Perspective Taking Representation of Bilateral Negotiation: Total Ignorance or Partial Ignorance of the Other's Perspective?

Ling-ling Wu
Assistant Professor, Department of Information Management
National Taiwan University

ABSTRACT

If negotiators are able to take the perspective of the other side, efficient settlements of negotiation are more likely to be achieved. The purpose of this study is to investigate the process of perspective taking in the situation of bilateral negotiations. The perspective ignorance view argues that negotiators totally ignore the perspective of the other side because information asymmetry is not included in their understanding of the negotiation situation. However, information asymmetry is not the only perspective information. In this paper, the weak version of perspective ignorance view proposes that people only partially ignore the perspective of the other side by retaining perspective information other than information asymmetry, such as the different position of the other side, and the possible range of solutions acceptable by the other side. The representation of this partial perspective taking is called the "naïve perspective taking schema".

Two experiments were conducted to examine this weak version of perspective ignorance view. First, the results showed that in bilateral negotiations, the mid-point was the price offered by the buyer to acquire a company with an uncertain value. This result suggested that the negotiators were aware of the different positions of both sides because they tried to compromise between the opposing positions. Secondly, the buyer gave in to the position of the seller to different extents in different profit situations. When the buyer expected to make more profit, they were willing to offer higher prices to achieve an agreement even though the expected value of the negotiated commodity was the same. This result suggested that the buyer was aware of the range of alternatives acceptable by the seller. Thirdly, feedback information did not reduce the bias produced from ignoring information asymmetry. However, feedback information indeed reduced the bias produced from the profit situation effect as formerly stated. The result suggested that there were different kinds of perspective information other than information asymmetry because feedback information has different effects on different kinds of perspective information.

Keywords: negotiation, perspective, information asymmetry, profit situation effect, schema

Ⅰ. Introduction

Perspective taking is a crucial cognitive process in bilateral negotiation situations. The negotiators' representation of the negotiation situation involves two components: the ontological information reflect ing his own understanding of the negotiation situation, and the perspective information reflecting the thinking process of other side. Through simulating the other perspective in their own representation, the negotiators can predict the decision-making behavior of their opponents in order to figure out a profitable negotiation strategy. The closer the simulated perspective information is to the actual thinking process of the other side, the more likely the negotiation strategy is beneficial for the negotiators. Therefore, the process of perspective taking and the content of perspective information deserve rigorous studies for better understanding of the bilateral negotiation process.

Nevertheless, perspective taking has been a controversial issue in the study of bilateral negotiation. There are two distinctive points of view accounting for perspective taking: the normative hypothesis and the perspective ignorance hypothesis. According to the normative hypothesis, negotiation is perceived as a competitive perfect market, where negotiators generate Pareto efficient economic allocation by maximizing their own expected utility (Friedman & Savage, 1948). The negotiators behave perfectly rationally by taking every single piece of relevant information into their consideration. In another word, the normative view assumes that negotiators entertain a parsimonious representation of their opponent and effectively use the relevant perspective information to construct the optimal negotiation strategy.

On the other hand, the perspective ignorance hypothesis argues that people simplify the negotiation situation by ignoring the perspective of their opponent. The perspective ignorance hypothesis suggests that negotiators project their own knowledge onto their representation of the opponent and hence assume that their opponent shares the same information, and the same perspective as themselves. In this view, people are highly self-centric such that the process of perspective taking does not really exist.

As discussed in the previous text, the normative view and the perspective ignorance view are extremely different in terms of the process of perspective taking. The normative view argues that people rationally take the perspective of the other side in order to maximize their own utility in the negotiation process. But the perspective ignorance view argues that people simplify their representation of the negotiation situation by totally ignoring the other perspective.

