How (not) to negotiate.

The influence of letting negotiators create their own mental accounts on negotiation outcomes.

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Abstract

Mental accounting is an important domain in negotiation research and thus earlier studies proposed a model of mental accounting in negotiation (MOMAN). The aim of this study is to replicate the results of Trötschel, Zhang & Majer (2018), who observed that creating multi-issue accounts leads to higher joint outcomes when compared to single-issue accounts and further emphasized the importance of the location of integrative potential in multi-issue accounts. In this study we compared the joint outcomes of single-issue accounts (1IA), all-issue accounts (AIA) and multi-issue accounts (4IA). Additionally the influence of letting participants create their own mental accounts was investigated, contrasting the approach by Trötschel et al. (2018). We also analyzed the underlying psychological processes and investigated if the relation between condition and joint outcomes is mediated by logrolling behavior. In line with our hypotheses, our results showed that participants creating all-issue accounts (AIA), as well as participants creating multi-issue accounts (4IA) achieved higher joint outcomes than participants in the single-issue account condition (1IA), but that there was no difference between the AIA condition and the 4IA condition. The mediation analysis revealed that logrolling behavior mediates the effect of condition on joint outcomes.

Theoretical Background and Introduction

Negotiations represent a specific type of social interaction. They are characterized by various psychological processes on the individual level, like motivation, emotions and complex decision-making and on the social level, like persuasion, communication and cooperation (Gelfand, Fulmer & Severence, 2011). Simon (1976) has explained that people are not able to act rationally because their cognitive capacity restricts them from comparing and evaluating all the information necessary to make informed decisions. In negotiations, this means that parties often fail to reach the best possible outcome.

Thaler (1985, 1999) proposed the model of mental accounting, a cognitive process that involves the recording, summarizing and evaluation of costs and benefits in mental accounts. The creation of mental accounts helps to reduce complex information and in turn limits the demand of information-processing on individuals (Thaler, 1999). Based on this model, Trötschel and colleagues (2017) developed a model of mental accounting in negotiations (MOMAN), which divides the mental accounting process into five steps:

1. **Creating mental accounts:** Composing and re-composing mental accounts (Thaler, 1999).
2. **Regulating mental accounts:** Setting limits or goals on mental accounts (Heath & Soll, 1996).
3. **Balancing mental accounts:** Offsetting the give and take within mental accounts (Read, Loewenstein & Rabin, 1999; Trötschel, Loschelder, Höhne & Majer, 2015).
4. **Evaluating mental accounts:** Assessing pay-offs between mental accounts (Read et al., 1999).
5. **Closing mental accounts:** Finalizing agreements on mental accounts (Thaler, 1999).

Previous research has demonstrated that different approaches to create mental accounts affect negotiators' decision making as well as bargaining processes and outcomes of negotiations (Trötschel et al., 2018). There are three types of mental accounts to be distinguished. First, single-issue accounts can be created, where each issue is considered separately. Second, individuals can create an all-issue account, where all issues are considered at once. Finally, issues can be distributed into separate multi-issue mental accounts (Kahneman & Tversky, 1984).

Different types of mental accounts may gravely affect the decision-making of negotiators, thereby influencing the outcomes of negotiations (Trötschel et al., 2018). For a long time, the leading opinion was that all issues should be considered and negotiated simultaneously so that individuals can fully exploit the integrative potential among issues and achieve better economic outcomes (Lewicki, Saunders, & Minton, 1997; Thompson, 2014). But Winham and Bovis (1978) argue that creating an all-issue mental account (AIA) or many single-issue mental accounts (1IA) could be a dilemma for negotiators because such a procedure leads to great informational complexity (AIA) or they make it hard to identify trade-off opportunities (1IA). These types of accounts prevent efficient information processing or systematic concession making (i.e. logrolling; Trötschel et al., 2017).

Recent studies indicated that negotiators have a higher level of judgment accuracy and exhibit more logrolling behavior when the integrative potential of a negotiation lies within mental accounts (i.e. AIA), compared to situations where it lies between mental accounts. (i.e. 1IA) This leads to higher dyadic joint outcomes. (Trötschel et al., 2018).

