

Foundation of Subjective Confrontation Analysis

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Abstract

The purpose of the paper is to introduce a foundation of subjective confrontation analysis of negotiation. Negotiation is something that we do every time and happens in every aspect of our life. The fact that in negotiation process each side can have different aims and interests often give some potential for conflict.

As a foundation of subjective confrontation analysis of negotiation, we first identify negotiation as reciprocal proposals of positions and threats by two characters who are involved and share a common frame on which they negotiate. Inconsistency between the proposed positions may lead them to face dilemmas to be resolved in order to achieve agreement. Next, we formally define three types of dilemmas that might arise in such negotiation in terms of dramatic model. Then, after proposing a new theoretical framework to resolve one of those dilemmas, we will apply the concepts of dramatic model for analyzing the conflicts that arise in a river pollution case in Indonesia. Finally, we will discuss its findings and ideas for further research.

Keywords: confrontation analysis; subjective frame; negotiation; dramatic model

1. Introduction

Negotiation is part of our life as a social human being. We propose one position to the other party, and if accepted, the negotiation process will end in cooperation. But, if no one accepts the others' position, it will end in conflict. The process of negotiating has cooperation and potential conflict in the same time. This is because conflict implies the possibility of cooperation and vice versa.

In negotiation, the involved parties may decide what they want and guess what others will want. Then do the best they can, given what they think the others will do. In the process, however, they are often to face dilemmas. These dilemmas show that irrational players will do better than rational ones. For example, pollution problems are many-person Prisoner's Dilemmas, e.g., each party benefits from polluting, but if all pollute, all stakeholders will get worse result.

Dramatic model of negotiation tries to analyze the dilemmas of rationality and to argue how they affect people. It recognizes that when facing one or more of these dilemmas, people feel and express emotion, positive or negative, depending on them. The dilemmas motivate them to redefine the situation they face by re-examining their beliefs and values. Dramatic model of negotiation enables us to understand the process and the rational-emotional confrontation between what we and the other parties want.

Section 2 briefly introduces the theoretical framework of dramatic model and Section 3 rigorously formulates three types of dilemmas that may arise in such conflict. Section 4 explores an environmental issue, i.e., the Citarum River pollution case in Indonesia by applying the framework. Section 5 discusses its findings and ideas for further research.

2. Theoretical Framework

2.1. *Dramatic Model of Negotiation*

Dramatic model of negotiation formulates negotiation process as a drama, focusing on its pre-play stage like lobbying, persuasion, and behind-the-scenes work before the final decision is achieved.

While dramatic model basically shares a common framework with game theory, there are some essential differences. Game theory, which is often used to analyze conflict, is fundamentally interested in the final decision on what strategy should be taken. It focuses on analyzing the outcome of the conflict, i.e., finding out what rational action should be chosen if all players have same perspective of the situation. In this case, rational action means action to maximize payoff.

On the other hand, drama theory is basically concerned with the pre-play stage of how such a decision is agreed. The dramatic model of negotiation looks at negotiation process as a process where the involved characters use their resources through the pre-play stage to reach some agreement, which is called a dramatic solution. This process consists of five stages, i.e., scene-setting, build-up, climax, resolution, and dénouement, as seen in Figure 1.

