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Visualization Techniques
in Negotiation Process

Julia S. Ket[a]* and Tatiana I. Yustus[b]
[a]Krasnoyarsk University Gymnasium «Univers № 1»
50 Korneev Str., Krasnoyarsk, 660001, Russia
[b]Siberian Federal University
79 Svobodny, Krasnoyarsk, 660041, Russia

Negotiations beneficial to negotiators' interests are the most effective model of conflict resolution. This approach to negotiations necessarily requires cooperative interaction between participants. However, the problem of organizing cooperation remains open. This article describes visualization techniques applicable in negotiation process and shows possibilities for effective realization of negotiation techniques. The experimental research has shown that visualization helps to productively resolve contradictions by allowing their registering and structuring and facilitates transition of participants' attitudes from confrontation to cooperation.

Keywords: negotiations, cooperation, confrontation, visualization technique, communication in negotiations.

Negotiations have already become a familiar and even everyday phenomenon of modern life. It has also become usual for professionals to distinguish two fundamentally different approaches to negotiations. Their names differ from author to author [1, 2, 5, 6, 10], but the essence remains the same – negotiations are interaction in the sort of fighting for one's own interests (1) or interaction, aimed at overcoming the struggle for a joint search for mutually beneficial solutions (2).

Authors of texts about negotiations and trainers teaching negotiation techniques, should certainly choose their position, and, as a rule, they clearly inform course participants or readers, which approach they consider most adequate and what values they base their conception on.

We will not be an exception, and tell from the beginning that we stick to the approach of principled negotiations and negotiations based on mutual interests (they are the model of "win-win", a joint search for solutions with a partner, a joint resolution of the problem, etc.). We believe that productive negotiations are cooperation of all participants for searching of or developing the most beneficial solution for all of them. We also believe that negotiation technology always gives an opportunity to find such a solution.

However, being psychologists, we also know that such kind of human interaction is not natural, but rather unnatural. That is, struggle

*   Corresponding author E-mail address: juliaket.90@mail.ru

is much more characteristic for human nature than cooperation. We will not dwell on reasons for this circumstance, we will only mention that in negotiation practice transition to cooperation does not occur by itself.

The question we are looking for an answer to is how to organize cooperative interaction, which is very valuable for us, during negotiation process.

Part of the answer lies in the negotiation technology in its Harvard interpretation. If everything is done according to the technology, the parties will have to cooperate. But what can make communication, adequate technology of negotiations according to one's own interests, possible? It is necessary to find ways, techniques, which would allow to overcome confrontational stereotype and spontaneity and draw the participants in the position "above" the situation that led them to the negotiating table.

Looking for an answer to this question it is useful to consider the experience of collective action and collective thinking in other types of practices – for example, in organizational activity games, mediation, conflict analysis. Analysis of literature describing psychotechnics in these practices [6, 7, 9] shows that the most clear and necessary for objectification is visualization technique. When previously disjointed material, distributed among the participants, is shared and "laid out" on the common board, it provides an objective picture, alienated from all the participants.

We know that there are at least two parties in the negotiations, who "meet" about the common theme, subject, and often cannot come to an agreement. Each party comes to the negotiation table with their own vision and perception of the situation, and if it so happens that the vision of one party remains closed for another, and vice versa, then they do not meet productively. In order to build arguments, it is necessary for the parties

to have a common picture, look for options, basing on the same premises. Besides that, if you look at the situation of negotiations from the outside, a general stereotype is triggered – the parties sit "opposite each other", when a visual image appears, which is taken outside, then the negotiation "space" changes. A certain scheme appears, in which there are inconsistencies and gaps, and two parties appear, that together deal with these inconsistencies. It seems that visualization can become a way to build cooperative interaction in negotiation process.

Analyzing the literature on visualization, we identified some common visualization techniques that can be used for building communication in negotiation process. The most detailed description of the techniques are given in the works of European authors: "Working with conflict. Practical skills and strategies for working with conflict." S. Fischer, D.Ludin, Smith et al [5] G. Hesl " Mediation in resolution of conflicts" [8]. To understand the general mechanism of their work and the impact on communication in negotiations we will give the description of three methods, which are summarized below:

Conflict mapping – is a method of graphical presentation of conflict in which the parties are placed according to their attitude to the problem and to each other;

The purpose of the method: it is used to see the relationships between the parties more clearly, to find out how the participants are distributed: direct, indirect actors, etc., to see where actual or potential allies are ;

When to use : when there are many participants, relationships between them are complicated, when it is not clear who is a direct and who is an indirect participant; ;

Cards – this is a method of conflict analysis, in which the interests and goals of the conflicting parties are deliberately separated and written on separate cards ;

Purposes of the method: it contributes to a better understanding of the situation due to the fact that each participant determines their own purposes and interests and those of their opponents, after that the cards of all the participant are compared. This allows to see the differences in the parties' picture of reality and understand the need to coordinate it.

