotel in all three hotel sets. Therefore, every representative dyad ran the risk of distributing the hotels contrary to their group's interest-weightings if the within-group information elaboration was low during the pre-negotiation

preparation. To sum up, representatives could maximize the joint outcomes in the negotiation, if they distributed the hotels in a way that each agency group received those hotels that matched its interest-weightings best. To achieve this, however, the exchange and integration of group members' information about the customers' interest-weightings during the pre-negotiation preparation was essential. Only if a group elaborated these diverse interest-weightings of its members during the preparation phase prior to the negotiation, the representative dyads had a chance to maximize the joint outcomes of their agencies during the negotiation.

To support the principle of reversed integrativity, two additional changes from Study 3 to Study 4 were made. *First*, one hotel dimension was added that was equally important to all group members and both negotiation groups: The hotel dimension price. Price had the highest interest-weighting (i.e., 9 hotel characteristics reported by all customers, cf. Table 6) for every group member of both BST and RST. In this way, the complexity of the negotiation was increased in order to make within-group information elaboration before the representative negotiation even more essential for the performance of the representative dyads. For those representatives whose groups had insufficiently exchanged and elaborated the information about customers' interest-weightings, it was tempting to focus on the hotel dimension price, since it had a higher interest-weighting for the customers than the remaining four dimensions. Yet, this strategy decreased the likelihood of exploiting the integrative potential in the negotiation since the hotels' performance on the remaining dimensions was neglected. *Second*, the total number of hotels to be distributed in the negotiation was increased from six in Study 3 to nine in Study 4. The uneven distribution of hotels that this number of hotels required increased the competitiveness of the task and made a high level of information elaboration even more important. It was expected that representatives should be able to deal with this competitiveness more easily, if their groups had identified those dimensions during

the pre-negotiation preparation with the highest weightings for their group. In case of high information elaboration in both groups, representatives could easily see which hotels served their highly-weighted interests. Since those four hotels matching the interest-weightings of RST scored a little higher on the hotel dimension price than the five hotels matching the interest-weightings of BST, the optimal distribution of those 9 hotels provided an even gain to both agencies and at the same time maximized their joint outcomes. To sum up, the changes made to the negotiation paradigm in Study 4 intended to increase the effect of information elaboration on representatives' joint outcomes.

7.1.4 Operationalization of the independent Variable: Comparison Mindsets

Comparison mindsets were manipulated with the identical two procedures used in Study 3: After each group member had answered a number of questions individually in front of a computer, their own answers and the bogus answers of the other two members of their group were presented to them on the screen. As described in Study 3, the number of similarities and differences between the answers of all three group members was always the same to avoid an alternative explanation of the results by different levels of diversity within the groups rather than the manipulation of comparison mindsets. In both procedures, comparison mindsets were manipulated by asking participants to focus on either the similarities (i.e., similarity mindset condition) or the differences (i.e., difference mindset condition) between group members' answers. As in Study 3, the *identical* comparison mindset was manipulated in the two negotiation groups in one experimental session.

7.1.5 Operationalization of the dependent Variables

The dependent variables in Study 4 were assessed on three different levels, or in other words, hierarchies (see Figure 10)

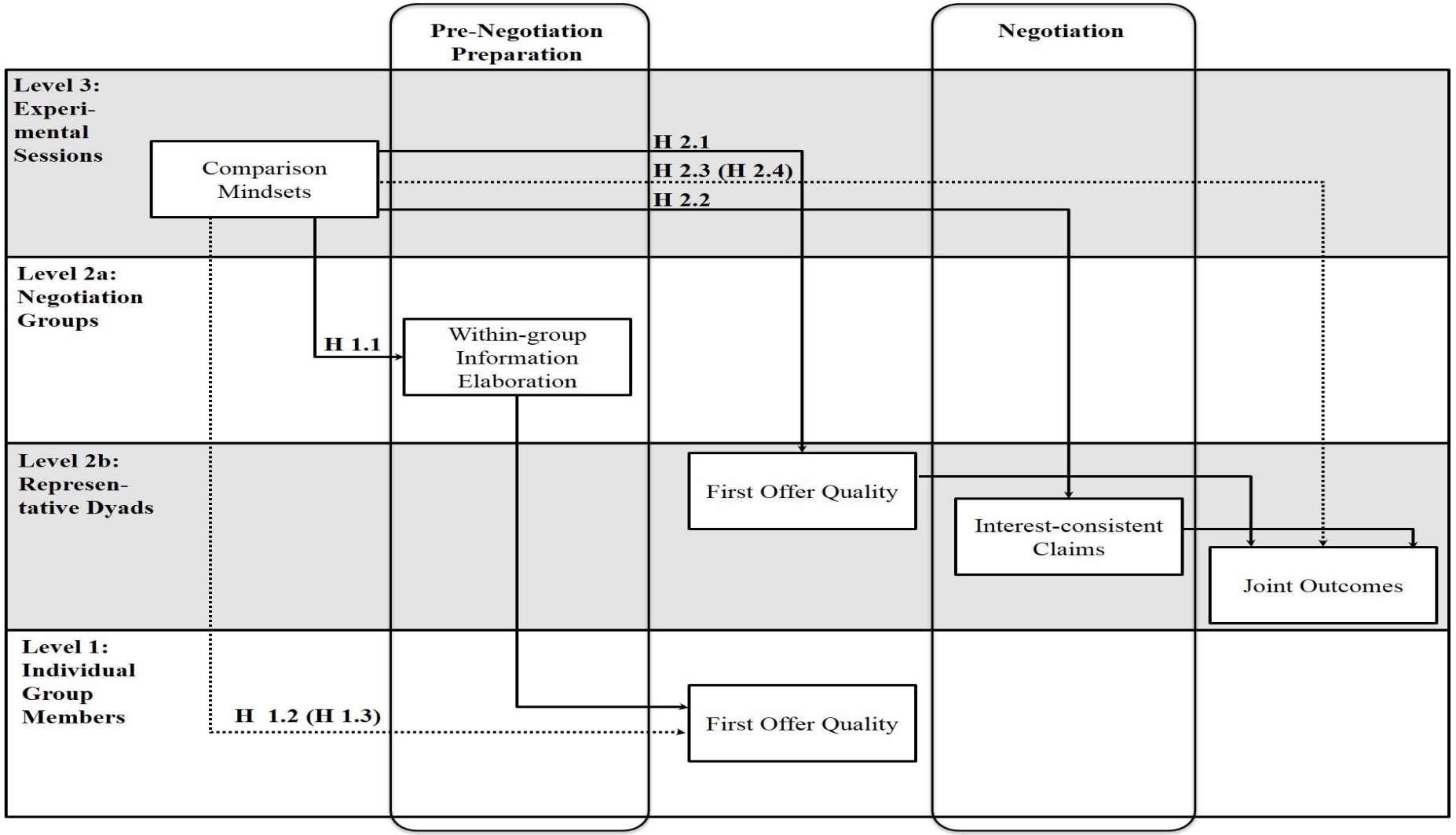

Figure 10. Summary of the hypotheses in Study 4. Hypotheses H 1.1 to H 1.3 represent the sub-hypotheses of Hypothesis 1. Hypotheses H 2.1 to H 2.4 represent the sub-hypotheses of Hypothesis 2. It is important to note that Hypothesis 1 is assessed at the level of the single negotiation groups and individual group members whereas Hypothesis 2 is assessed at the level of the negotiation dyads, consisting of the two representatives negotiating with each other.

For assessing the processes and outcomes of the pre-negotiation preparation within the groups, the dependent variables within-group information elaboration and first offer quality were measured on two different levels. The first and lowest level is represented by the individual group members (Level 1: individual group members). Before the individual group members represent their group in a negotiation with a member of the other group, they had to come up with a first offer. Therefore, the first offer quality after the within-group pre-negotiation preparation is measured on the level of the individual group members. Within-group information elaboration during the pre-negotiation preparation is measured on the level of the negotiation group (Level 2a: negotiation groups).

For assessing the processes and outcomes of the representative negotiation, the dependent variables first offer quality, interest-consistent claims and joint outcomes were measured for each representative dyad. Each representative dyad consisted of the two individual group members that entered a negotiation as their group's representative (Level 2b: representative dyads). To obtain measures on the dyad level, the measures of the two representatives within each dyad were summed up. Like in Study 3, the measurements on the level of the single representatives (e.g., representatives' first offer quality) are considered as individual contributions to the measure on the representative dyad level (e.g., first offer quality of representative dyads) (cf. additive composition model; Chan, 1998).

7.1.5.1 Dependent Variables assessing the Processes and Outcomes of the within-group pre-negotiation Preparation

Within-group information elaboration. To obtain a behavioral measure for within-group information elaboration, the pre-negotiation preparation was videotaped and coded by two observers on a seven-point rating scale, like the scale used in Study 3. The only notable change from the behavioral observation scale used in Study 3 (c.f., Section 6.1.5.1) to the scale used in Study 4 was that all behavioral anchors related to specific hotels were removed

since group members received specific information about the hotels only after the pre-negotiation preparation. 42 % of the videotapes were double coded by two raters with an average ICC of 1.00. Due to this excellent interrater reliability (Cicchetti & Sparrow, 1981), raters coded the remaining videos individually (cf. Homan et al., 2007a, 2007b).

Group members' first offer quality. Parallel to Study 3 (cf. Section 6.1.5.1), individual group members' first offer quality was assessed as an outcome of the pre-negotiation preparation. Specifically, it was counted how many hotels each group member and future group representative decided to claim in his or her first offer that performed high on the group's highly-weighted interests. Out of the nine hotels to be distributed between the two groups, four matched the interest-weightings of RST better while the other five matched the interest-weightings of BST better. Therefore, the first offer quality of RST's individual group members could vary between 0 (*none of the four interest-consistent hotels claimed*) and 4 (*all of the four interest-consistent hotels claimed*). The first offer quality of BST's individual group members could vary between 0 (*none of the five interest-consistent hotels claimed*) and 5 (*all of the five interest-consistent hotels claimed*). Consequently, the more interest-consistent hotels a group member decided to claim in his or her first offer as a group representative, the higher was his or her first offer quality.

7.1.5.2 Dependent Variables for assessing the Processes and Outcomes of the Representative Negotiation

Representative dyads' first offer quality. Based on the additive composition model (Chan, 1998), the first offer quality of the two representatives in each of the three negotiation dyads within every experimental session was summed up. Hence, representative dyads' first offer quality merely consists of the two individual group members' first offer quality (cf. previous Section 7.1.5.1). The first offer quality of each representative of RST could vary between zero and four while the first offer quality of each representative of BST could vary

between zero and five. Therefore, the first offer quality in each representative dyad could vary between 0 (*none of the two representatives claimed an interest-consistent hotel*) and 9 (*both representatives claimed all of their interest-consistent hotels*). Consequently, the more hotels the two representatives in a negotiation dyad claimed in their first offers that matched the travel agencies' interest-weightings, the higher was the representative dyads' first offer quality.

Representative dyads' interest-consistent claims. Parallel to Study 3 (Section 6.1.5.2.), it was measured how much the demands of the two representatives within a negotiation dyad improved or deteriorated over the course of the negotiation after they had made their first offers. From negotiation round to negotiation round it was assessed, how much more or how much less interest-consistent hotels the two representatives in each dyad claimed. Subsequently, the four changes in interest-consistent claims (i.e., the change from first offers to Round 1, from Round 1 to Round 2, from Round 2 to Round 3, and the change from Round 3 to Round 4) were summed up for the two representatives in one representative dyad. The interest-consistent claims in a representative dyad could vary between -9 (*both representatives changed their claims from demanding all nine interest-consistent hotels in their first offers to claiming no interest-consistent hotel in the last round of the negotiation*) to +9 (*both representatives changed their claims from demanding no interest-consistent hotel in their first offers to claiming all nine interest-consistent hotels in the last round of the negotiation*). Hence, positive values resemble an increase in the number of interest-consistent claims of a representative dyad while negative values resemble a decrease over the course of the negotiation.