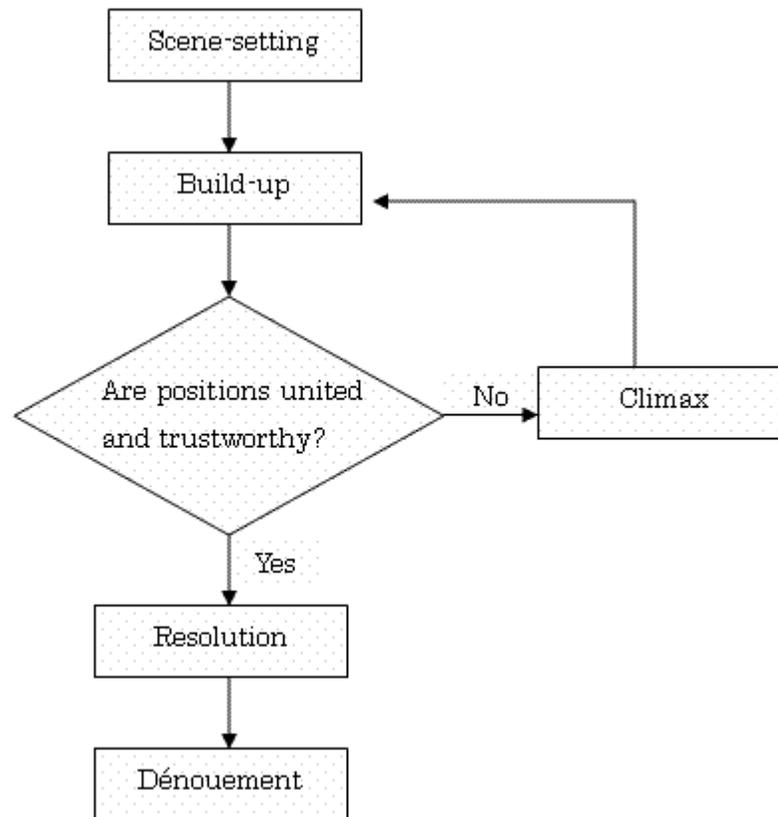


Figure 1 Dramatic Model of Negotiation (Source: Howard, 1994a)

(1) Scene-setting stage:

At scene-setting stage, each character identifies decision situation he/she faces and describes it as a non-cooperative game in terms of available strategies and preferences. It is assumed that in this stage there exists a set of possible frames. A frame is a character's interpretation of current situation from his/her own viewpoints.

(2) Build-up stage:

Scene-setting stage is followed by build-up stage. This paper currently assumes that in this build-up stage the different frames will 'normally' ends with a common reference frame. Then, both characters share the same and common frame and try to communicate their positions referring to it. Position means a particular future in the common reference frame that a character persuades others to accept. Though it is certainly interesting to analyze how the persuasion of positions will go if the characters still have their own subjective frames, we cannot argue this point yet in this paper.

(3) Climax stage

This stage starts if there is at least one character who is not satisfied with the current common frame and tries to change this frame. In this case, there is no same position in the current

common frame, or even if all adopts the same position, that position may not be ‘trustworthy’ – it means that, at least for one character, there is a possible preferred move from that position. On the other hand, if the positions are united and trustworthy, then no dilemmas occur and the characters move from the build-up stage to the resolution stage.

(4) Resolution

At this stage the pre-play ends up, though the agreement on the position does not necessarily imply a happy end. It could also be a tragedy.

(5) Dénouement

Resolution stage is followed by dénouement stage in which the agreement is obtained in pre-play communication is actually implemented. Due to the on-going nature of negotiation process, this stage may lead to the next scene-setting stage.

2.2. *Process of Negotiation*

Among the stages of the dramatic process, the most crucial are the build-up and climax stages. At the stage of build-up, the characters are sharing the problematic situation as a frame and proposing the desired future as their position. It may also include fallbacks – options that the character threatens if his/her position is not accepted by others.

In the following arguments, to describe the negotiation process, we assume there are two characters, i and j , and focus on i 's behavior, though a symmetric arguments are applicable to character j . Position of character i consists of an action character i will commit and requirement on j 's action to it.

At the build-up stage, the two characters are assumed to reciprocally propose positions. However, since each character in general, proposes his/her position independently, it is often for i to persuade j to abandon j 's position and to follow i 's position. Hence, if character i believes that character j will not follow i 's position, i may issue a threat on j . Responding to the position and threat of i , j then may re-propose his/her new position and threat. In this way, both characters repeat their proposal reciprocally and heat up to reach climax.

By summarizing the above, we formulate i 's position and threat as follows:

‘I (character i) will do A and you (character j) should do X , otherwise I (character i) will do B ’. We call (A, X) as i 's position and B is i 's threat. Of course, A and B are strategies available for character i , while X is a strategies available for j . In a similar way, we define j 's position and threat as ‘I (character j) will do Y and you (character i) should do C , otherwise I (character j) will do Z ’. We call (C, Y) is j 's position and Z is j 's threat. C is strategies available for character i , while Y and Z are strategies available for j . It should be noticed that for avoiding confusion, we assume that strategy on the left hand side of every position represents a strategy available for character i and that on the right hand side shows a strategy available for character j .

Furthermore, a pair of threats by both characters, (B, Z) in the above case, is called the threatened future. It implies a future state which will become reality if both characters implement their threat.

The climax stage is not realized if the proposed position is accepted by the counterpart accepts as trustworthy. Then the position has settled down as a dramatic solution. In the dramatic model with two characters, dramatic solution is equivalent to Nash equilibrium (Kijima, 2005a, 2005b). Nash equilibrium is a most well known concept of rationality for non-cooperation game. A pair of strategies is Nash equilibrium if and only if each character has no incentive to change his/her strategy, as far as the counterpart does not change his/her strategy. Once Nash equilibrium is attained, then both characters have no incentive to deviate from it. In this sense Nash equilibrium illustrates an aspect of rational behavior of the characters.