When to use : when there is a lot of information and there is no clear understanding of the requirements of the opponent, and when it is difficult to determine the interests and goals of both parties and to understand how they relate;

Table – is a method of structuring information, a list of data organized into a certain system and distributed into graphs.

Purpose of the method: bringing large amounts of data in order to optimize the method of storing it and using it;

When to use: when working with large amounts of information, and as a consequence, with many interests \ goals, etc. ;

Diagram, drawing – is a method of graphical representation of information by grouping it and marking connections and relations between the groups;

Purpose of the method: identifying key units to determine connections and relations between them;

When to use: when working with a large amount of information, when you need to present your own interests and show how they are related to the interests of the opponents; when you feel information overload and difficulty to hold it.

So, to negotiate in a productive way it is necessary for the situation to be structured, the actions of the parties, their goals and interests need to be defined, communication needs to be built and the situation needs to be as "transparent" as possible. Visualization techniques allow to objectify diverse information,

which individual participants in the negotiations have. Therefore, we can assume that visualization techniques can become ways of structuring the situation (structuring will be achieved by using visualization techniques) in the negotiation process. In addition, visualization can help to change the attitude of the participant from confrontation (against each other) to cooperation (together against the problem). This idea formed the basis of our experimental study.

The experimental study of visualization techniques as a way to structure a conflict situation in negotiations

In the experiment, we tried to find the connection between using visualization techniques and productivity of the negotiation process, attitudes of participants of the negotiations to each other.

We assumed that:

1) using visualization techniques by participants of negotiations helps to productively resolve the conflict by structuring it;

2) using visualization techniques by participants of negotiations affects subjective perception of a conflict situation and helps to change attitudes from confrontation to cooperation.

The participants of the research were students of Siberian Federal University, studying for a degree in Psychology (2 groups), in International Economics (2 groups), young teachers of Krasnoyarsk Krai, having not more than three years of teaching experience (2 groups); municipal employees and managers, executives of a construction company in Krasnoyarsk (6 groups). The total sample was 96 people. All participants were interested in further training in the field of negotiations and they had basic knowledge of conflict analysis and negotiations.

The participants of the study were grouped into 12 groups of 8 people, based on the requirements of the methodology applied to the research. The unit of analysis in this study was the group. Some of these groups were experimental, some were control groups. To justify the distribution and understanding of the course of the research we will describe its program and stages.

At the first stage of the research, as mentioned above, in order to organize the impact on the experimental group, the participants were equipped with visualization techniques ("tables", "diagrams", "conflict mapping", "drawing", "cards", etc.): a set of techniques was discussed with the participants before the negotiation process, appropriateness of their use and ways to apply them. In addition, the materials were prepared that would allow the use of the techniques (such as tables for participants, a drawing board, cards, etc.)

At the second stage of the research preparations were made for structuring the negotiating process. In order to equip researchers with a tool to answer the main question of whether the techniques have impact on: registering contradictions in the negotiation process; identification of the subjective perception of the conflict situation by the participants of the negotiations, we have developed a set of criteria to determine the attitudes of the participants: cooperation or competition. These criteria formed the basis of criterion- based observation of the negotiation process.

At the third stage of the study a game procedure "The Inheritance of Grandmother Charlotte" was chosen for construction of negotiation process. This procedure was carried out in each of the groups, control and experimental. At this stage the researcher, equipped with the criteria for detection of a certain feature, monitored the negotiation process.

Description the game procedure

The number of participants is 8 people. According to the story, each of the participants is a close relative or friend of Grandmother Charlotte, who died and left a will in which each of the participants was included. The goal of the participants is to divide up the inheritance. Each participant receives a plot describing their goals, interests and character traits. The participants must act in accordance with their storylines. In some points, their goals are consistent, some are directly opposite. There are 10 positions that must be distributed. If the property is not distributed (if agreement cannot be reached and a contract to be sighed during the limited time), the participants will lose half of the total cost of the property.

The performance criteria of the negotiations are both the fact of reaching/not reaching an agreement, and additional bonuses received by the participants for satisfying the interests stated in their plots. All conditions of getting bonuses are known by the participants in advance.

The moderator of the procedure reads out the general conditions, keeps track of time and takes the form of the contract, which was signed \ not signed by the participants. Furthermore, the moderator can give the participants additional bonuses that they can get depending on the personal plot.

