

# Negotiators' Strategies and Their Concessions

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## 1. Introduction

One of the key strategic elements to successful and satisfying outcomes in negotiation is preparation and planning (Lewicki et al., 1999). Many different tasks need to be performed within the pre-negotiation phase, all required to build negotiator's strategy in negotiation. A strategy is a complete and direct plan of action that needs to take into consideration all possible situations that the dealmaker may face within the decision process (Watson, 2002) and which allows him to achieve all his goals. The problem of defining and analyzing strategies is widely discussed in the literature. Experimental economics together with formal sciences, like game and decision theory, aim to build not only some descriptive models of negotiation strategies, explaining how people act in different negotiation situations, but also prescriptive or normative models showing the rules of how dealmakers should behave to obtain efficient outcomes (Brams, 1990; Filzmoser and Vetschera, 2008; Kern et al., 2005; Reiser and Schopp, 2007). In this paper we analyze the problem of strategy formulation and concession making by negotiators that took part in the GRIN research project (Global Research on Inspire Negotiations). Within this project 254 negotiators from Austria, Canada, Poland and United States conducted bilateral business negotiation via the Inspire negotiation support system (Kersten and Noronha, 1999). They negotiated a multi-issue problem including: price, payment, delivery and returns; for which an additive scoring system was proposed to evaluate the offers by means of a single aggregated criterion (utility) (Keeney and Raiffa, 1976). Having

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completed the negotiation process, each negotiator was asked to prepare a written report describing her/his negotiation behavior, strategies and goals and giving insights into their subjective evaluation of the negotiation process and system.

The main purpose of this paper is to investigate the strategies the GRIN participants used while conducting negotiations and to find out how these strategies correspond to the concession negotiators make during the subsequent rounds of the negotiation process. At the beginning we analyze how the strategies correspond to different negotiation profiles that can be identified by means of the Thomas-Kilmann conflict mode instrument (Kilmann and Thomas, 1977), then we describe the differences in activates between negotiators having different strategies. Further, we focus on shapes of concession paths that correspond to selected negotiation strategies and analyze mutual responses of the dealmakers. We also examine the reactions of negotiators for reverse concessions presented by their counterparts in order to learn whether negotiators react negatively for reverse concessions (make reverse concessions in their next proposals) or try to continue their concession paths.

## 2. Negotiators' strategies and activities

In the Inspire negotiation experiments negotiators define their strategies in terms of 7 separate characteristics. Each negotiator describes how informative, persuasive, honest, exploitative, cooperative, fair and flexible he was using 7-point Likert ordinal scale (i.e. if negotiator considers his strategy to be extremely informative he grades it 3 - if extremely uninformative he grades -3; 0 means neutral). Taking into account the results of previous experiments (Wachowicz and Kersten, 2009), in which negotiators defined their strategies referring most frequently to two features: cooperativeness and activeness, we decided to cluster our negotiators taking into account three strategy characteristics defined in Inspire: informativeness, persuasiveness and cooperativeness. Negotiators were clustered into four classes of similarity using R's clustering analysis procedure, which allowed us to identify within the set of GRIN negotiators, the following groups:

- 3VL - very little cooperativeness, informative and persuasive: negotiators with an average score of each characteristic below 0,
- 3H - highly cooperative, informative and persuasive: negotiators with an average score of each characteristic close to or above 2,
- LC2I - little cooperativeness (-0,4) but with intermediate level of informativeness (1,5) and persuasiveness (1),
- IC2L - intermediately cooperative (1,6) and a little informative (0,8) and persuasive (0,5).

The first step of our analysis was to find how the above negotiation strategies correspond to the results of Thomas-Kilmann Instrument (TKI). We referred to the five modes of conflict solving that position negotiators profile within the two dimensional space of assertiveness and cooperativeness (Figure 1).

There was no significant difference in negotiators' profiles for the predefined negotiation strategies. However, the negotiators operating with 3H had, on average, the highest scores for the collaborating and accomodating mode that resulted in highly cooperative behavior. The average sum of scores was 11,9 - nearly the half of the possible amount of scores. For IC2L the average sum was equal to 11 and decreasing for LC2I and 3VL. Consequently, the scores for competing were increasing starting with 6,35 for 3VL and ending with 5,8 for 3H. What is interesting is that groups 3H and 3VL obtained lower average scores for avoiding mode than

groups LC2I and IC2L.