Representative dyads' joint outcomes. Joint outcomes were calculated in the same manner as in Study 3 (Section 6.1.5.2). Representative dyads' actual joint outcomes were put into proportion with their highest possible joint outcomes and were multiplied by 100 to

obtain the percentage (i.e., [J_{actual} / J_{max}] * 100; with J_{actual} = representative dyads' actual joint outcomes, and J_{max} = representative dyads' maximal joint outcomes). To obtain negotiation dyads' *actual joint outcomes*, the outcomes for each of the two representatives within a representative dyad were calculated individually by summing up the point values of all hotels in the respective hotel set that the two representatives had obtained (cf. 7.1.3; $V_I = \sum I_I * Q_{ID}$; with V_I = value of a hotel, I_I[8] = interest-weighting on a hotel dimension, and Q_{ID} = hotel's performance on the respective hotel dimension). Second, the two representatives' single outcomes within each representative dyad were summed up. To obtain negotiation dyads' *maximal joint outcomes*, those point values were summed up that the two representatives would receive together, if each representative got those hotels out of the negotiation that matched the interest-weightings of its group best. Joint outcomes could vary between 90 percent and 100 percent. A joint outcome of 90 percent resulted, if the two representatives in one dyad distributed all hotels contrary to their group's interest-weightings and hence received the minimal joint outcome (i.e., [J_{min} / J_{max}] * 100 = 90; with J_{min} = representative dyads' lowest possible joint outcomes). A joint outcome of 100 percent resulted, if the two representatives attained the maximal joint outcome (i.e., [J_{max} / J_{max}] * 100 = 100). Again, the lowest possible joint outcome of 90 percent is quite high, because of the high absolute point values of the nine hotels. However, due to the differences of the hotels' performance on the five hotel dimensions (cf. Table 7), differences in the value of the hotels were highly noticeable for the groups.

[8] Please note that I_I resembles the customers' interest-weightings in all three German regions of a travel agency altogether instead of customers' interest-weightings in one special region (e.g., North Germany).Consequently, the basis for I_I are the integrated interest-weightings of the whole agency, resulting from the within-group elaboration of group members' information about the customers' interest-weightings from North, Middle, and South Germany.

7.1.6 Hypotheses

7.1.6.1 Hypothesis 1

The testing of Hypothesis 1 is divided into three sub-hypotheses (cf. Figure 11).

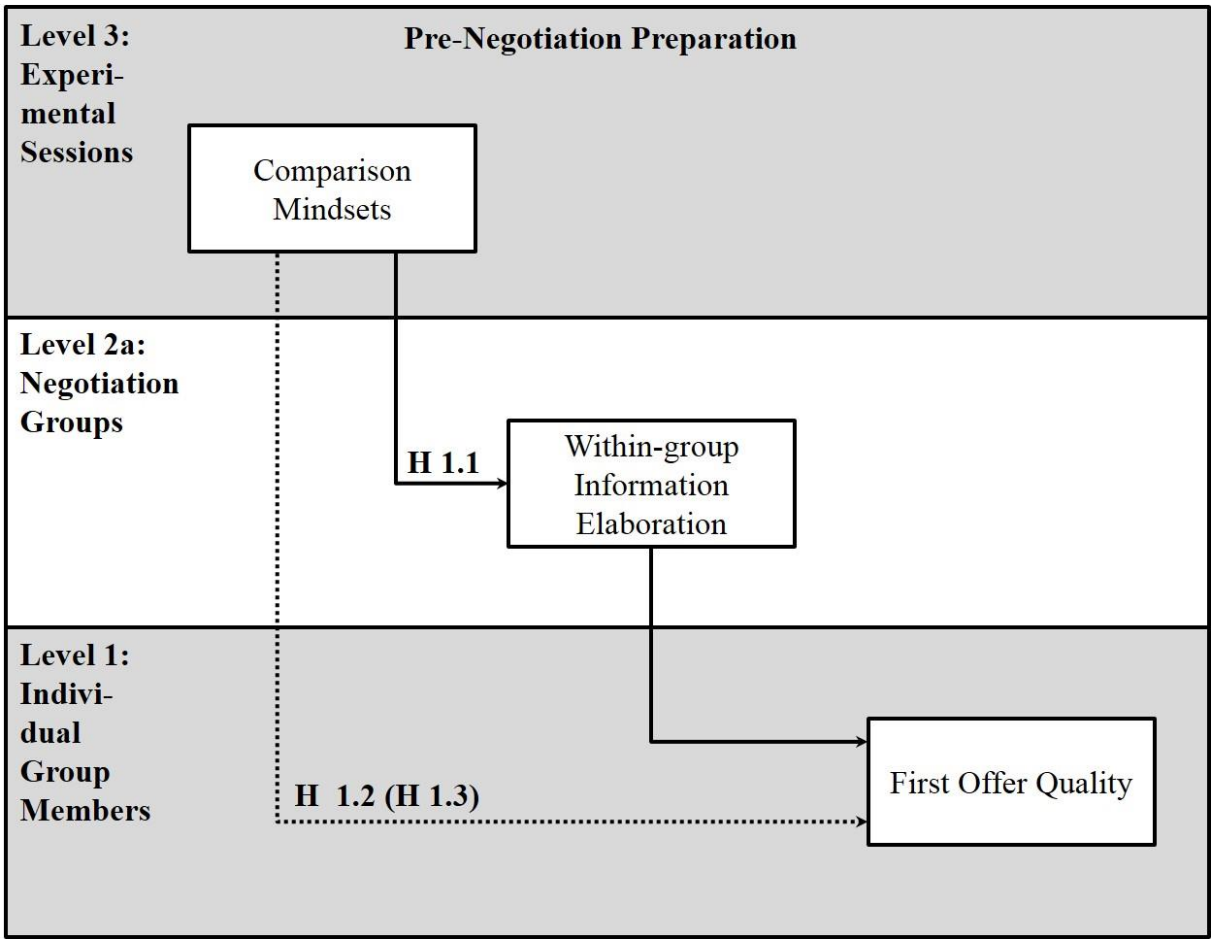

Figure 11. Hypothesis 1, with its sub-hypotheses H 1.1 to H 1.3 in Study 4. Levels of analyses are the individual group members and the negotiation groups.

Hypothesis 1.1. Compared to negotiation groups in the similarity mindset condition, groups in the difference mindset condition reveal a higher within-group information elaboration during the pre-negotiation preparation.

Hypothesis 1.2. Members of groups in the difference mindset condition reveal a higher first offer quality than members of groups in the similarity mindset condition.

Hypothesis 1.3. Comparison mindsets affect group members' first offer quality via the groups' information elaboration during the pre-negotiation preparation. More specifically, it is

predicted that, compared to groups in the similarity mindset condition, groups in the difference mindset condition reveal a higher first offer quality due to their higher within-group information elaboration.

7.1.6.2 Hypothesis 2

In Hypothesis 2, the processes and outcomes of the representative negotiation moved into the focus of attention. Therefore, Hypothesis 2 is assessed on the level of representative dyads (cf. Figure 12, Level 2b: representative dyads). In every experimental session, each of the three members of one group negotiated with one of the three members of the other group. Therefore, all dependent variables of the single representatives are summed up for each representative dyad. In every experimental session, three representative negotiations took place. The testing of Hypothesis 2 is divided into four sub-hypotheses:

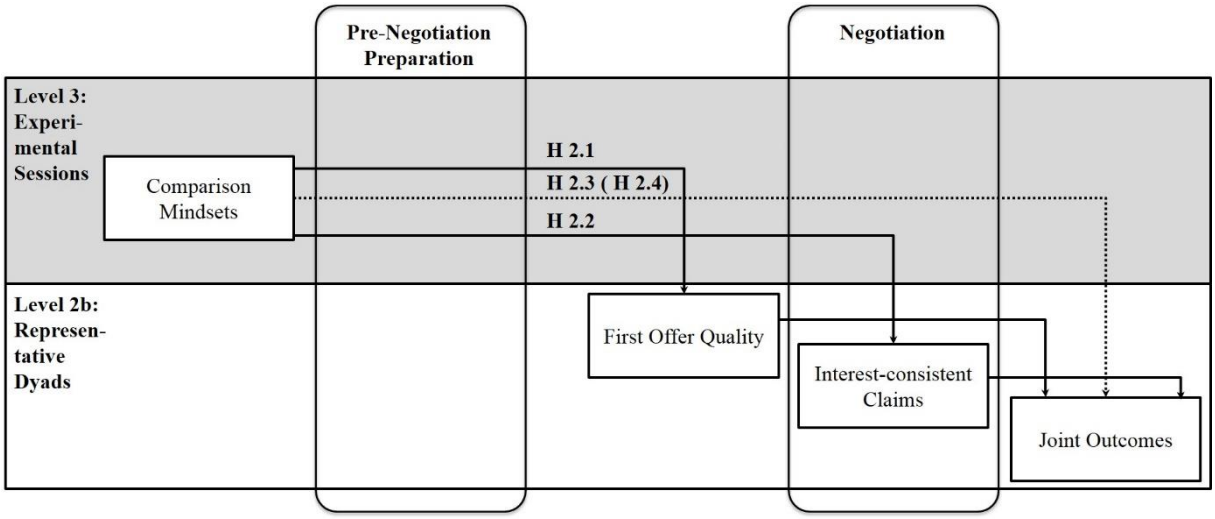

Figure 12. Hypothesis 2, with its sub-hypotheses H 2.1 to H 2.4 in Study 4. Level of analysis is the representative dyad (Level 2b: representative dyads).

Hypothesis 2.1. Representative dyads in the difference mindset condition reveal a higher first offer quality than negotiation dyads in the similarity mindset condition.

Hypothesis 2.2. Representative dyads in the difference mindset condition do not reveal higher interest-consistent claims than representative dyads in the similarity mindset condition.

Hypothesis 2.3. Representative dyads in the difference mindset condition obtain higher joint outcomes than representative dyads in the similarity mindset condition.

Hypothesis 2.4. The effect of comparison mindsets on representative dyads' joint outcomes is mediated by representative dyads' first offer quality at the beginning of the negotiation. More specifically, it is predicted that, compared to representative dyads in the similarity mindset condition, representative dyads in the difference mindset condition obtain higher joint outcomes via a higher first offer quality.

7.1.7 Analyses of Data

7.1.7.1 Software used for statistical Analyses

For statistical analyses, the R software and SPSS 21 were used. For calculating a multilevel mediation, the Mplus Software 6.1 was deployed.

7.1.7.2 Detection of Outliers and influential Observations

The same procedures for identifying outliers were used as in Study 1 (cf. Section 4.1.5.2), Study 2 and Study 3.

7.1.7.3 Analyses for the Selection of statistical Methods for Hypothesis-testing

For selecting the appropriate statistical methods, the same procedures as in Study 1 (cf. Section 4.1.5.3), Study 2 and Study 3 were used.

7.1.7.4 Special statistical Methods for assessing the Multilevel Structure of Data

Another important aspect to be considered in the selection of statistical tests was the multilevel structure of the data. The multilevel structure is represented in Figure 13.