Accordingly, these two views make different predictions about negotiators' strategy when the phenomenon of information asymmetry is involved in bilateral negotiations. Information asymmetry refers to the situation where one side of the negotiation is better informed than the other side. For example, in the process of a transaction, the seller knows the true value of the negotiated commodity and the buyer does not. The normative view predicts that the seller will make price offers much higher than the true value because the seller knows that the buyer does not know the true value. That is, the seller will maximize his profit by taking advantage of his better-informed advantage. At the same time, the less-informed disadvantage

will put the buyer on guard and will become a concern for the buyer when evaluating the potential price of the commodity under uncertainty.

On the other hand, the perspective ignorance view predicts that both sides of negotiation ignore the impact of information asymmetry and act as if other people share the same information as themselves. The study of Samuelson & Bazerman (1985) shows that the seller, who is better informed and knows the true value of the commodity, offers prices around the true value of the commodity. That is, the seller acts as if the buyer knows the same information and hence does not benefit from his information advantage. In turn, the buyer, who does not know the true value of the commodity, offers prices according to the expected value of the commodity as if the seller does not know the true value. The buyer also does not take information asymmetry into account by ignoring his less-informed disadvantage.

However, the assumptions of both views seem too strong in the light of related research results. The optimal assumption of the normative view is not supported by the empirical results in the behavioral literature, which have consistently shown that people use simplified strategies in decision making, that systematically deviate from the optimal solution (Johnson & Payne, 1985; Tversky & Kahneman, 1974). The assumption of the perspective ignorance view also seems too strong for the following two reasons. First of all, ignorance of information asymmetry does not necessarily mean total ignorance of the perspective of the other side because there might involve other aspects of information in perspective taking, such as the position of the other side or possible range of solutions acceptable by the other side. Secondly, empirical studies of diverse disciplines have shown that people do take different perspectives at least to some extent.

Information asymmetry, if it is involved, might be only part of perspective information in the representation of the negotiators. Information asymmetry is certainly highly relevant for making rational negotiation strategy. However, it is not uncommon that people ignore relevant information and pay attention to less relevant information. In the literature of problem solving, research results suggest that superficial information that is irrelevant to the correct solution, play a crucial role in the representation of problem solvers (Ross, 1984).

Moreover, a fair amount of research findings suggest that people possess the ability to take perspective of others and use this ability spontaneously. Studies of developmental psychology show that taking perspective of other people seems to be a basic skill that human beings develop during early stages of our lives. By the age of 2, infants begin to show empathy by comforting others (Azhn-Waxler, Robinson & Emde, 1992). Moreover, 2 year-olds also begin to play “pretend” games and attempt to fool with others. To be able to these, infants have to understand the emotional states and beliefs of others (Leslie, 1987, Dunn, 1991). In addition, Piaget (1969) argues that in the concrete operational stage, children are able to take multiple aspects of a situation into account because they become less egocentric. In conclusion, young children have already developed the ability to take perspective of others.

The research results of communication also suggest that people are able to take the knowledge or information of others into their consideration (Clark & Murphy, 1983; Wills & Moore, 1996; Baston, Early & Salvarani, 1997). During the process of communication, speakers restate their conversation according to the response

(Issacs & Clark, 1987; Krauss & Fussell, 1991) or knowledge background of the listeners (Clark & Schaefer, 1987; Fleming & Darley, 1991). To do these, speakers should be able to view the conveyed information through the vantage of the listeners. Moreover, the instruction to take a new perspective lead subjects to invoke implicit information un-recallable from the original perspective (Anderson & Pichert, 1978). All the above research findings converge to suggest that people are capable of taking different perspectives and need to do that to adapt to their environment.

Nevertheless, the assessment of other's knowledge could be biased by the assessor's own knowledge, especially when information asymmetry is involved. The phenomena of the "curse of knowledge" illustrates that better-informed people tend to behave as if others also have access to the privileged information (Camerer, Lowenstein & Weber, 1989). The study of Nickerson, Baddeley & Freeman (1987) has shown that people who already knew the answer to a problem overestimated the percentage of their peers who could accurately solve the problem. Moreover, hindsight effect shows that after subjects know the outcome of an event, they overestimate their ability to predict the occurrence of the outcome (Fischhoff, 1975, 1977).