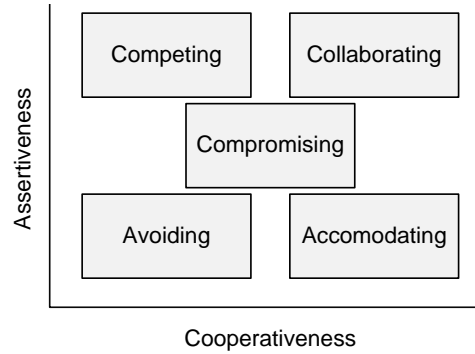


Fig. 1. TKI conflict modes.

Despite the fact that the negotiators’ profiles do not differ significantly, we can observe differences in negotiation activities for negotiators that come from different strategy clusters. 3VL negotiators appeared to be the least active within the negotiation process. They sent on average, the smallest number of offers (4,8) and messages (5,5) per negotiation experiment. Further, their messages were the briefest and consisted in sum of only 1253 characters. Interestingly, the 3H group was not the most active in GRIN experiments. Negotiators that form the LC2I cluster can be considered as the most active, they sent on average, above 7 messages and offers per negotiation (nearly 2 more than 3VL) and wrote the longest messages of 1820 characters (which is nearly 50% longer then an average 3VL’s message). The 3H group was second in the activities ranking but they distinctly differed from LC2I. On average, 3H negotiators sent messages whose length was 10% shorter and exchanged 1 message and 1 offer less than LC2I. This may be seen as somewhat surprising because these negotiators had declared to be more informative and persuasive than LC2I. This may be due to the fact that negotiators from the LC2I group showed a higher level of competitiveness.

Table 1. Average numbers of offers, messages and messages’ lengths.

	Offers	Messages	Mess. length
3VL	4,8	5,5	1253
3H	6,3	5,9	1659
LC2I	7,1	7,2	1820
IC2L	5,4	5,8	1482

### 3. Concessions paths

The second part of the research focused on analyzing the concession paths of negotiators. The average global concession path and the paths of Itex (seller) and Cypress (buyer) parties are presented in Figure 2.

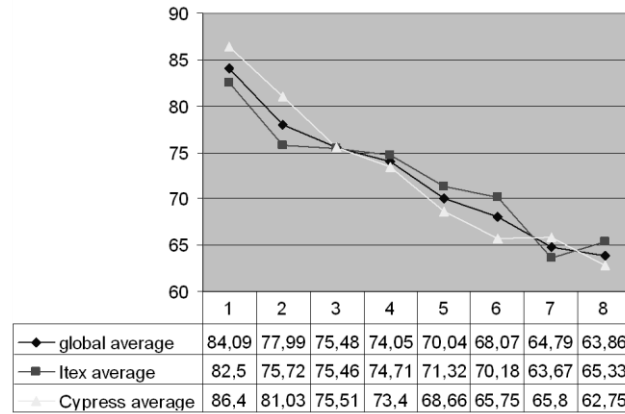


Fig. 2. Average concession paths.

After relatively big concessions made in the first and second rounds of negotiations, parties cease making concessions for one or two next rounds and continue them later. The parties differ in their concessions somewhat. Itex representatives make bigger concessions in the first two rounds and slow down explicitly for round 3 and 4, while Cypress representatives continue the concessions (smaller than Itex) for three rounds and extinguishes only for the fourth round to continue them with the same steps in the following two rounds (they become much bigger than those of Cypress). The shape of Itex concessions we observe in the GRIN experiment is similar to the concessions analyzed for Itex parties in previous research conducted by Wachowicz and Kersten (2009).

The differences in concessions may also be distinguished while analyzing different negotiation strategies of the parties (Figure 3).

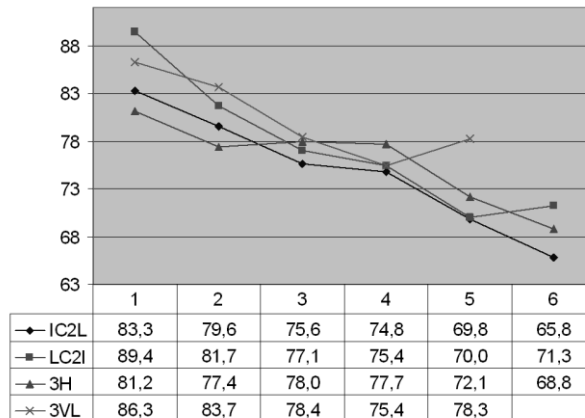


Fig. 3. Average concession paths for different types of negotiators.