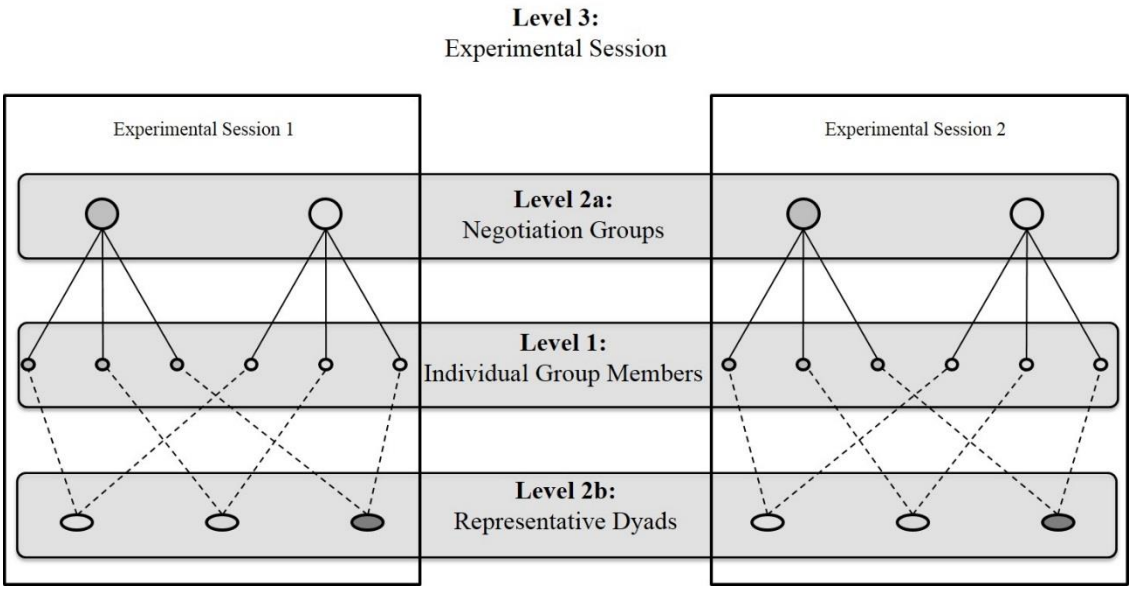

Figure 13. Levels involved in Study 4. Individual participants were nested in three ways: Within negotiation groups, within representative dyads and within experimental session.

As already mentioned in Section 7.1.5 about the dependent variables, Study 4 included three types of nestings: The experimental session (Level 3) was the highest level. The two lower levels in which data could be nested were negotiation groups (Level 2a), and the representative dyads (Level 2b). To answer Research Question 4 about the effect of comparison mindsets on joint outcomes, the data on the individual level (Level 1) was aggregated to the representative dyad level. Due to this aggregation, the representative dyad level is not a relevant nesting factor for multilevel analyses. However, the representative dyads with their first offers, interest-consistent claims and joint outcomes were nested in experimental session. Therefore, it needs to be assessed if a significant amount of variance in these three variables is explained by experimental session and therefore needs to be taken into account by multilevel analyses. To answer Research Question 3, two nestings have to be considered. First, always two negotiation groups are nested in experimental session.

Therefore, it needs to be assessed whether a significant amount of variance of within-group information elaboration is explained by experimental session and therefore needs to be modeled by multilevel analyses. For the first offer quality of the individual group members, even two nestings have to be considered: The negotiation group the individual representatives belong to and the experimental session. Therefore, a significant amount of variance might be explained by group membership and experimental session.

To investigate if multilevel analyses were warranted for testing the hypotheses, the same procedures as described in Study 3 (cf. Sections 6.1.7.4 and 6.1.7.5) were conducted. Depending on the assessed dependent variables, an ANOVA with the potential nesting factor as the focal predictor was calculated. In case of a significant result, the nesting factor explained a significant amount of variance in this variable. In addition, the ICC(1) and the ICC(2) were calculated with the multilevel package (Bliese, 2013) of the R Software. To further assess the potential multilevel structure, the fit indices of a gls model with comparison mindsets as the only predictor were compared to the fit indices of a multilevel model assessing this relationship. These calculations were performed with the nlme package (Pinheiro et al., 2013) of the R software. If the multilevel model fit the data better than the gls model, multilevel analyses had to be performed.

7.1.7.5 Special statistical Methods for Analyzing First Offer Quality

Like in Study 3, first offer quality corresponds to count data. Therefore, the normality and homogeneity of the raw data and residuals for first offer quality were tested. In addition, a potential dispersion and zero inflation was assessed (cf. Section 6.1.7.5). In this way it was determined which special statistical methods for count data were required.

7.1.7.6 Special statistical Methods for Multilevel Mediation

In correspondence to Research Question 3, Study 4 aimed at exploring, how comparison mindsets influence the within-group information elaboration during the pre-

negotiation preparation and in this way shape individual group members' first offer quality at the end of this preparation phase. With group members' first offer quality, the outcomes of the pre-negotiation preparation were located on the level of the individual group members. Therefore, the analyses of the indirect effect of comparison mindsets on group members' first offer quality via the groups' information elaboration might require a multilevel approach. In case a multilevel mediation is warranted, multilevel structural equation modelling (Multilevel SEM) with Mplus as recommended by Preacher, Zyphur, and Zhang (2010; see also Preacher, Zhang, & Zyphur, 2011) will be deployed.

In case the distributions of the mediator (i.e., within-group information elaboration) or the dependent variable (i.e., individual group members' first offer quality) deviate from normality, the Maximum Likelihood estimator will be used. This estimator has been shown to be fairly robust against moderate non-normality if the skew is still smaller than two and the kurtosis is still smaller than seven (Finney & DiStefano, 2006). To calculate the multilevel mediation, the Mplus code of the 2-1-1 model as recommended by Preacher and colleagues (2010) will be adapted in order to establish a 2-2-1 model with comparison mindsets and within-group information elaboration as the Level 2 between-subjects variables and individual group members' first offer quality as the Level 1 dependent variable.

In the results section, the conclusions of all preceding tests above will be summarized in Section 7.2.1 or the *preceding analyses* part in the section of the respective hypothesis test. Specific results will be provided in the Appendix if they suggest the usage of additional tests.

7.2 Results

7.2.1 Data Assessment and Treatment of Data

Analyses of the videotaped within-group pre-negotiation preparation and experimenters' reports about these preparations revealed that at least one out of the two

groups in three experimental sessions did not comply with the instructions of the experimenter. However, this compliance was essential for the negotiation paradigm. Therefore, these three experimental sessions (i.e., 18 participants) had to be excluded from further analyses. These sessions occurred both in the similarity and difference mindset condition. Therefore, there is no evidence for a systematical effect of comparison mindsets on this behavior. Moreover, nine representative dyads (i.e., 18 participants) were eliminated from subsequent analyses because they did not reach an agreement[9] (cf. Galinsky & Mussweiler, 2001; Galinsky et al., 2002). For the dependent variable joint outcomes, the Grubbs test identified one representative dyad as an outlier (i.e., two participants), $G = 2.83$, $p = .09$, which had obtained the lowest joint outcome of all dyads who had reached an agreement. In line with this finding, the Bonferroni outlier test identified this representative dyad as a significant outlier, $p = .033$, Bonferroni corrected. Therefore, this dyad was removed from further analyses. The tests for the remaining dependent variables did not indicate any outlier. After the exclusion of non-complying negotiation groups, impasses, and outliers, statistical analyses were performed on a total sample of $N = 112$, nested in 56 representative dyads, respectively 44 negotiation groups.

In Hypothesis 1, the degrees of freedom vary, depending on whether the sub-hypotheses focus on the group level (Level 2a: negotiation groups, Figure 13), the individual level (Level 1: individual group members) or include a multilevel structure. In Hypothesis 2, the degrees of freedom relate to the number of representative dyads involved in the analyses and take a multilevel structure into account, if necessary.

Due to the specific nature of the hypotheses in Study 4, one-tailed statistical testing was performed for all hypotheses-tests.

[9] Five of these dyads were in the difference mindset condition whereas four of them were in the similarity mindset condition.

7.2.2 Testing Hypothesis 1: Comparison Mindsets on First Offer Quality via Information Elaboration

Hypothesis 1 predicts that a difference mindset leads to a higher information elaboration within negotiation groups than a similarity mindset during the pre-negotiation preparation and therefore leads to a higher first offer quality. The degrees of freedom are related to the number of negotiating groups involved.

7.2.2.1 Hypothesis 1.1 Test: The Effect of Comparison Mindsets on within-group Information Elaboration

Preceding analyses. Analyses revealed that no multilevel analyses were warranted (see Appendix 10.1.4.1). While the variance of the observed information elaboration within the two experimental conditions was homogeneous, analyses of the raw data and the residuals pointed to a slight deviation from the normal distribution due to its flatness. The t-test is more sensitive to the violation of normality at such small to medium sample sizes ($n < 30$) when one-tailed testing is used (Kang & Harring, 2012). Therefore, the percentile bootstrap method for comparing trimmed means with 20 percent trimming and a bootstrap sample of $N = 2000$ together with a robust analog of Cohen's d will be reported (Wilcox, 2012).

Results. The percentile bootstrap method for comparing trimmed means revealed that groups in the different mindset condition elaborate the existing information about customers' interests better ($M = 4.86$, $SD = 2.27$) than groups in the similarity mindset condition ($M = 3.68$, $SD = 2.12$), estimated difference = 1.13, $p = .026$ (one-tailed), 90% CI [0.29, 3.07], $d_t = .60$. Consequently, a special sensitivity for differences helps groups to discover and integrate group members' unique information about their groups' interest-weightings compared to a special sensitivity for similarities. Hence Hypothesis 1.1 was supported.

7.2.2.2 Hypothesis 1.2 Test: The Effect of Comparison Mindsets on Group Members' First Offer Quality

Preceding analyses. While the variance between the two experimental conditions was homogeneous, tests to assess the distributional characteristics of raw data and residuals suggested a deviation from normality (Appendix 10.1.4.2). The tests to assess the multilevel structure of the data indicated a better fit of a model that takes the nesting of individual group members in their negotiation group into account. Therefore, the results of the multilevel model will be reported. To take the deviation from the normality distribution into account, the Maximum Likelihood estimator was used.

In addition to the deviations from normality, first offer quality was significantly under-dispersed. Therefore, backing up the results of the multilevel model with those of a tilted Poisson regression model may be warranted. However, a procedure for under-dispersed count data that simultaneously accounts for a nested data structure does not exist to my knowledge. Therefore, I applied the statistical procedures for under-dispersed count data to the first offer quality on the level of the representative dyads (cf. Hypothesis 2; Section 7.2.3.1). If the multilevel results at the level of individual group members and the regression models for the count data on the level of the representative dyads do not differ much, these analyses will provide a sufficient idea of the validity of the results.

Results. Multilevel analyses revealed that members of groups in the difference mindset condition attained a higher first offer quality, meaning that they demanded more hotels in their first offers that corresponded to their group's interest-weightings (M = 2.94, SD = 1.19) than members of groups in the similarity mindset condition (M = 2.47, SD = 1.26), $t(42) = 1.70$, $p = .048$ (one-tailed), $r^2 = .17$. Comparing the -2 log likelihood (-2LL) of this model with a null model (i.e., a model including only negotiation group as the nesting factor without comparison mindsets as the focal predictor) indicated a marginally significant

decrease, Δ 2LL = 2.87, df = 1, p = .09. Like Meyer, Shemla and Schermuly (2011), I conclude that this decrease mirrors the informational value of the model due to the test's conservativeness (Thomas, Bliese, & Jex. 2005). Therefore, Hypothesis 1.2 was supported.

7.2.2.3 Hypothesis 1.3 Test: The Effect of Comparison Mindsets on First Offer Quality via Information Elaboration

Preceding analyses. As the preceding analyses for Hypothesis 1.2 revealed a multilevel structure for individual group members' first offer quality (Appendix 10.1.4.2), a multilevel mediation analysis was warranted. As described in the section about the special statistical methods for multilevel mediation (see Section 7.1.7.6), a multilevel SEM with Mplus was applied as recommended by Preacher et al. (2010). For calculating the Multilevel SEM, comparison mindsets were effect coded with *similarity mindset* = -1 and *difference mindset* = 1 and entered as the predictor. The mediator within-group information elaboration and the dependent variable individual group members' first offer quality were grand mean centered (Paccagnella, 2006) before being entered into the analysis. Degrees of freedom are related to the number of negotiation groups involved and accounted for the multilevel structure of the data.