This procedure was chosen in view of the fact that 1) it involves a large number of participants and, as a consequence, a large amount of information; 2) content-wise, the information is of different nature: emotional, informative, specifying ; and 3) a large amount of emotionally – colored information noises procedural component of the negotiation process. These conditions organize reality, where it is possible to use visualization techniques.

In addition, the procedure provokes the initial confrontation attitude. We were interested in whether the participants can change their

attitude to cooperation if they use visualization techniques.

As a result of the research of experimental control groups, the following data were obtained. For convenience, we made a table (see Table 1.), where we placed the fact of using the technique, registering contradiction, attitudes, demonstrated by the participants and the result of negotiations: whether the parties managed to reach an agreement.

The data will be interpreted in the following way: the data of the control and experimental groups will be compared on a particular characteristic, then the data within each group will be interpreted separately.

In 7 out of 7 cases of use of visualization techniques in the negotiation process, the contradiction was registered by the participants: the participants can articulate what the main

problem, the main difficulty of the situation is, distinguish interests and goals of each other, analyze the gap; however, in the cases where visualization was not used, the contradiction was not registered by the participants, with one exception: out of five examples of negotiations process without using visualization techniques only in one case the contradiction was articulated. This allows us to make the conclusion about connection between the use of visualization techniques and formulation of contradictions.

Comparison of these groups by the type of attitude of the participants: in 7 out of 7 experimental groups the participants show the attitude of cooperation, in 5 of the control groups only in one group the participants demonstrated the attitude of cooperation, in all others – competition. This allows us to make the conclusion about the connection between

Table 1. The experimental data for modeling the negotiation process

№ group	Visualization techniques used	Technique	Contradiction is registered/not registered	Attitude of competition/ cooperation	Effectiveness (whether an agreement is reached or not)
Data of the experimental group					
№1	+	Conflict mapping	Registered	Cooperation	+
№2	+	Table	Registered	Cooperation	+
№3	+	Conflict mapping	Registered	Cooperation кооперация	+
№4	+	Conflict mapping	Registered	Cooperation	+
№5	+	Conflict mapping	Registered	Cooperation кооперация	-
№6	+	Table	Registered	Cooperation	-
№7	+	Table	Registered	Cooperation	+
Data of the control group					
№8	-	-	Not registered	Competition	-
№9	-	-	Registered	Competition	+
№10	-	-	Not registered	Competition	-
№11	-	-	Not registered	Competition	-
№12	-	-	Not registered	Competition	-

the use of the techniques of visualization and attitude which facilitates productive resolution of the conflict due to its articulation: in 7 out of 7 cases of use of visualization techniques in the negotiation process, the contradiction was articulated by the participants: the participants can formulate the main problem, the difficulty of the situation, identify interests and goals of each other, analyze the gap;

2) using visualization techniques by the negotiators affects the subjective perception of a conflict situation and contributes to change of attitudes from confrontation to cooperation of the participants towards each other: using visualization techniques facilitates cooperation between the negotiators.

Comparison of these groups in terms of productivity of the negotiation process (whether an agreement was reached): in 5 of 7 experimental groups, the participants reached an agreement, in one of the five control groups agreement was reached. This can be interpreted as follows: using visualization techniques by the negotiators affects the productive outcome of the negotiation process.

The analysis of the data of the experimental group shows that of all the techniques only conflict mapping and tables were used. This means that these techniques are most preferable for this procedure. According to the participants, these techniques were most appropriate for them, taking into account the specifics of the stimulus information.

By observing the negotiation it was possible to identify some general trends of unfolding action in the procedure "Inheritance of Grandmother Charlotte". In all control groups we observed the following: all the given time is spent by the participants for the stage of presentation of positions. This is due to the fact that when participants present their attitude towards the subject, describe their claims, they receive

criticism about the traits of character, and also the participants whose goals coincide with those of the speaker, immediately become active and start bargaining over the desired property. This makes discussion of the parties' presentations way too long and destroys the general logic. In one of the control groups the participants spent so much time on discussion of the presentations that not all the participants had the time to present their characters. Lack of fixations and changing of logic complicates the process of decision-making. Besides that, the participants simultaneously discuss several issues: what they want to achieve, how, on what basis they think it appropriate to distribute the property, character traits and relationships between the participants. The transition from one issue of discussion to another creates difficulty in understanding and retaining information and is reflected in the emotional attitude to the process. As an example, we will give some comments of the participants: "After the fifth minute of discussion, I completely lost track of the conversation, what everyone's demands were. The only thing that I realized is that it is better to remain silent, maybe something will be clarified by the end of the conversation", "this is not negotiations, it is some farce, in this situation, I can sign any nonsense, so I will not sign the contract".