We can see that 3H strategy negotiators began negotiation with the lowest opening offer, made an average concession of 4 scoring points in the second round and then stopped the concessions for the next two rounds to make concessions of 5 scoring points each in round 5

and 6, but they finally reached the lowest average agreement level of 66,5 scoring points. We obtained very interesting results for the 3VL group of strategies. For this strategy, negotiators began with relatively high opening offers and made linear concessions for the first four phases, but then, in nearly all negotiation cases, stopped the concessions or made reverse concessions. In the vast majority of situations (86%) they finished their negotiation within the fifth round. They also obtained the highest agreement levels within the whole GRIN group with an average level of 70,5. The path for IC2L strategy seems to be nearly linearly decreasing except for the concessions made in 4<sup>th</sup> round, which is a little smaller than others. The whole path is dominated by the LC2I average concession path. The final average compromise for IC2L strategy is also a little smaller than for LC2I and equals 67,3 (68,4 for LC2I). The LC2I concession paths begin with the relatively highest level. Negotiators then made the biggest concessions in the 1<sup>st</sup> round and then consequently went down to make a reverse concession in the 6<sup>th</sup> round. They also reached the second highest agreement level in GRIN group, which can suggest that making reverse concessions (or exploring the negotiation space) at the closure of negotiations may bring about good effects.

#### 4. Negotiators' reactions to counterparts moves

We also considered the subsequent offers of negotiators and analyzed the counterparts' responses to the negotiators' reverse concessions. We examined how negotiators interpret the offers of their counterparts, whether a reverse concession made intentionally by one negotiator is scored and interpreted as a reverse concession in the counterparts scoring system or seen as a true concession. And vice versa – the concession made by one negotiator can be interpreted by his counterpart as a reverse concession, due to the different negotiators' preferences having an impact on the content of their scoring systems. We investigated the reactions of GRIN negotiators for all these types of moves.

In our experiments negotiators made 143 reverse concessions (interpreted in their scoring spaces), which is 13% of all presented offers. However, only 8 of them were made as the reaction to the offers proposed by a counterpart that the negotiators interpreted as a reverse concession. So the remaining 135 situations were made intentionally and purposely or are the effects of an unsuccessful compromise search. It is interesting that within these 143 reverse concessions, as many as 88 were interpreted as concessions by the counterparts (improvements for both the negotiator and the counterpart). The next 10 reverse concessions were perceived in fact, as equally as good as the previous offer and the last 45 were perceived as true reverse concessions. In addition, the next 49 offers proposed by the negotiators as concessions (giving them the worse scores than their previous offers) were interpreted as reverse concessions in their counterparts' scoring spaces. In sum, 94 offers were perceived by the recipients as reverse concessions.

We noted earlier that in only 8 situations did the recipients react negatively, answering with the reverse concession offer. In the remaining 86 cases, negotiators continued within their concession paths. Unfortunately 8 of these concession answers were interpreted as reverse concessions, the next 16 answers were interpreted as equally good to the previous proposals and the last 62 were interpreted properly as true concessions.

This situation shows that operating with scoring systems requires from negotiators an adequate mathematical preparation and basic knowledge of the effects it can cause on the interpretation of scores. Fortunately, GRIN negotiators did not react impulsively and

negatively for reverse concessions having in mind the restriction of additive scoring systems.

## 5. Future work

In this paper we have presented only the general results of the GRIN project in the field of strategy and concession analysis. The next stage of the analysis will be to take into consideration the message reviews, which could help to identify more adequately the reactions of negotiators for different types of offers. We will also include in our research the data from written reports by students, in which they define verbally, their negotiation behavior and strategies. We will compare this information with the strategy clusters defined with the statistical clustering methods. Another approach that could be implemented in future analysis would be taking into account the effects of time pressure. The offer exchange processes may be analyzed not within the subsequent negotiation rounds perspective, but in relation to time series. The problem of identification of “optimal shapes” of concession paths that result in the most preferable agreements can be also formulated and solved by means of classic operations research tools such as goal programming.

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