Results. The multilevel SEM revealed that within-group information elaboration mediated the effect of comparison mindsets on individual group members' first offer quality. The mediation through within-group information elaboration was significantly different from zero, with an indirect effect of .14, 95 % [CI .012, .27] and an effect size of r^2 = .12. At the same time, the confidence interval for the pure direct effect of comparison mindsets on representatives' first offers, where the indirect effect via within-group information elaboration is isolated, did include zero, 95 % CI [-0.11, 0.46]. Consequently, the effect of comparison mindsets on individual group members' first offer quality can be fully explained by the within-group information elaboration during the pre-negotiation preparation. Figure 14

illustrates the results according to the causal steps approach (Baron & Kenny, 1986) with the standardized beta-weights of multilevel regressions. To obtain the standardized regression weights for a multilevel regression, the explanatory variables were standardized to having a mean of zero and a variance of one (Ellis, 2012). As can be seen with the help of the standardized regression weights, group members in the difference mindset condition reveal a higher first offer quality than group members in the similarity mindset condition due to the higher information elaboration within their groups before the negotiation.

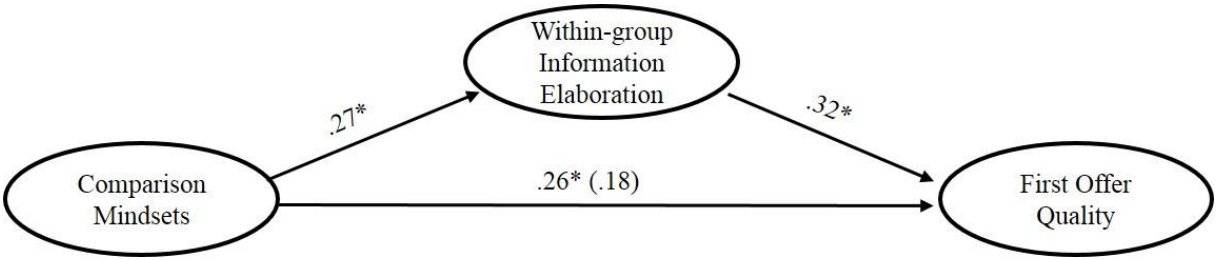

Figure 14. Mediated relations between comparison mindsets, within-group information elaboration and individual group members' first offer quality in Study 4. Numbers are standardized regression weights of the multilevel mediation. Comparison mindsets are effect coded, with -1 = *similarity mindset* and +1 = *difference mindset*. * $p < .05$ (one-tailed).

7.2.3 Testing Hypothesis 2: Comparison Mindsets on joint Outcomes via First Offer Quality

Hypothesis 2 tested how comparison mindsets affect joint outcomes. As can be seen in Figure 12, the dependent variables to explore this question are assessed on the level of representative dyads which are comprised of two group members representing their group. Therefore, all dependent variables are brought to the level of representative dyads by summing up the scores of the two representatives in each dyad. It was tested with four sub-hypotheses whether a difference mindset, compared to a similarity mindset, increases the joint outcomes of representatives by improving first offer quality within these negotiation dyads.

7.2.3.1 Hypothesis 2.1 Test: The Effect of Comparison Mindsets on Dyads' First Offer Quality

Preceding analyses. Analyses revealed that no multilevel analyses with experimental session as the grouping factor were warranted. The analyses of the residuals pointed to a slight deviation from the normal distribution. Moreover, the data was under-dispersed, yet without an additional zero inflation (Appendix 10.1.4.3). As mentioned in Section 7.2.2.2, the results of a tilted Poisson regression model will be reported in order to account for the special characteristics of under-dispersed count data.

Results. The tilted Poisson regression indicated that representative dyads with a difference mindset demanded more hotels corresponding to their groups' interest-weightings (M = 5.89, SD = 1.25) in their first offers and therefore revealed a higher first offer quality than dyads in the similarity mindset condition (M = 4.93, SD = 1.62), estimate = 0.17, z = 2.49, p = .003 (one-tailed)[10]. Consequently the results supported Hypothesis 2.1.

7.2.3.2 Hypothesis 2.2 Test: The Effect of Comparison Mindsets on Dyads' Interest-consistent Claims

Preceding analyses. Tests revealed that no multilevel analyses had to be reported and that the independent samples t-tests could be used for hypothesis testing (Appendix 10.1.4.4).

Results. Over the course of the negotiation (i.e., from first offers to the final negotiation round 3), the interest-consistent claims of representative dyads with a similarity mindset slightly decreased (M = -.62, SD = 1.54) while negotiation dyads with a difference mindset kept the quality level of their first offers (M = .04, SD = 1.51). Yet, this descriptive

[10] The generalized Poisson regression revealed corresponding results, estimate = 0.14, z = 1.94, p = .005 (one-tailed).

difference was not significant, *t(54)* = 1.61, *p* = .11, *ns*. Consequently, it cannot be concluded that comparison mindsets affect representatives' interest-consistent claims.

7.2.3.3 Hypothesis 2.3 Test: The Effect of Comparison Mindsets on Dyads' Joint Outcomes

Preceding analyses. Analyses of the normality of the data and homogeneity of variance within the two conditions revealed no significant violation of these assumptions for parametric tests (Appendix 10.1.4.5). Analyses to test the multilevel structure of the data did not indicate a significant multilevel structure. Hence, the independent samples t-test to assess Hypothesis 2.3 could be used.

Results. An independent samples t-test revealed that representative dyads in the difference mindset condition achieved higher joint outcomes (*M* = 96.77, *SD* = 2.31) than representative dyads in the similarity mindset condition (*M* = 94.89, *SD* = 2.34), *t(54)* = 3.03, *p* = .002 (one-tailed), η^2 = .15, *d* = .81. Consequently, dyads in the difference mindset condition got on average 1.88 percent more from the maximal joint outcomes than dyads in the similarity mindset condition. These additional points stem from the correct allocation of almost two more hotels in the difference mindset condition compared to the similarity mindset condition: While dyads with a difference mindset allocated almost six hotels correctly on average (*M* = 5.93), dyads with a similarity mindset allocated a little more than four hotels correctly (*M* = 4.31). To sum up, it can be concluded that compared to a similarity mindset, a difference mindset leads to higher joint outcomes for representative dyads. Therefore, Hypothesis 2.3 was supported.

7.2.3.4 Hypothesis 2.4 Test: The Effect of Comparison Mindsets on Dyads' Joint Outcomes via First Offer Quality

As predicted, tests for Hypothesis 2.2 did not reveal a significant effect of comparison mindsets on the potential mediator interest-consistent claims over the course of the negotiation. Therefore, a necessary precondition for considering interest-consistent claims as a potential mediator was not fulfilled (Shrout & Bolger, 2002; Zhao et al., 2010). Since the previous analyses for Hypothesis 2.1 established the relationship between comparison mindsets and the expected mediator first offer quality, I could proceed with testing the proposed mediation of the effect of comparison mindsets on representative dyads' joint outcomes via representative dyads' first offer quality.

Preceding analyses. Tests ruled out any characteristic of the data that could violate the assumptions of a regression based mediation analysis (Appendix 10.1.4.6). Multilevel analyses were neither warranted. Therefore, bootstrap analyses (Hayes, 2013; Preacher and Hayes, 2004, 2008) could be used without the necessity of a robust or multilevel mediation. Comparison mindsets were effect coded with *similarity mindset* = -1 and *difference mindset* = 1 and submitted to the analyses as the independent variable. Representative dyads' first offer quality was added as the proposed mediator. Joint outcomes were entered as the dependent variable. The direct and indirect effects were estimated with a bootstrap sample of $N = 3000$.

Results. The indirect effect of comparison mindsets through first offer quality was significantly different from zero, with a completely standardized indirect effect of .19 and a 95 percent bias-corrected confidence interval (see Efron, 1987), 95% CI [0.05, .37] and $r^2 = .11$. While the Confidence Interval for the total effect of comparison mindsets on joint outcomes was far away from zero, 90% CI [0.42, 1.46], the confidence interval for the direct effect was much closer to zero, 90% CI [0.03, .89]. Like in Study 3, a 90 percent confidence interval for the total and direct effect of comparison mindsets on joint outcomes was used,

since one-tailed testing was applied. Consequently, the mediation analysis provides evidence that the effect of comparison mindsets on representatives' joint outcomes is partially mediated by dyads' first offer quality at the beginning of the negotiation. Figure 15 illustrates the results according to the causal steps approach (Baron & Kenny, 1986). As can be seen with the help of the standardized regression weights, representative dyads with a difference mindset start the negotiation with a higher first offer quality and in this way increase their joint outcomes compared to representative dyads with a similarity mindset.

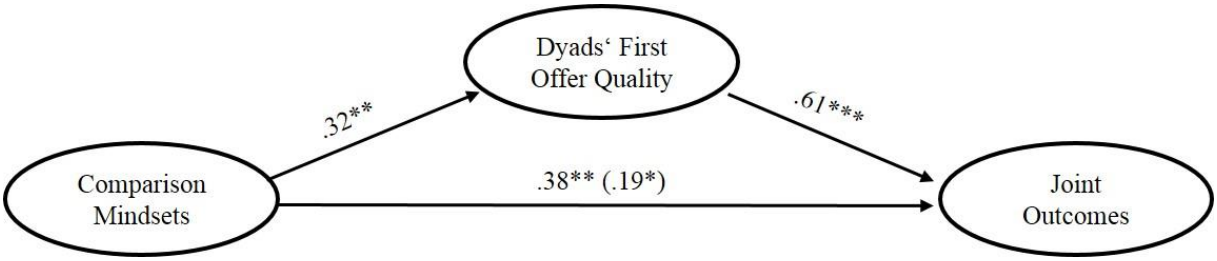

Figure 15. Mediated relations between comparison mindsets, representative dyads' first offer quality, and representatives' joint outcomes in Study 4. Numbers are standardized regression weights. Comparison mindsets are effect coded, with -1 = *similarity mindset* and +1 = *difference mindset*. * $p <$ .05. ** $p <$ .01. *** $p <$ .001 (one-tailed).

7.3 Study 4: Discussion

Affirming Proposition 3, Study 4 demonstrated that a difference mindset leads to a higher within-group information elaboration prior to the negotiation than a similarity mindset. As a result of this increased within-group information elaboration in the difference mindset condition, the individual group members and future group representatives revealed a higher first offer quality than group members in the similarity mindset condition. This relationship between comparison mindsets, within-group information elaboration and first offer quality had also been expected for Study 3. Being able to show this relationship in Study 4 might be due to the fact that this time, the groups' task for the pre-negotiation preparation did not distract group members from discussing their diverse interest-weightings. On the other hand, knowing that the pre-negotiation preparation was the only chance to discuss the negotiation with ones' fellow group members might have also increased group members' epistemic

motivation to elaborate the available information (Scholten, van Knippenberg, Nijstad, & de Dreu, 2007).

In line with Proposition 4 and 5, Study 4 showed that the effect of comparison mindsets on joint outcomes in representative negotiations is partially mediated by representative dyads' first offer quality. As groups with a difference mindset reveal a higher elaboration of these diverse interest-weightings than groups with a similarity mindset, members of these groups are able to start the negotiation with claiming more hotels that match the groups' interest-weightings and hence obtain higher joint outcomes in the subsequent representative negotiation. As expected, the effect of comparison mindsets on within-group information elaboration during the negotiation, indicated by interest-consistent claims over the course of the negotiation, was not significant. During the negotiation, representatives cannot elaborate the available information with their fellow group members and therefore cannot increase their interest-consistent claims over the course of the negotiation like the negotiation groups in Study 3 could. Instead, their joint outcomes are determined by their first offer quality. The first offer quality of the individual representatives in turn depends on the within-group information elaboration before the negotiation. Therefore, it can be concluded that the within-group information elaboration before the negotiation plays a crucial role for representative negotiations when the information about the group's interest-weightings is distributed among group members.