Hypothesis 1 (H1): In accordance with these results, we predict that participants in the all-issue account condition (AIA) will achieve higher joint outcomes than the participants in the single-issue account condition (1IA).

In the study by Trötschel et al. (2018), the integrative potential was located within or between accounts by the researchers prior to the negotiation. This manipulation is highly artificial, which is why we let our participants create two separate mental accounts with four issues each in the four-issue account condition (4IA). We predict that the relative performance of the AIA condition compared to the 4IA condition depends on the ability of our participants to form mental accounts that hold integrative potential. Subjects in the 4IA condition will have reduced cognitive demand compared to participants in the AIA condition. Nevertheless, it is important to note that, some of the subjects in the 4IA condition will be able to form mental accounts with integrative potential lying within these accounts. Some of them will fail to create accounts that hold integrative potential and will therefore achieve worse outcomes than the AIA. On average there shouldn't be any difference

Hypothesis 2 (H2): The 4-issue account condition (4IA) will achieve better results than the single-issue account condition (1IA), but there will be no significant difference between the 4IA and the all-issue account condition (AIA).

It is very difficult for negotiators to identify trade-off opportunities when the integrative potential of negotiations is scattered between mental accounts. This than leads to fewer logrolling behavior and in turn to lower joint outcomes (Trötschel et al., 2018).

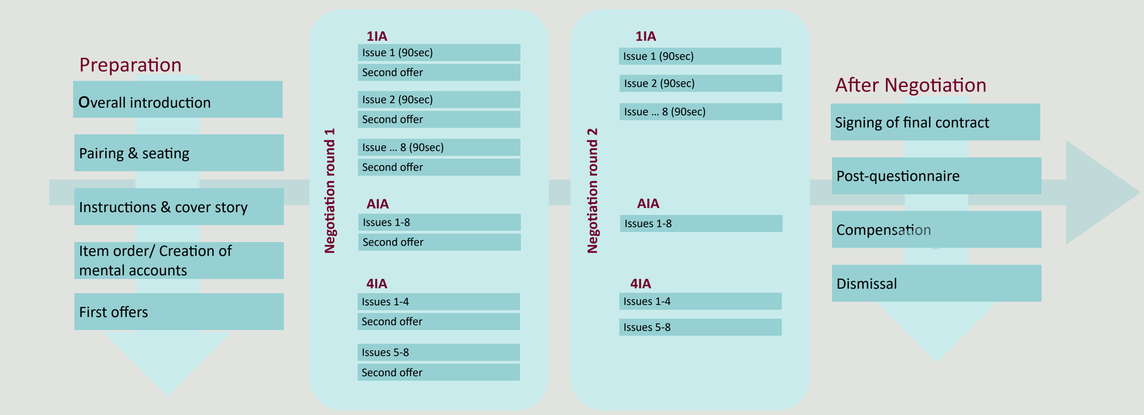
Hypothesis 3 (H3): We predict that the logrolling behavior between the two parties will serve as a mediator for the relation between condition (i.e., different types of mental accounts) and joint outcomes.

Method

Sample and Experimental Design

We conducted an experiment with an 1x3 between-subjects design, manipulating the number of items, participants considered and negotiated at the same time. Participants in the 1IA condition had to first agree on the order in which they wanted to negotiate the issues and then consider and discuss one issue at a time. In contrast, participants in the AIA condition were asked to consider and negotiate all eight issues simultaneously. Subjects in the 4IA condition distributed the eight issues into two separate packages (i.e. mental accounts) and focused on four issues at the same time.

200 subjects were recruited through the online recruiting system "Sona System", by direct advertisement on campus or in social networks, resulting in 100 dyads. Four dyads (two in 1IA, two in 4IA) had to be excluded from our analysis due to impasses, mixed up issues or not following the experimental procedure, so our final sample consisted of 96 dyads, 32 in each condition. Those 192 subjects (58 male, 134 female) with age ranging from 18 to 35 years (M = 22.1, SD = 2.68) received either 8€ or one course credit as compensation.