In those cases where visualization was used, the following points can be noted. Work with tables was carried out by the participants throughout the whole negotiation process. At the stage of the parties' presentations, the participants built their speech basing on the column specified in the table: thus, it took about 7 minutes. In addition, a large amount of unnecessary information that could "noise" this procedure was cut off (details of life, traits of character, relationships with Charlotte, etc.). Later each of the participants worked with their own table and was looking for the "right" person

to talk to on the basis of their goals. The example of the participants words after the procedure: ".. I looked at the table and understood who I needed to communicate with. First it felt like everyone needed everything at once, that everyone claimed the same items, then when everything was laid out it turned out there were some extra items left unclaimed". "It is very convenient to use the table, there appears a picture of everyone's claims and what should be negotiated in the first place". Thus, we can conclude that the technique of "tables" helps to save time in the negotiations and structure information on the claims of other participants, thereby highlighting the participants with overlapping interests.

As for the technique of "conflict mapping", it has been applied as follows : all participants were grouped on the basis of kinship. Subsequently, the participants discussed the inheritance of property rights within their "branches" in the family tree. Thus, it creates some principle or the best way to solve this situation. The logic of distribution of the property becomes common and open, helping to reduce tension between the parties. For example: ".. the problem ceased to exist when all the participants were drawn and it became clear, who is related to whom, after that it became clear to everyone who gets what and why". The second version of the application "conflict mapping" is moving not from kinship, but from from the item (point of the will). As a result of this there appeared some micro-groups of participants, interested in obtaining the same item, and these groups held separate negotiations. This suggests that visualization helps to identify the optimal way to resolve the situation, sets the principle of acting which becomes common for all participants and, as a consequence, changes the attitude from competition to cooperation.

All this allows us to draw the following conclusions:

1) using visualization techniques by negotiators facilitates productive resolution of the contradiction due to its formulation: in 7 out of 7 cases of use of visualizing techniques in the negotiation process was the contradiction was articulated by the participants: the participants can articulate the main problem, the main difficulty of the situation, identify each other's interests and goals, analyze the gap.

2) using visualization techniques by the negotiators affects the subjective perception of a conflict situation and contributes to change of attitude from confrontation to cooperation: in 7 out of 7 cases after use of visualization techniques the participants, demonstrated attitude of cooperation ;

3) using visualization techniques by the negotiators affect the productive outcome of the negotiation process : in 5 out of 7 cases of use of visualization techniques, the participants reached an agreement ;

4) if the negotiators do not use visualization techniques, the attitude of participants to each other can be both cooperation and confrontation;

5) signs of registered contradictions are the following : analysis of the gap by the participants, formulation of the key problem, difficulty; evaluation of one's own and the opponents' resources; identification of goals and interests of the negotiating parties.

In addition, the experimental study showed that the technique of "conflict mapping" facilitates finding optimal solutions to the situation through (1) agreement on the key principle, which the cooperation will be based on, and (2) grouping the participants of the negotiation process, identification of characters with intersecting intentions. The "tables" technique helps to save time in the negotiations and structure information regarding claims of other participants, thereby highlighting the participants with overlapping interests.

So, the experiment showed that visualization helps participants to implement the technology of negotiations. The ability to use objectification technique makes it possible to overcome the attitude of confrontation and move to the joint search of the solution, beneficial for both parties. This conclusion is an important step in the search for an answer to a typical question to trainers on principled negotiations – we understand and like *what* you say, but *how* is it done?

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Техники визуализации
в переговорном процессе

Ю.С. Кет[а], Т.И. Юстус[б]

[а]*Красноярская университетская гимназия «Универс» № 1*
Россия, 660001, Красноярск, ул. Корнеева, 50
[б]*Сибирский федеральный университет*
Россия, 660041, Красноярск, пр. Свободный, 79

Переговоры по интересам – наиболее эффективная модель разрешения конфликтов. Этот подход к переговорам с необходимостью требует кооперативного взаимодействия участников. Однако вопрос о средствах организации кооперации остается открытым. В статье описаны техники визуализации, применимые в переговорном процессе, и показаны их возможности для эффективной реализации технологии ведения переговоров. Экспериментальное исследование показало, что визуализация способствует продуктивному разрешению противоречия за счет его оформления и обеспечивает смену установки участников с конфронтации на кооперацию.

Ключевые слова: переговоры, кооперация, конфронтация,техника визуализации, коммуникация в переговорах.