It is important to note, however, that I only found a partial mediation of the effect of comparison mindsets on joint outcomes via first offer quality. This may suggest that there are other mechanisms during the negotiation that are influenced by comparison mindsets and, in turn, affect joint outcomes. As representatives enter the negotiation on their own, they rely on a major part on their individual information processing to determine which pieces of information are relevant and which implications they have (Bazerman & Carroll, 1987;

Carroll et al., 1988). A difference mindset may facilitate the individual level processing about their own information (Loyd, Wang, Phillips, & Lount, 2013) and about their opponent (Todd et al., 2011). This individual level processing might also explain why the effect of comparison mindsets on interest-consistent claims is close to marginal significance.

8 General Discussion

While numerous research points to the advantage of entrusting groups rather than individuals with complex negotiations (e.g., Cohen & Thompson, 2011; Polzer, 1996; Thompson et al., 1996), the elaboration of the diverse information group members may hold is one of the major challenges that groups face (e.g., Brett et al., 2009; Hinsz et al., 1997). The degree to which groups are able to deal with this challenge influences their joint outcomes with another group or representative in an integrative negotiation (Halevy, 2008; Swaab et al., 2011; Thompson et al., 1996; Tutzauer & Roloff, 1988; Weingart et al., 1996). Yet, negotiation research has so far focused on the information elaboration between negotiation parties and neglected the elaboration of diverse information within negotiation groups. Therefore, describing within-group information elaboration during different phases of a negotiation and identifying facilitating or inhibiting factors is of high theoretical and practical relevance and thus a major goal of this dissertation. In addition, the present research aimed at making an empirical contribution to a better understanding of how within-group and between-group processes interact with each other – an interplay that has rarely been addressed empirically (Cohen & Thompson, 2011).

Evidence from previous research on diversity and hidden profiles (e.g., Antonio et al., 2004; Homan et al., 2007a, 2007b; Phillips et al., 2006; Sommer et al., 2008; van Knippenberg et al., 2004) as well as negotiation research (Bottom & Paese, 1997; Pinkley et al., 1995; Peterson & Thompson, 1997; Trötschel et al., 2011; Zhong, 2001) suggested that comparison mindsets (i.e., a special sensitivity towards either similarities or differences; Mussweiler, 2001, 2003; Todd et al., 2011) could represent such facilitating or inhibiting factors. The goal of this dissertation was to shed light on the way comparison mindsets influence negotiations with group involvement – from their activation to their consequences for the elaboration of diverse interest-weightings within negotiation groups before and during

representative and group-on-group negotiations. In the next sections, the answers to my five research questions will be summarized (Section 8.1). Subsequently, the contributions (Section 8.2) and limitations (Section 8.3) of my studies will be discussed. Finally, possible directions of future research (Section 8.4) and practical implications (Section 8.5) will be presented.

8.1 Summary of the Findings

Drawing on research on comparison mindsets, hidden profiles, diversity and negotiations, the present research intended to answer five major research questions (see Figure 1 and Figure 2) which are located along the path from the activation to the consequences of comparison mindsets in group-on-group and representative negotiations.

Research Question 1 asked how comparison mindsets can become activated in negotiations with group involvement. In line with *Proposition 1*, Study 1 revealed that, compared to low group diversity, the exposure of individuals to high group diversity activates a difference mindset. *Research Question 2* questioned how comparison mindsets influence within-group projection. In line with *Proposition 2*, Study 2 demonstrated that, compared to a similarity mindset, a difference mindset decreases the tendency of individuals to project their own interests-weightings in a future negotiation onto their fellow group members.

Moving from simulated group studies to studies with real social interactions, Research Questions 3 and 4 asked how comparison mindsets affect within-group information elaboration and outcomes before and during negotiations with group involvement. With regard to *Research Question 3* about how comparison mindsets influence within-group information elaboration and outcomes prior to the negotiation, Study 3 did not reveal an effect of comparison mindsets on the information elaboration within negotiation groups and their first offer quality. Therefore, in Study 3, *Proposition 3* was not supported. Study 4 revealed, however, that a difference mindset, compared to a similarity mindset, increases the within-group elaboration of diverse interest-weightings prior to the negotiation. In this way, a

difference mindset increases the first offer quality of the single group members who are about to represent their group in the upcoming representative negotiation. Therefore, in Study 4, Proposition 3 was affirmed, leading overall to a partial support of Proposition 3.

Research Question 4 asked how comparison mindsets influence the joint outcomes of groups with diverse interest-weightings. In the context of group-on-group negotiations (Study 3), comparison mindsets affect joint outcomes via within-group information elaboration during the negotiation, indicated by the interest-consistent claims within the negotiation dyads over the course of the negotiation. Compared to a similarity mindset, a difference mindset leads to more interest-consistent claims of the two negotiating groups over the course of the negotiation and in this way to higher joint outcomes. In Study 4, the effect of comparison mindsets on the joint outcomes of group representatives is partially mediated by the first offer quality within the representative dyads. Compared to a similarity mindset, a difference mindset leads to a higher first offer quality and hence to higher joint outcomes in the negotiation dyads. Consequently, Study 4 and 5 supported *Proposition 4* that, compared to a similarity mindset, a difference mindset increases joint outcomes in negotiations with group involvement via a higher within-group information elaboration of group members' diverse interest-weightings.

The different forms of within-group information elaboration, in which comparison mindsets may influence joint outcomes lead to *Research Question 5* asking how comparison mindsets affect joint outcomes in group-on-group versus representative negotiations. In Study 3 about group-on-group negotiations, dyads of groups with a difference mindset only make use of the chance to elaborate their diverse information about the interest-weightings during the negotiation. This high within-group information elaboration during the negotiation is indicated by higher interest-consistent claims and leads to higher joint outcomes for groups with a difference mindset, compared to groups with a similarity mindset. In Study 4, where

groups had the chance to elaborate on their diverse interest-weightings only during the pre-negotiation preparation, representative dyads with a difference mindset attain higher joint outcomes via a higher first offer quality, indicating a high information elaboration before the negotiation. Therefore, *Proposition 5* has to be limited to the statement that in group-on-group negotiations, comparison mindsets affect joint outcomes only via the within-group information elaboration during the negotiation while in representative negotiations, comparison mindsets affect joint outcomes only via within-group information elaboration before the negotiation. However, the latter mediation was only partial, suggesting that in representative negotiations, comparison mindsets might affect joint outcomes via mechanisms other than within-group information elaboration such as, for instance, the quality of individual level processing.

8.2 Contributions of the Present Research

The present research identified comparison mindsets as two mechanisms from research on social cognition (Ames, 2004a, 2004b; Clement & Krueger, 2002; Mussweiler, 2001, 2003; Todd et al., 2011) that may underlie many findings about the way groups capitalize on their differences in hidden profile research, diversity research and negotiation research. In this way, the present research connects four streams of research, which have so far been treated rather separately. As this dissertation drew on these four research streams of social cognition, hidden profiles, diversity and negotiation research, it makes several theoretical and methodological contributions to all these research streams.

8.2.1 Contributions to Negotiation Research

In the context of negotiation research, the *first contribution* of this dissertation is assessing the processes and outcomes of groups whose members hold diverse interest-weightings. In this way, it is amongst the rare empirical research acknowledging that

negotiation groups are usually not monolithic entities with homogeneous information, interests and preferences (Brett et al., 2009; Northcraft, 2011).

This contribution of acknowledging within-group diversity in information, interests, and preferences is connected to the *second contribution* of demonstrating the importance of within-group processes in negotiations with group involvement. *First*, Study 2 provides evidence that projection in negotiations is not only limited to projection between groups or parties (i.e., fixed pie perceptions and illusory conflicts; Pinkley et al., 1995; Thompson & Hrebec, 1996) but can also occur within negotiation groups. While the projection of interest-weightings is what within-group projection and fixed pie perceptions have in common, within-group projection applies to the compatible interests of group members, rather than the opposed interests of the opponents in a negotiation. Therefore, the present research provides evidence that negotiation theory and research should consider within-group projection as an independent negotiation-specific form of the social cognitive concept of projection. *Second*, the negotiation task used in this dissertation allowed for the distribution of information not only between the negotiation parties, but also within them. Therefore, the present research expands the notion that negotiations are certain types of hidden profile tasks (Thompson et al., 1995) to the within-group level. *Third*, Study 3 and 4 show that, similar to between-group information elaboration in previous research (Thompson et al., 1996; Tutzauer & Roloff, 1988; Weingart et al., 1996), within-group information elaboration affects joint outcomes in both group-on-group and representative negotiations. In this way, the present research not only shows that within-group information elaboration plays an important role in intergroup negotiations, but also answered the call from several authors (e.g., Carnevale & Pruitt, 1992; Cohen & Thompson, 2011) to assess the interdependence of within-group processes, such as within-group information elaboration, and between-group processes, such as arriving at a joint outcomes.

As a *third contribution*, this dissertation goes beyond the one-dimensional conceptualization of negotiations as a single around-the-table negotiation between two or more opposed parties (Saunders, 1985). Instead, it assessed how different types of group involvements, such as small group negotiations, group-on-group and representative negotiations as well as their outcomes interact with each other in the form of a pre-negotiation phase and a subsequent negotiation phase (Mannix, 2005; Peterson & Lucas, 2001; Rognes, 1995; Roloff & Jordan, 1991, 1992; Saunders, 1985). In line with the proposed relationships, Study 4 showed that a within-group preparation similar to an intra-team negotiation (de Wit et al., 2011) before the negotiation is highly important for the outcomes of the subsequent representative negotiation. In contrast, Study 3 revealed that negotiation groups in a group-on-group negotiation are able compensate for their low information elaboration before the negotiation by engaging in information elaboration during the negotiation. These findings also allowed for a comparison between relevant processes in group-on-group as well as representative negotiations, which has rarely been the focus of previous research.

The contribution of comparing group-on-group with representative negotiations goes along with the *fourth contribution* of assessing the importance of the two indicators of within-group information elaboration before and during the negotiation: First offer quality and interest-consistent claims. By revealing the importance of first offer quality for joint outcomes, the present research expands the importance of first offers from distributive negotiations to integrative negotiations and therefore contributes to answering the question whether the benefits of first offers "hold in different types of negotiations, in particular those where agreements can be achieved by uncovering the parties' underlying interests" (Sinaceur et al., 2013, p. 815). Moreover, this dissertation shows in which negotiation settings first offers are most important and in which settings the claiming of negotiation issues during the negotiation can compensate for a low first offer quality. Hence, the present research

contributes to a better understanding of the interrelations between first offers and claims over the course of the negotiation.

Finally, the present research not only demonstrates the importance of within-group information before or during the negotiation. By introducing comparison mindsets as a strong influence factor on within-group processes in negotiations with group involvement, it shows that general cognitive orientations in group members (e.g., a general sensitivity towards either similarities or differences) can have major effects on the processes and outcomes in integrative negotiations. In this way, this dissertation contributes to a better understanding why in some situations, groups reveal a high within-group information elaboration and achieve high integrative outcomes, while in other situations this is not the case at all. Moreover, the results of the present research suggest a difference mindset as a strong tool to increase within-group information elaboration and in this way integrative negotiation outcomes. Knowing this facilitator of within-group information elaboration paves the way of systematically shaping the setting of intergroup negotiations in a way that activates a difference mindset.

8.2.2 Contributions to Research on Social Cognition

Research on comparison mindsets has been limited to social cognition thus far, and did not assess the effects of comparison mindsets on real social interaction. By demonstrating effects of comparison mindsets on within-group projection (Study 2) and within-group information elaboration and outcomes in negotiations with group involvement (Study 3 and 4), the present research extends the findings of this research to a real social setting.