Measurement of Dependent variables

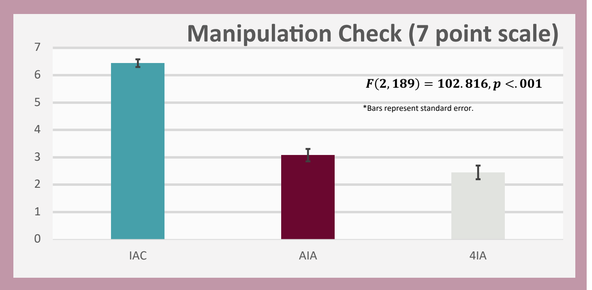
Dyadic joint outcome: The main dependent variable was the joint gain of both negotiators. It was measured from the agreement noted down in the final contract and calculated by summing up all the points from both parties.

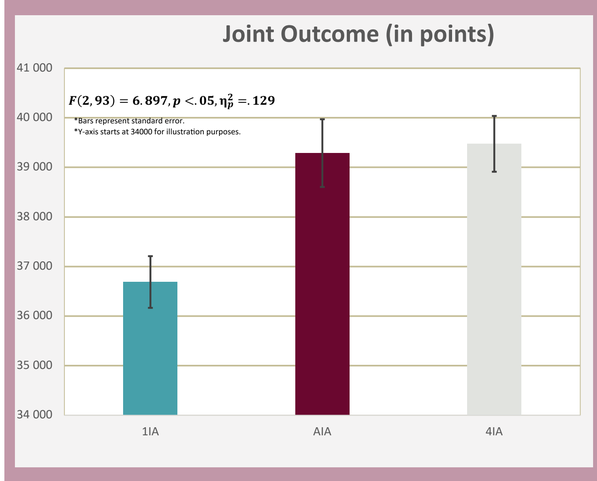
Dyadic logrolling behavior: Based on subjects' offer notes, a dyadic logrolling index was calculated for each dyad by averaging their dyadic logrolling score at the beginning, during, and at the end of the negotiation.

Results

Manipulation Check

We conducted a $1x3\ (Conditions: 1IA\ vs.\ AIA\ vs.\ 4IA)$ One-way ANOVA with our manipulation check as dependent variable. The analysis revealed a significant difference across the three conditions $F(2, 189) = 102.816,\ p < .001$. Consistent with the expectation, the Scheffé post-hoc test illustrated a significant difference between 1IA and AIA ($p < .001$) as well as between 1IA and 4IA ($p < .001$) corroborating a successful manipulation.





Joint Outcome

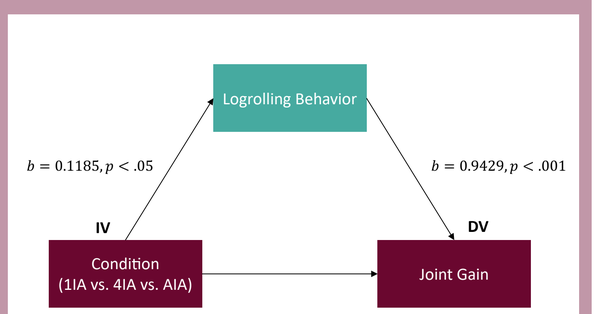
Before we compared the means of the three conditions regarding the joint outcomes, we conducted Levene's test to check for equality of variances. Since it was not significant $(p < .127)$, variance homogeneity could be assumed.

A $1x3\ (Conditions: 1IA\ vs.\ AIA\ vs.\ 4IA)$ One-way ANOVA with joint gains as dependent variable revealed a significant effect for the different approaches in creating mental accounts on negotiation outcomes, $F(2, 93) = 6.897, p < .05, \eta_p^2 = .129$. Contrast analyses revealed, in line with our hypotheses, that dyads achieved lower joint outcomes in the 1IA condition than in the AIA and 4IA conditions, $t(93) = 3.707, p < .001$, and that there is no significant difference in joint outcomes between AIA and 4IA conditions, $t(93) = 0.223, p = .824$.