In the real negotiation, however, positions and threats are often proposed regardless of Nash equilibrium. If the positions are different from Nash equilibrium they may be seen as irrational, but it seems rather essence of negotiation that the characters claim their positions and threats as ad balloon with assuming their alternations afterwards.

3. Resolution of Three Dilemmas

If the positions are without credibility and/or the threats are not effective then some kinds of dilemmas happen. Then, the characters increase their effort to resolve the dilemmas by re-writing the interaction.

Bryant (2003) identifies six types of dilemma, namely, those of cooperation, trust, positioning, threat, deterrence (rejection), and inducement (persuasion). The former three of them come from conflicts caused by inconsistency of the characters' positions, while the latter three happen due to inconsistency among the positions and threats.

One of the main contributions of this paper is to formulate the former three dilemmas and argue under what conditions they are resolved. Let (A, X) and B be a position and threat of character i , respectively, while (C, Y) and Z be a position and threat of character j .

We say i faces dilemma of cooperation if j cannot believe with credibility that i will really carry out i 's position. Formally, i faces dilemma of cooperation if there is a strategy A' available for i such that (A', X) is more preferable to (A, X) for i , that is, if we have

$$(\exists A') \left((A, X) \prec_i (A', X) \right).$$

The condition implies that i realizes that there is a more preferable outcome by taking another strategy different from A , say, A' , as far as j takes strategy X .

Next, we say i faces dilemma of trust if i cannot trust that j 's announcement of acceptance of i 's position. Formally, i faces dilemma of trust if there is a strategy X' available for j such that (A, X') is more preferable to (A, X) for j , that is, if we have

$$(\exists X') \left((A, X) \prec_j (A, X') \right).$$

This condition implies that i does not propose a future attractive enough to j , so that j has no incentive to follow i 's position and hence even if j promises to carry out i 's position, i cannot trust j 's commitment in it.

Finally, we say that i faces dilemma of positioning if i finds that j 's position is more attractive than i 's position for i . Formally, i faces dilemma of positioning if (C, Y) is more preferable to (A, X) , that is, if

$$(A, X) \prec_i (C, Y).$$

This dilemma happens because i might have some reasons not to accept j 's position, for example, i may see that j 's position is unrealistic for i to apply, even though it is desirable.

Kijima (2005b) gives a necessary and sufficient condition for realizing a dramatic solution in terms of dilemma of cooperation and dilemma of trust. That is,

Proposition 1:

Let (A, X) be a position of i . Then, i does not face dilemma of cooperation nor dilemma of trust if and only if (A, X) is Nash equilibrium. Then, (A, X) is implemented and the negotiation finishes.

Now we relate the dilemmas of cooperation and trust with that of positioning. First we introduce the following three conditions to resolve the dilemma of positioning of character i .

a) Character i does not face dilemma of cooperation, that is,

$$(\forall A') ((A, X) \succeq_i (A', X))$$

b) Character j faces dilemma of trust, that is,

$$(\exists A') ((C, Y) \prec_i (A', Y))$$

c) Character i must show that for all the strategies available to i , i really do want j to do the strategy i proposes, that is,

$$(\forall A') ((A^*, X) \succeq_i (A^*, Y)).$$

It means that i , if possible, must rearrange its preference to show that i really prefer j to do j 's action in i 's position (or X) rather than j 's action in j 's own position (or Y). The next is our main theoretical claim of this paper:

Proposition 2

If we have the three conditions, then the positioning dilemma is resolved.

The condition b) of the proposition means that to solve the positioning dilemma j must trust i irrationally. In this sense the proposition implies that resolving i 's dilemma of positioning and j 's dilemma of trust is not compatible. In other words, if irrational behavior of j is expected, then i may resolve the dilemma and take a rational behavior when the conditions a) and c) are satisfied.

4. Application to Citarum River Pollution Case

4.1. General Description

According to the data published by Asian Development Bank (2004), the Citarum River basin measures over 11,000 km² and the Citarum River is about 270 km in length. More than 9 million people, including the population in the provincial capital of West Java, Bandung, live in the basin. Three large, multipurpose reservoirs from upstream to downstream – namely Saguling, Cirata, and Jatiluhur – in the basin, regulate the water flow and are the main source of water supply in Jakarta. The Citarum River can carry about 12.95 billion m³ annually, consisting of 6 billion m³ from the Citarum River and 6.95 billion m³ from its tributaries. Currently, more than 85% of the water is used for irrigation and the rest is used for domestic and industry water supply. Due to pollution and the rapid development in the basin, water shortage is expected in near future.