In this way, the present research also allows for a comparison between comparison mindsets and other types of cognitive mindsets (e.g., Gollwitzer & Bayer, 1999), like the perspective taking mindset, which have already been taken to social settings (e.g., Trötschel et al., 2011). In the theoretical background, I already drew parallels between comparison

mindsets and a perspective taking mindset, which also affects joint outcomes in integrative negotiations. However, it is also important to look at the differences between those two cognitive orientations. A perspective-taking mindset "activates a set of cognitive procedures (Gollwitzer & Bayer, 1999) that are directed toward the psychological states of other individuals" (Trötschel et al., 2011, p. 773). Therefore, it can be described as a special sensitivity towards similar or different cognitions of an individual. In contrast, comparison mindsets activate comparison processes that can be directed towards any comparison dimension (Mussweiler, 2001, 2003) which is salient in the current situation (e.g., visual similarities or differences between individuals). The psychological state of others is one of these possible dimensions, as Todd and colleagues (2011) revealed in their studies about the effect of comparison mindsets on perspective taking. Moreover, a perspective taking mindset resembles a sensitivity towards both similar and different perspectives of another individual, whereas comparison mindsets are either directed towards similarities or differences. This dissertation reveals that, similarly to a perspective taking mindset, a general and unspecific sensitivity towards differences can lead to an increased sensitivity towards different perspectives of an individual and, in this way, towards higher within-group information elaboration and joint outcomes. To sum up, the present research contributes to a better understanding of the interrelations between social cognitive constructs and extends empirical evidence for their consequences in real social contexts.

In addition, this dissertation fosters a better understanding of how comparison mindsets are activated in group settings. As Study 1 shows, high diversity within a group activates a difference mindset whereas low diversity within a group activates a similarity mindset. Yet, even if comparison mindsets are activated by the social context, the comparison dimension on which comparison mindsets are applied can be any salient dimension within the context. This is also suggested by Study 1, in which the perceived similarities and differences

were assessed between two pictures that were completely unrelated to the group stimuli. Of course, in a social setting, the characteristics of the group members are salient and hence a likely target of the comparison mindsets.

Finally, this dissertation provides an adaptation of the manipulation of comparison mindsets (e.g., Mussweiler & Damisch, 2008) to a group setting in which self-referential information is included. As previous literature described comparison mindsets as the activation of either distinctive or common *self-referential information* (Mussweiler, 2003; Todd et al., 2011), Studies 2 to 4 used a comparison mindset manipulation in which the self is in fact an important part of the stimulus configuration.

8.2.3 Contributions to Hidden Profile and Diversity Research

Negotiations can be viewed as a special case of *hidden profiles* (Thompson et al., 1995). Therefore, it can be assumed that comparison mindsets have similar effects in hidden profiles. As a matter of fact, the research presented in Section 2.5.2 about the evidence for the effects of comparison mindsets on projection and within-group information elaboration already suggests that. Yet, the present research provides the first direct evidence for the effects of comparison mindsets in a hidden profile setting.

With regard to diversity research, the activation of comparison mindsets by group diversity raises the question, if previous theory and research on the effects of diversity on information elaboration (e.g., van Knippenberg et al., 2004) has truly assessed the effects of comparison mindsets on information elaboration. Notably, group diversity not only leads to a special sensitivity towards the similarities and differences within the group but instead to a general and unspecific sensitivity towards similarities and differences in the environment. This can be inferred from the measurement of comparison mindsets in Study 1, which assessed the perceived similarities and differences between two pictures completely unrelated to the group stimuli. This new conceptualization of diversity research as applied research on

comparison mindsets could provide a long-missed explanation for diversity effects (Lawrence, 1997).

8.2.4 Methodological Contributions

From a *methodological perspective,* the present research applies the most recent statistical procedures for dealing with typical challenges negotiation researchers might face. From multilevel analyses and multilevel mediation models (Bliese, 2013; Preacher et al., 2010; Preacher et al., 2011) to robust statistical procedures (Brunner & Munzel, 2000; Wilcox, 2012) as well as procedures for under-dispersed count data (de Beuf et al., 2012; Yee, 2013).

8.3 Limitations and alternative Explanations of the Present Research

Of course, in spite of its theoretical and methodological contributions, the present research also faces several limitations and challenges, which can be subjected to critique.

8.3.1 Theoretical Limitations

A *first* perspective of critique could be that motivation, rather than the cognitive factor projection, explains the effects of comparison mindsets: Group members in a similarity or a difference mindset might be differentially motivated to elaborate information with their fellow group members. However, research on motivation in diverse and homogeneous groups suggests that the result pattern would be the opposite of the pattern that was found, if motivation was the driving force behind the effects. People are generally more attracted to similar others, feel more comfortable around them (Byrne, 1971; Williams & O'Reilly, 1998) and therefore prefer working with them (Jackson, 1992). The motivation to interact with each other should therefore be higher in the similarity mindset condition than in the difference mindset condition, leading to a higher within-group information elaboration and hence higher

joint outcomes. Since the opposite result pattern was found, it is unlikely that a motivational factor, rather than projection as a cognitive factor, is responsible for the effects I found.

Second, the projection of interest-weightings was not directly assessed as a mediating factor for the effects of comparison mindsets on within-group information elaboration and outcomes. I refrained from doing so as there was already valid evidence for the effect of comparison mindsets on projection (e.g., Todd et al., 2011) and the decreasing effect of projection on within- and between-group information elaboration (e.g., De Dreu, Koole, et al., 2000; Phillips et al., 2006; Pinkley et al., 1995; Stasser et al., 1995).

Third, critics might argue that within the studies of this dissertation not a situation with diverse interest-weightings within a negotiation group was established, but merely a situation of distributed information within the group. The results would therefore only be applicable to negotiation groups with real differences in interest-weightings. I agree that the negotiation setting is closer to the cooperative than the competitive pole of group negotiations (see Section 2.2.2.3). However, according to hidden profile research, group members form their preferences based on the information they receive before the group discussion (Greitemeyer & Schulz-Hardt, 2003; Mojzisch, Schulz-Hardt, Kerschreiter, Brodbeck, & Frey, 2008; Schulz-Hardt et al., 2006). Therefore, there is a justified reason to believe that the unique set of information about customers' interest-weightings was adopted by each group member and therefore led to a corresponding prioritization of the available hotels, if those interest-weightings were not integrated within the group. Consequently, the groups in the studies can be characterized as negotiation groups with diverse interest-weightings and a corresponding prioritization of the negotiation issues.

Fourth, I found an effect of comparison mindsets on within-group information elaboration and first offer quality before the representative negotiation in Study 4, but not before the group-on-group negotiation Study 3. This contradictive finding about Proposition 3

could have two different reasons: The *task structure* of the pre-negotiation preparation or differences in the *epistemic motivation* in group-on-group and representative negotiations. In Study 3, the task to decide on a first offer may have distracted group members from elaborating their information about the different interest-weightings. In contrast, group members in Study 4 could completely focus on their diverse interest-weightings during the pre-negotiation preparation, because the information about the negotiation issues was held back until after the negotiation preparation. On the other hand, a difference in epistemic motivation might be responsible for this effect. In the group-on-group negotiation, the responsibility for the negotiation outcome is shared among group members (O'Connor, 1997). Moreover, group members know that they have the chance to continue their discussions during the negotiation. Therefore, group members in group-on-group negotiations might be less motivated to engage in information elaboration before the negation than those group members who know that they will have to represent their group in a negotiation and will hence solely be responsible for the outcome. Consequently, Mediation Path 3 (see Figure 1) via both first offer quality and interest-consistent claims cannot be clearly rejected for group-on-group negotiations. However, this apparent limitation can also be seen as a key *strength* of the present research: The missing effect of within-group information elaboration prior to the group-on-group negotiation suggests that this effect is not a necessary precondition for the influence of comparison mindsets on joint outcomes in group-on-group negotiations. Instead, comparison mindsets can influence joint outcomes in group-on-group negotiations solely via the within-group elaboration during the negotiation. In addition, this result suggests that within-group information elaboration prior to the negotiation can be facilitated by the task, the instructions and the information groups receive for this phase.

8.3.2 Methodological Limitations

From a methodological perspective, several elements might be criticized as well.

To begin with, there was no control group in which comparison mindsets were not manipulated, but just measured. Therefore, the effects of a difference mindset manipulation and a similarity mindset manipulation could not be compared with a default situation without any manipulation. However, theoretical and empirical evidence suggests that a similarity mindset is a default for individuals and groups. Individuals tend to focus on similarities and engage in similarity testing (Gentner & Markman, 1997; Medin, Goldstone, & Gentner, 1993; Mussweiler, 2001; Srull & Gaelick, 1983) rather than focusing on differences. As Mussweiler (2003) states "in most comparison situations, judges are likely to focus on the fundamental ways in which the target and the standard are similar" (p. 479). In addition, the anticipated group-on-group conflict in an upcoming negotiation reinforces ingroup-outgroup categorizations (Haslam et al., 1995, 1996) which increase the perceived similarity within a group even more (e.g., Haslam, 2004; Hogg & Turner, 1987; Wilder, 1986). Therefore, it can be assumed that a similarity mindset is a default in negotiation groups. For these reasons, the theoretical gain of including an additional experimental condition without the manipulation of comparison mindsets would not have outweighed the additional cost of university resources for a control group.

Finally, one may criticize that for assessing Research Question 4, first offer quality and interest-consistent claims were used as indirect indicators of within-group information elaboration instead of a more direct measurement, for instance an observation with the help of rating scales, as applied to Research Question 3. Yet, these indirect measures of information elaboration were applied, because during the actual group-on-group or representative negotiation, other aspects of the within-group information elaboration are important than during the pre-negotiation phase: At the beginning of the actual negotiation, the within-group information elaboration prior to the negotiation becomes evident in the first offer quality. Only if group members adequately exchanged and integrated their diverse interest-weightings

before the negotiation, the group or its individual representatives are able to include those negotiation issues that meet their highly-weighted interests in their first offers. Therefore, first offer quality is what transcends from the within-group information elaboration during the pre-negotiation preparation to the actual negotiation. In a similar vein, groups' interest-consistent claims over the course of a negotiation resemble the transformation of within-group information elaboration into the actual claiming of negotiation issues. Therefore, assessing information elaboration with the help of interest-consistent claims over the course of the negotiation is more relevant during the negotiation than its assessment with the help of a rating scale.

8.4 Implications for Future Research

8.4.1 Implications for Negotiation Research

The present research provides various impulses for gaining new insights into the interplay of different negotiation phases, within- and between-group information elaboration, informational diversity within negotiation groups and comparison mindsets in negotiations.

With regard to the interdependence of the two different negotiation phases, future research should continue with assessing the interplay of within- and between-group processes and outcomes before the negotiation and during the negotiation. The negotiation paradigm of the present research provides the possibility of more complex assessments of within- and between-group information elaboration before and during the negotiation. For instance, the videotaped pre-negotiation preparation and the subsequent negotiation allow for a fine-grained behavioral coding by using the Discussion Coding System (Schermuly & Scholl, 2012). In addition, the paradigm allows for the assessment of other within- and between-group variables. With the help of the Discussion Coding System dependent variables like interpersonal affect, the purpose and the responses of every speech act within and between groups can be coded.

With regard to informational diversity within negotiation groups, the present research sets the starting point for the empirical assessment of groups with diverse interests and preferences. While this dissertation focused on groups' elaboration of members' diverse weightings of compatible interests, future research could assess the elaboration of diverse interest-weightings of opposed interests and the resulting preferences. Halevy (2008) used a similar paradigm with opposed interests, however without assessing the within-group information elaboration before the negotiation. Opposed interests should make it much harder to arrive at a joint position for the subsequent negotiation via information elaboration, increasing the probability of conflict and impasses (Halevy, 2008).