Logrolling Behavior

To check for mediation we used the PROCESS macro procedure by A.F. Hayes (2017). Since we predicted a simple mediation we chose model 4 with condition serving as the independent variable, z-standardized joint outcomes serving as the dependent variable and z-standardized logrolling behavior entered as a mediator variable. As we made a directional hypothesis, we chose a 90% confidence interval and used a bootstrapping procedure with 1,000 iterations.

Bootstrapping analyses supported our hypothesis that logrolling behavior mediated the effect of the conditions on joint negotiation outcomes (indirect effect, $b = 0.1117, 90\%\ CI\ [0.0111, 0.2073]$). The direct effect was not significant anymore ($p = .1885$).



Direct effect: $b = .0251, p = .188$
Indirect effect: $b = 0.1117, CI\ [0.111, 0.2073]$

Discussion

With our study we add to the expanding body of research concerning mental accounts and their impact on negotiation outcomes. We replicated the results of Trötschel et al. (2018), by showing that negotiating parties who consider every single item separately (i.e. 1IA) achieved significantly lower joint outcomes than parties that discuss all eight issues at the same time (i.e. AIA). Therefore, our first hypothesis was confirmed. In this study we aimed for a lower level of artificiality than in the previous research by letting our participants compose their own mental accounts in the 4IA condition. We predicted that the joint outcomes of this group would rely heavily on the ability of our participants to create mental accounts that hold integrative potential. We also predicted that on average, they should achieve better joint outcomes than dyads in the 1IA condition but yield no significant difference compared to the AIA condition. This hypothesis was also confirmed by our results. Finally, we conducted a mediation analysis and were able to confirm our third hypothesis, that logrolling behavior was a mediator in this process.

There are several limitations that should be considered when looking at our results. First, even though our sample size satisfied the pre-experimental power analysis, it had a small range concerning the demographic attributes of our participants. Most of them were students from our university, which limited the variation of age and lead to a sample that was mainly female (69,79%). This limits the external validity of our experiment and the degree to which our results can be generalized. Especially the 1IA condition required a lot of interaction between the experimenters and the subjects, which could be a confounding factor. While we didn't find a significant effect on joint outcomes, when using our different experimenters as an independent variable, we can't fully exclude the possibility of experimenter influences between conditions. This is due to the fact, that every experimenter team only collected data from one condition.

An interesting implication and opportunity for future research can be inferred when comparing the results from our study to the study of Trötschel et al. (2018). While there was no significant difference in joint outcomes between the 4IA and the AIA conditions in our study, the 2-account condition with four issues in each account (i.e. 2AC) in their study had an apparent advantage over their comprehensive-account condition with all issues in one account (i.e. CAC). But only when the integrative potential lies within mental accounts. Both of these conditions were equivalent to our 4IA and AIA conditions, except for the fact that subjects in the 4IA condition could create their own accounts, while subjects of the 2AC condition used pre-prepared accounts. The reason for the difference in results between the two experiments is most likely that some but not all dyads in the 4IA condition succeeded in creating mental accounts that held integrative potential, while in the 2AC condition of Trötschel et al. (2018) the integrative potential was artificially placed within the respective accounts. This makes our study less artificial and therefore adds to the external validity. But more importantly, this points to the fact, that in reality negotiation parties fail to create multiple accounts that hold the maximum of integrative potential possible. To put it in another way, they fail to exploit the advantage of combining the reduction of cognitive demand with maximized logrolling opportunity. This hypothesis must be investigated in a future study, where one would compare our 4IA condition with the 2AC condition with integrative potential within mental accounts of Trötschel et al. (2018). If it would yield the expected results (2AC achieving higher joint outcomes than 4IA), the practical implication could be to use an independent and objective negotiation assistant in real negotiations. Both parties would share their preferences and limits with this neutral entity, which than would create negotiation packages (i.e. mental accounts) that maximize the opportunity to logroll. With the recent advances in computer science, it is also imaginable to use an AI for this procedure.

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