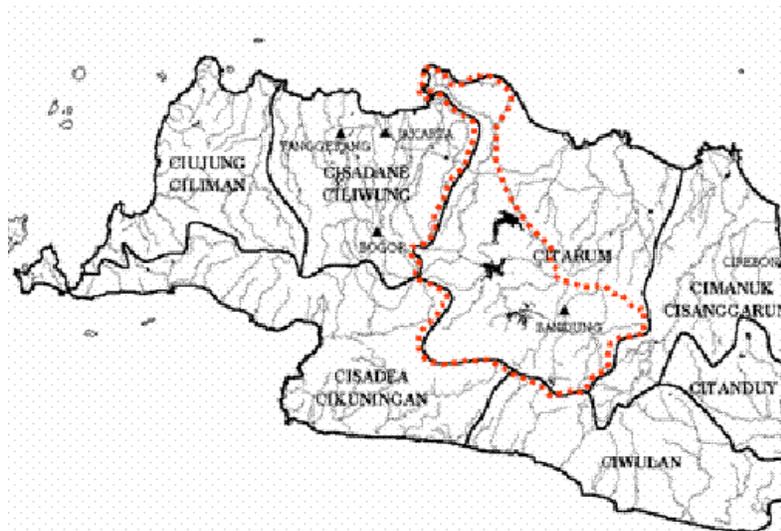


Figure 2 The Citarum River basin

4.2. *The Pollution Problem*

The upstream of the Citarum River basin has suffer from sever environmental problems, namely, those related to soil erosion, heavy sedimentation, poor water quality and heavy pollution loads, improper disposal of garbage and other solid waste, water shortage in the dry season, flooding in the rainy season, over extraction of groundwater, liquid waste sewage from factory, and improper land use.

The pollution of surface water upstream of the Saguling Reservoir has reached an alarming level (ADB report, 2004). The concentrations of organic pollutant, pathogenic bacteria, dissolved oxygen, ammonia, and some heavy metals exceed the water quality standards, especially in the dry season.

4.3. *The Stakeholders*

There have been a lot of researches and seminars held to resolve the condition of Citarum River, especially about the pollution problem, but it is not significantly improved. This paper tries to look at the situation from different point of view. We started from a holistic believe that if every

stakeholder of the Citarum River, which involved in to the pollution problem, has a commitment to work together, the problem can be solved. The main stakeholders who involved in this case are upstream people and regencies, downstream people and regencies, textile industries, and environmentalist.

In this paper, in order to employ the dramatic approach to the Citarum River pollution case, we use a simplified representation of the stakeholders. The model will see the conflict between both upstream and downstream regencies, which we called “Local Government”, and “Textile Industries”. This paper analyzes the interaction between these “characters”. We choose this conflict because, in our scenario, one of the main problems is due to the fact that the local government accuses the textile industries dump untreated liquid waste from their factories to the river. However, because economic constraints, the industries still have difficulties to provide an adequate in-factory waste treatment systems.

4.4. Formulation

Assume that the textile industries and local government have a same frame represented by:

Table 1 Frame shared by the textile industries and local government in Citarum River pollution case

Textile Industries Local Govt.	Do routine maintenance (<i>X</i>)	Improve the WWTC* (<i>Y</i>)	Enforce strict regulation
Invest new tech. but expensive (<i>C</i>)	4, 9	7, 7	2, 8
Support environment program (<i>A</i>)	5, 6	8, 4	3, 5
Dump untreated wastes	6, 2	9, 1	1, 3

*WWTC: Waste Water Treatment Center is a center owned by the government to treated the liquid waste from textile industries.

Here we assign the payoffs by examining published documents and interviews with the stakeholders. Textile industries (TIs) and local government (LG) are in the pre-play stage to negotiate on what actions are to do to reduce or eliminate the pollution on Citarum River which come from factories liquid waste. Three available strategies for TIs are: (1) to invest a new cleaner but expensive technology to treat the waste; (2) to support environmental programs such as those from local government, local people, environmentalist NGO, or even from the industries themselves; and (3) to dump the untreated waste to the river, due to the un-care attitudes toward environment, financial infeasibility to provide adequate technology, or obsolescence of current technology.

On the other side, strategies for LG are: (1) do routine maintenance like the current annual governmental working program, such as to remove mud from the river bottom, to clean the river from solid waste, e.g., plastics, papers, etc., or to do standard maintenance on the WWTC; (2) to improve the WWTC, both the human resources and the technology; and (3) to enforce strict regulations which would give penalties for any factory polluting the river. (It is not easy because it could make some of the factories to be closed and the LG would have new problems with unemployment.)