With regard to comparison mindsets in negotiations, future research should find out more about their activation and their consequences for within-group and between-group information elaboration and outcomes. *First*, factors other than group diversity may lead to an activation of comparison mindsets within negotiation groups. This could be, for instance, the level of conflict between negotiation groups. A high level of conflict in a negotiation may foster a similarity mindset within negotiation groups and hence decrease the within-group information elaboration. Future research could assess this relationship because it is highly relevant for negotiation groups, due to the inherent intergroup conflict. *Second*, this dissertation assessed the effects of comparison mindsets on within-group information elaboration, not on between-group information elaboration. Therefore, future research could assess how comparison mindsets affect the information elaboration between negotiation groups. This research could reveal whether a difference mindset leads to between-group effects similar to a perspective-taking mindset (Trötschel et al., 2011) or whether it reinforces the perceived opposition between groups, making information elaboration and high joint outcomes even more difficult (e.g., Kooij-de Bode et al., 2008). If such negative effects on between-group information elaboration existed within the present research, they were covered

by the high within-group information elaboration. When looking at both between- and within-group elaboration separately, future research could disentangle such opposed trends under the influence of comparison mindsets. *Third,* the current research had groups or representatives negotiate with each other who underwent the same mindset manipulation. Future research could assess the consequences of comparison mindsets in negotiations where one group has a similarity mindset and one group has a difference mindset. In this way, it could be assessed which comparison mindset enacts a stronger influence.

8.4.2 Implications for Research on Social Cognition

Future research should further investigate how comparison mindsets can be activated and what consequences they might have in social contexts such as negotiations. For instance, recent research suggested that a difference mindset may increase creativity (Cheng & Leung, 2013). Future research could assess if this relationship also shows in group problem solving. In negotiations, creating new negotiation issues and thereby expanding the pie (Sinaceur et al., 2013) is a creative way of resolving conflicts of interest. A difference mindset might increase the frequency of creative problem solving like this whereas a similarity mindset might reduce it.

In addition, it could be assessed how comparison mindsets influence the perception of the other group. The activation of a difference mindset within a group could lead to a less pronounced in-group versus out-group categorization, as it might decrease the group's entitativity and therefore the perceived social distance to the out-group (Haslam, 2004). This may lead to a more cooperative behavior between groups. In contrast, a difference mindset between groups could reinforce the perceived opposition between groups, making information elaboration and high joint outcomes even more difficult (cf. Section 8.2.1). Whether a difference mindset yields positive or negative effects on information elaboration could also depend on the salient comparison stimuli. If the salient stimuli are attitudes rather than

information, a difference mindset could lead to perceptions of disparity (Harrison & Klein, 2007) and therefore could lead to a low elaboration.

8.4.3 Implications for Hidden Profile and Diversity Research

With regard to hidden profile research, future research could assess whether the results of the present research about the effects of comparison mindsets in negotiations can be generalized to classic hidden profile tasks. Due to the lack of intergroup conflict, the effects of a difference mindset might be less pronounced because group members are less prone to a similarity mindset.

With regard to diversity research, future research could assess whether the effects on within-group elaboration found in previous research on diversity (e.g., Homan et al., 2007a, 2007b) can be explained by the activation of comparison mindsets; the positive effects of a high diversity on within-group information elaboration might be due to the activation of a difference mindset, whereas the negative effects of a low diversity within groups might be due to the activation of a similarity mindset. Moreover, diversity research found an interaction between group diversity and diversity believes (Homan et al., 2008; Homan et al., 2007a), leading to positive diversity effects when diversity beliefs are high but negative diversity effects when diversity believes are low. Therefore, future research could assess, if an interaction between comparison mindsets and diversity beliefs on within-group information elaboration can be found.

8.5 Practical Implications

The present research holds a couple of practical implications and recommendations for the design of the pre-negotiation preparation of negotiation groups and the leadership of these groups. *First*, practitioners should be aware that "traditional interventions, such as facilitating goal interdependence or superordinate goals reduce intergroup bias, but may at the same time

reduce the focus on the diversity within the group, which is an antecedent of the information elaboration processes" (van Dick, van Knippenberg, Hägele, Guillaume, & Brodbeck, 2008, p. 1464). Facilitators or managers of negotiation groups should therefore activate a difference mindset by instructing the groups to explore the diversity between the group members and be sensitive towards individual information, viewpoints and ideas. If groups are trained to realize the importance of differences within the group for effective group performance, a difference mindset should even go along with a high group identification (Rink & Ellemers, 2006, 2007; van Dick et al., 2008; van Knippenberg, Haslam, & Platow, 2007).

Second, the design of the pre-negotiation preparation is essential for the success of negotiation groups whose members have diverse interest-weightings. As the comparison of the pre-negotiation phase of Study 3 and Study 4 suggests, negotiation groups are better able to elaborate and finally integrate diverse interest-weightings if they are not distracted by the negotiation issues and by creating a first offer. For facilitators or managers, I therefore recommend three steps for the pre-negotiation process. In a first step, group members should be guided to focus on disclosing their individual information and interest-weightings as well as on finding a way to integrate this diverse information. Like in Study 4, this should be easiest if information about the negotiation issues is not available during this phase. In a second step, the group receives information about the negotiation issues and receives the task of prioritizing those issues according to the integrated group interest-weightings. In a third step, the group may form a first offer.

Third, my findings suggest, that information elaboration during the negotiation is essential if the groups failed to elaborate sufficiently before the negotiation or if group members feel that new information emerged that requires within-group consultation. Although the groups with a difference mindset in Study 3 were able to elaborate in between the group-on-group interaction during the negotiation, agreeing on a caucusing option at the

very beginning of the negotiation or whenever a group needs one, might be a better choice. In this way, groups have the opportunity to elaborate information without time pressure and without being overheard by the other group.

Fourth and finally, special suggestions for the choice and the preparation of group- and representative negotiations can be derived from this research for practitioners. As could be seen in Study 4, the success of group representatives depends on the quality of the information elaboration within their group before the negotiation. Therefore, facilitators and managers have to make sure that the pre-negotiation phase comprises the three steps I described above to safeguard a high elaboration quality. If the information, interest-weightings and viewpoints of the individual group members are very different, representatives should either be able to caucus with their group during the representative negotiation or those responsible should not send a representative but instead the whole group or a subset of it to the negotiation table.

8.6 Conclusion

For a considerable time, previous research neglected two important characteristics of negotiations with group involvement: First, that group members tend to have diverse information, interest-weightings and priorities that need to be elaborated within the group, and second that negotiations are more than the exchange of offers at the bargaining table. This dissertation acknowledged these characteristics and assessed the information elaboration within groups with diverse interest-weightings before and during the negotiation. By focusing on the effect of comparison mindsets on within-group information elaboration during these two negotiation phases, the present research helps to understand previous effects in negotiation research, diversity research and hidden profile research and shows how these different streams of research are interconnected. Moreover, it resembles one of the first attempts to transfer the social cognitive concept of comparison mindsets to an actual social

context. Finally, the present research is the first that compares group-on-group and representative negotiation with each other, and in this way, stresses differential needs of groups and representatives to generate integrative negotiation outcomes successfully.

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10 Appendix

10.1 Preceding Analyses of Outliers and Requirements for Hypothesis-tests

10.1.1 Study 1: How Group Diversity activates Comparison Mindsets

10.1.1.1 Preceding Analyses for Method Selection: Hypothesis Test: Group Diversity on Comparison Mindsets

The normality test for skewness (i.e., d'Agostino Test; d'Agostino, 1970) and kurtosis (i.e., Anscombe-Glynn test; Anscombe & Glynn, 1983) did not reveal any deviation from normality for the raw data of the differences that participants had found between the two pictures. The Fligner-Killeen test to assess heterogeneity did not indicate heterogeneous variances between the two experimental conditions (i.e., diversity high vs. diversity low), neither for the raw data, nor the residuals of the reported similarities and differences. Normality tests for the reported differences did not indicate any non-normality.

Next, I checked, for count-data specific characteristics. For this purpose, I recalculated the general linear model that was used above with number of differences regressed on comparison mindsets. This time however, I used the Poisson distribution as the probability model for the regression instead of the normal distribution. The Poisson distribution is the most common distribution for count data (Atkins & Gallop, 2007). With the help of this model, I assessed whether the data was over- or under-dispersed. With a dispersion of .55, the dispersion.test function of the R software indicated that the data was significantly under-dispersed. Since the Poisson regression assumes equi-dispersion and negative binomial regression models fit over-dispersed data better (Coxe et al., 2009), these regression models were not warranted. Next, I compared the observed with the expected zeroes by using the procedure suggested by Kleiber and Zeileis (2008). While according to the model, 30 zeroes would have been expected, the observed amount of zeroes (i.e., no reported differences or

similarities between the two pictures) was 20. Therefore, I did not encounter a zero inflation in the data which would have made the use of models adjusting for zero inflation necessary. Due to these results, I calculated a tilted Poisson regression model as recommended for under-dispersed data (de Beuf et al., 2012) by applying the vglm function of the VGAM package (Yee, 2013) of the R software in combination with the specification for a tilted Poisson distribution. To back up these results with a more common procedure, I additionally calculated a generalized Poisson regression model which has been recommended for both over – and under-dispersion (Consul & Famoye, 1992; Harris et al., 2012) by applying the vglm function together with the genpoisson specification (Yee, 2013).

10.1.2 Study 2: How Comparison Mindsets influence within-group Projection

10.1.2.1 Rationale for Exclusion of early Dropouts

19 participants had to be excluded because they aborted the study early and therefore did not provide the measure for the dependent variable. Hence, like Study 1, Study 2 suffered from a typical problem of online studies – a high dropout rate (Reips, 2002). However, 14 of these participants left the study early before they even started the experimental manipulation. According to Reips (2002), an early dropout before the experimental manipulation does not have a negative impact on data quality. Therefore, those 14 participants are not reported as relevant dropouts.

10.1.3 Study 3: How Comparison Mindsets influence group-on-group Negotiations

10.1.3.1 Preceding Analyses for Method Selection – Hypothesis 1.1 Test: The Effect of Comparison Mindsets on within-group Information Elaboration

The ANOVA indicated that experimental session did not influence the information elaboration of groups, $F(42,44) = 1.59$, $p = .07$. The intraclasscorrelation was ICC(1) = .23 and therefore in the lower spectrum of potential results for intraclasscorrelations which may

take values between 0 and 1. With ICC(2) = .37, the reliability of the group mean was low, far below the cut-off value of ICC(2)= .70 (Bliese, 2013). In addition, the comparison of the pooled fit indices of the general least squares (gls) model (*AIC* = 327.69; *BIC* = 334.97) and the multilevel model with experimental session as the nesting factor (*AIC* = 327.59; *BIC* = 337.31) did not reveal a better fit for the multilevel model. Therefore, no multilevel analyses are reported.

The variance of the observed information elaboration was homogeneous between the two experimental conditions. The pooled results of the Anscombe-Glynn test (Anscombe & Glynn, 1983) indicated a significant deviation from the normal distribution for kurtosis in the difference mindset condition, z = -2.98, p = .003, and in the similarity mindset condition, z = -2.09, p = .04. In a similar manner, the histogram and the qq plots for the studentized residuals of all five multiple imputation datasets pointed to a deviation from the normal distribution due to its flatness. According to the pooled results of the Shapiro-Francia test for normality, conducted with the studentized residuals, this deviation was significant, W = .93, p < .001. Since the t-test is more sensitive to the violation of normality at such small to medium sample sizes (n < 30) when one-tailed testing is used (Kang & Harring, 2012), the percentile bootstrap method for comparing trimmed means together with the robust analog of Cohen´s d will be applied (Wilcox, 2012).