The position which proposed by the characters are:

(a) Textile Industries’ position

“We will support any environmental program (e.g., by donating money; educating people; made recycle program by accepting specific product, i.e., plastic bottles, papers, etc.; build small incinerator to burn the domestic garbage from neighborhood; upgrade our waste treatment facilities) so that you (Local Government) should do routine maintenance. Otherwise, we will continue to dump untreated waste”.

(b) Local Government’s position

“We will do improve the Waste Water Treatment Centre so that you (Textile Industries) should also invest on your in-factory cleaner technology waste disposal system. Otherwise, we will enforce strict regulations.

5. Discussion

5.1. Analysis of the Citarum River Pollution Case

From analysis of the matrix above, we know that TIs face dilemma of cooperation but does not face dilemma of trust. On the other hand, LG faces both of the dilemmas.

Furthermore, we know that TIs face dilemma of positioning because TIs prefer the LG’s position to TIs’ own position. But TIs cannot just easily accept LG’s position, even though it is desirable, because, for example, due to the economic consideration, it seems unrealistic for TIs to implement the “invest on expensive new cleaner technology to treat the waste” strategy.

5.2. Resolution of Dilemma of Positioning

Let us denote TIs and LG by i and j , respectively. According to Proposition 2, in order to resolve the dilemma of positioning, we first have to resolve the i ’s dilemma of cooperation. That is, we need $(\forall A') \left((A, X) \succeq_i (A', X) \right)$.

If TIs can change its preferences between the “support the environment program” and the “dump untreated wastes” strategies, for example, by showing that TIs now are so ecology oriented that make environmentally friendly products or have policies towards preservation of environment, Table 1 will become Table 2.

Table 2 TIs become eco industries

Textile Industries Local Govt.	Do routine maintenance (X)	Improve the WWTC (Y)	Enforce strict regulation
Invest new tech. but expensive (C)	4, 9	7, 7	2, 8
Support environment program (A)	6, 6	8, 4	3, 5
Dump untreated wastes	5, 2	9, 1	1, 3

Here TIs change the preference from 5 to 6 for the “support environment program” strategy and from 6 to 5 for the “dump untreated wastes”. It means that TIs switch the preferences of those strategies to eliminate TIs’ dilemma of cooperation. Then, TIs do not face dilemma of cooperation.

The second condition requires that LG should face dilemma of trust. By analyzing either of the matrixes above, we see that LG does have dilemma of trust. It means that if LG implement its position to improve the WWTC, TIs can easily changes their strategy to other strategies, i.e., the “support environmental program” or “dump untreated waste” strategies, which are more preferable.

The last condition in the context of our example means that i prefer j to choose the “do routine maintenance” strategy rather than “improve the WWTC” strategy. But from Table 2, we can see that for every strategy i has, the Y (or “improve the WWTC” strategy) is more preferable to X (or “do routine maintenance” strategy) for i . In this case, the condition does not hold.

Suppose TIs switch the preferences over X and Y so as to have Table 3. Then, TIs can resolve the dilemma of positioning by making all of the three conditions hold.

Table 3 TIs switch its preferences over X and Y

Textile Industries Local Govt.	Do routine maintenance (X)	Improve the WWTC (Y)	Enforce strict regulation
Invest new tech. but expensive (C)	<u>7</u> , 9	<u>4</u> , 7	2, 8
Support environment program (A)	<u>8</u> , 6	<u>6</u> , 4	3, 5
Dump untreated wastes	<u>9</u> , 2	<u>5</u> , 1	1, 3

By analyzing Table 3, especially the underlined preference number, we can see that now TI already resolves the dilemma of positioning.

After succeeding in resolving the positioning dilemma, TIs strategy to support environmental program is more likely to be implemented. Now TIs has a position more preferable for TIs than LG’s position, even though TIs still have cooperation dilemma for this position to be believed by LG.

5.3. Further Research

As theoretical contribution, this paper proposes three conditions to resolve positioning dilemma. The conditions are (1) that the character i does not face cooperation dilemma; (2) the other character j – does have trust dilemma; and (3) the character i can show that i really prefer j to do j ’s action in i ’s position rather than j ’s action in j ’s own position.

As far as the application is concerned, this paper shows how a character involved in a conflict situation, in this case, textile industries, can resolve the dilemma of positioning by changing its own preferences.

Speaking of subjectivity, TIs change their own preferences in their own subjective framework, regardless what LG see about the current situation. Subjective framework means a framework that could be not shared by the other character. We need more detail analyses regarding this subjectivity for further research.

Also, we want to find the relationship between these dilemmas of collaboration (dilemma of cooperation, dilemma of trust, and dilemma of positioning) with the other dilemmas, namely dilemma of threat, dilemma of rejection, and dilemma of deterrence.

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