10.1.3.2 Preceding Analyses for Method Selection – Hypothesis 1.2 Test: The Effect of Comparison Mindsets on Negotiation Groups' First Offer Quality

The ANOVA with experimental session as the exclusive predictor did not reveal a significant effect of experimental session on first offer quality, F(42,44) = 1.34, p = .17 with an ICC(1) = .15 and ICC(2) = .24. Moreover, the fit indices of the gls model (*AIC* = 215.03; *BIC* = 222.46) were not worse than those of the multilevel model with experimental session as the nesting factor (*AIC* = 216.23; *BIC* = 226.14).

In contrast to typical count data, the Fligner-Killeen test indicated that the variance between the two experimental conditions was not heterogeneous and the Agostino test did not indicate that the raw data were significantly skewed within the two experimental conditions. However, according to the Anscombe-Glynn test (Anscombe & Glynn, 1983) the kurtosis in the similarity mindset condition deviated significantly from normality, $z = -3.70$, $p < .001$, which is however not a typical trait of count data (Elhai et al., 2008). Yet, the histogram and the qq plot for the studentized residuals also pointed to non-normality of the data, which was confirmed by the Shapiro-Francia test, $W = .82$, $p < .001$. The dispersion test indicated that, with a dispersion of .28, the data were significantly under-dispersed, $z = -11.51$, $p < .001$. Therefore, models accounting for under-dispersion like regression models based on a tilted Poisson distribution (de Beuf et al., 2012) or a generalized Poisson distribution (Consul & Famoye, 1992; Harris et al., 2012) were warranted. The expected number of 9 zeroes exceeded the observed number of 1, so models adjusting for zero inflation were not required.

10.1.3.3 Preceding Analyses for Method Selection – Hypothesis 2.1 Test: The Effect of Comparison Mindsets on Dyads' First Offer Quality

The tests for skew and kurtosis did not indicate a deviation from normality. Yet, the descriptive analyses of the shape of the histogram and the qq plots for the studentized residuals revealed a slight deviation from the normal distribution and the Shapiro-Francia test confirmed the significance of this deviation, $W = .93$, $p = .009$. The Fligner-Killeen test was not significant, meaning that the variances between the two experimental conditions were homogeneous. The dispersion test indicated that the data were significantly under-dispersed, with a dispersion of .32, $z = -8.68$, $p < .001$. Since no observation obtained a value of zero, no zero inflation was possible. Therefore, I applied both a tilted and generalized Poission regression model to account for characteristics of the count data.

10.1.3.4 Preceding Analyses for Method Selection – Hypothesis 2.2 Test: The Effect of Comparison Mindsets on Dyads' interest-consistent Claims

Preceding analyses did not yield any peculiar characteristic of the data that would call for the use of analyses other than the independent samples t-test.

10.1.3.5 Preceding Analyses for Method Selection – Hypothesis 2.3 Test: The Effect of Comparison Mindsets on Dyads' joint Outcomes

Within the two experimental conditions, the test for kurtosis indicated a deviation from normality in the similarity mindset condition, $z = -2.15$, $p = .031$, and in the difference mindset condition, $z = -4.07$, $p < .001$. The descriptive analyses of the shape of the histogram and the qq plots for the studentized residuals also revealed a slight deviation from the normal distribution. Yet, the deviation from the normal distribution of the studentized residuals was not significant according to the Shapiro-Francia test, $W = .96$, $p = .08$. Therefore, no robust method accounting for non-normality had to be performed. With regard to the homogeneity of variance between the two experimental conditions, the Fligner-Killeen test indicated the presence of heterogeneous variances, with a test statistic of 9.05, $p = .003$.

10.1.3.6 Preceding Analyses for Method Selection – Hypothesis 2.4 Test: The Effect of Comparison Mindsets on Dyads' joint Outcomes via interest-consistent Claims

To assess the distribution of the studentized residuals of the complete model with comparison mindsets and interest-consistent claims as predictors for joint outcomes, I analyzed the shape of the histogram and the qq plot for the studentized residuals and ran the Shapiro-Francia test on them. Both, histogram and qq plot, as well as the results of the Shapiro-Francia test indicated a normal distribution of the studentized residuals of the model, $W = .96$, $p = .09$. Moreover, the scatterplot and component residual plot of the car package in the R software (Fox & Weisberg, 2011) revealed a linear relationship between the potential mediator interest-consistent claims and the dependent variable joint outcomes. At the same

time, the Variance Inflation Factors for the single predictors was below the value of two, which is considerably smaller than the cut-off values of five or even ten that other authors suggest to decide if the multicollinearity of a model is too high (Myers, 1990).

10.1.4 Study 4: How Comparison Mindsets influence Representative Negotiations

10.1.4.1 Preceding Analyses for Method Selection – Hypothesis 1.1 Test: The Effect of Comparison Mindsets on within-group Information Elaboration

Between the two experimental conditions, the variance of the observed within-group information elaboration was homogeneous. The Anscombe-Glynn test indicated a significant deviation from the normal distribution for the kurtosis in the difference mindset condition z = -2.75, p = .005. In a similar manner, the histogram and the qq plots for the studentized residuals also pointed to a slight deviation from the normal distribution due to its flatness. According to the Shapiro-Francia test for normality, conducted with the studentized residuals, this deviation is significant, W = .93, p = .013. The ANOVA with experimental session as the focal predictor was not significant. In addition, the ICC(1) and ICC(2) were below zero. Correspondingly, the multilevel model with negotiation groups nested in experimental session did not result in a better fit (*AIC* = 200.22; *BIC* = 207.36) than the gls regression model (*AIC* = 198.22; *BIC* = 203.57). These findings indicate that experimental session did not influence the within-group information elaboration. Due to these clear-cut results, no multilevel analyses are reported.

10.1.4.2 Preceding Analyses for Method Selection – Hypothesis 1.2 Test: The Effect of Comparison Mindsets on Group Members' First Offer Quality

The Fligner-Killeen test indicated that the variance between the two experimental conditions (i.e., similarity vs. difference mindset) was homogeneous. The Anscombe-Glynn test revealed a marginally significant deviation from the normal distribution for the kurtosis in the difference mindset condition, z = -1.90, p = .06 and a highly significant deviation in the

similarity mindset condition, $z = -3.29$, $p < .001$. The histogram and the qq plot for the studentized residuals also revealed a deviation from the normal distribution, which was confirmed as significant by the Shapiro-Francia test, $W = .95$, $p < .001$.

Since group members where nested in groups and experimental sessions, I calculated two ANOVAs with either negotiation group or experimental session as focal predictors as well as the corresponding ICC(1) and ICC(2). For experimental session, the ANOVA was not significant, $F < 1$, $p > .66$, and the intraclasscorrelation and its reliability were small with ICC(1) = .01 and ICC(2) = .06. However, the ANOVA for negotiation group indicated that group membership explained a significant amount of variance in the first offer quality of the individual group members, $F(43,68) = 3.05$, $p < .001$, ICC(1) = .45 and ICC(2) = .67. Correspondingly, the multilevel model of comparison mindsets on first offer quality with individual group members nested in negotiation groups had a better fit (*AIC* = 354.09; *BIC* = 364.96) than the gls regression model without a nesting structure (*AIC* = 367.42; *BIC* = 375.57). However, adding experimental session as the third level nesting factor (i.e., group members are nested in negotiation groups, negotiation groups are nested in experimental session) did not improve the model fit (*AIC* = 356.09; *BIC* = 369.68). Due to the better fit of the multilevel model, the results of the multilevel model with negotiation groups as the nesting factor will be reported. To take the deviation from the normal distribution into account, the Maximum Likelihood estimator was used for the multilevel model which has been shown to be robust against deviations from normality when the univariate skewness is below two and kurtosis is below seven (Chou & Bentler, 1995; Curran, West, & Finch, 1996; Finney & DiStefano, 2006; Muthén & Kaplan, 1985).

Like in Study 3, first offer quality corresponds to count data. Akin to Study 3, the data is under-dispersed with a dispersion of 0.55, $z = -5.97$, $p < .001$. However, no zero inflation was indicated, so models adjusting for zero inflation were not required.

10.1.4.3 Preceding Analyses for Method Selection – Hypothesis 2.1 Test: The Effect of Comparison Mindsets on Dyads' First Offer Quality

The variance of first offer quality between the two experimental conditions was homogeneous and the tests for the normality of skew and kurtosis revealed no significant deviation from the normal distribution. However, the descriptive analysis of the shape of the histogram and the qq plots for the studentized residuals revealed a slight deviation from the normal distribution. According to the Shapiro-Francia test for normality, conducted with the studentized residuals, this deviation was significant, $W = .89$, $p < .001$.

The ANOVA with experimental session as the focal predictor was not significant, $p > .25$. Correspondingly, the analyses of the intraclasscorrelation revealed an ICC(1) = .10 and an ICC(2) = .22. In addition, I compared the fit indices of the gls model with comparison mindsets as the single dichotomous predictor for first offer quality (*AIC* = 204.99; *BIC* = 211.06) to the multilevel model (*AIC* = 206.99; *BIC* = 215.09), finding no improvement of the fit when using the multilevel model. These results did not indicate that a significant amount of variance was explained by experimental session. Therefore, no multilevel analyses were reported.

10.1.4.4 Preceding Analyses for Method Selection – Hypothesis 2.2 Test: The Effect of Comparison Mindsets on Dyads' interest-consistent Claims

Analyses of the normality of the data and homogeneity of variance did not reveal a significant violation of these assumptions for parametric tests. Multilevel analyses were not indicated either, since the ANOVA with experimental session as the focal predictor did not reveal significant results, $F < 1$. Correspondingly, intraclasscorrelation and the reliability of group means were low ICC(1) = .09, ICC (2) = .19 and the multilevel model did not improve the model fit (*AIC* = 212.24; *BIC* = 220.34), compared to the gls model (*AIC* = 210.14; *BIC* = 216.32).

10.1.4.5 Preceding Analyses for Method Selection – Hypothesis 2.3 Test: The Effect of Comparison Mindsets on Dyads' joint Outcomes

Analyses of the normality of the data and homogeneity of variance between the two experimental conditions revealed no significant violation of these assumptions for parametric tests, so the independent samples t-test to assess Hypothesis 2.3 could be used in case no multilevel structure in the data was found. The ANOVA with experimental session as the focal predictor did not indicate a significant effect of experimental sessions on joint outcomes. Moreover, analyses revealed an ICC(1) of .19 and an ICC(2) of .38, indicating that the mean of joint outcomes within each experimental session was not very reliable (Bliese, 2013). In addition, the multilevel model with representative dyads nested in experimental sessions did not fit the data better (*AIC* = 259.39; *BIC* = 267.49) than the gls regression model (*AIC* = 257.39; *BIC* = 263.47).

10.1.4.6 Preceding Analyses for Method Selection – Hypothesis 2.4 Test: The Effect of Comparison Mindsets on Dyads' joint Outcomes via First Offer Quality

The shape of the histogram, the qq plots and the Shapiro-Francia test for the distribution of the studentized residuals indicated a normal distribution. In addition, the scatterplot and component residual plot depict a linear relationship between first offer quality and joint outcomes and hence provide evidence for the fulfillment of another requirement of ordinary least squares procedures. The Variance Inflation Factors of the single predictors were below the value of two, indicating that there was no danger of multicollinearity that could threaten the validity of the linear model.

To assess whether multilevel analyses were warranted, the ANOVAs with experimental session as the focal predictor and the ICC(1) and ICC(2) have already been calculated for first offer quality and joint outcomes (cf. Section 10.1.4.3 and 10.1.4.5). In these analyses, ICCs were small and the F Tests did not attain statistical significance. In

addition, the comparison of the fit indices of the gls model (*AIC* = 231.10; *BIC* = 239.20) with the multilevel model (*AIC* = 233.07; *BIC* = 243.19) predicting joint outcomes from comparison mindsets and first offer quality, did not indicate a better fit of the multilevel model.