The study results discussed so far seem to suggest that people are able to take different perspectives and accurately assess the information possessed by others to some extent, but the knowledge assessment through perspective taking does not include information asymmetry. Some perspective information, such as information asymmetry, tends to be ignored or "contaminated" (Wilson & Brekke, 1994), but some other perspective information seem to be more robust and less likely to be substituted by assessor's own knowledge. In particular, it seems that people may have entertained some general knowledge about perspective taking when entering the negotiation situation. And this general knowledge of perspective taking may significantly affect how people assess knowledge of others. The research results of Bassok, Wu & Olseth (1997) have shown that general knowledge of division affect how people interpret permutation problems and hence influence subjects' problem solving strategy.

Similarly, the general knowledge of negotiation, which might involve some simplified form of perspective taking, may be used as the conceptual basis for negotiators to interpret the thinking process of the other side. For instance, the study of Thompson & Hastie (1990) suggested that people enter negotiation interpreting the negotiators occupy two opposing positions on a single dimension, say, the price of the commodity under negotiation. That is, the negotiators are aware of the different positions of both sides. And this understanding, generated from general knowledge of negotiation, may constitute part of the perspective information in negotiators' representation of bilateral negotiations.

Besides awareness of contradictory positions, the negotiators also understand that any solution has to be accepted by both sides of negotiation in order to achieve an agreement. And there exist socially shared knowledge concerning acceptable range of offers from parties of opposing positions. Empirical research results have shown that fairness, instead of profit maximization, serves as the basic principle for allocating resources among people (Kahneman, Knetsch & Thaler, 1986; Ochs & Roth, 1989). The social norms such as "equality" or "dual entitlement" denote the commonly accepted allocation norms.

Therefore, during the process of bilateral negotiations, negotiators may look for strategies that can generate a solution acceptable by both sides in order to compromise the opposing positions, instead of maximizing their own profit or totally ignoring the other's perspective. By doing so, there could be at least two pieces of perspective information involved in the naïve representation of the negotiators: the opposing position of the other side and a range of offers acceptable by the other side, which will be named as the naïve perspective taking schema hereafter in this paper.

It is argued in this research that the naïve perspective taking schema may have become part of naïve understanding of bilateral negotiation and may be used by the negotiators to as the conceptual base to take perspective of the other side during the process of bilateral negotiation. The negotiators might, as suggested by Samuelson & Bazerman (1985), ignore the fact of information asymmetry. Nevertheless, the negotiators might take the perspective of the other side through employing the naïve perspective schema and hence try to compromise the opposing positions through using fair allocation principles in order to reach an agreement. In another word, negotiators probably do not "totally" ignore the perspective of the other side. Instead, they "partially" ignore some information possessed by their opponent. The purpose of this research is to examine this weak version of perspective ignorance view, which argues that the naïve perspective taking schema as well as ignorance of information asymmetry may affect negotiators' perspective taking process and bargaining strategies.

Let us take the example used in the study of Samuelson & Bazerman (1985) to discuss how the naïve perspective taking schema could be employed in bilateral negotiation situation. If the value of a commodity under negotiation is uncertain to the buyer but already known to the seller, what price would the less-informed buyer offer to acquire the commodity? According to the strong version of perspective ignorance, the buyer will ignore information asymmetry and assume that the value of the commodity is also uncertain to the seller. Therefore, the buyer will offer the expected value to negotiate with the seller.

On the other hand, the weak version of perspective ignorance argues that people are aware of and concerned about the position of the other negotiator. Therefore, the buyer compromises the different positions by giving in to the position of the seller in some situations. Motivation may direct people to allocate resources in a way deviating from the equality principle. Diekmann (1997) has shown that an implicit justification enables people to hide their self-serving motivation and allocate more than a fair share to one's own group than to oneself. So, when the buyer has high motivation to settle an agreement, he would give in more to the opposing position more than those who have low motivation. Therefore, when the buyer has low motivation to settle an agreement, he would offer the expected value for the commodity, but when the buyer has high motivation to settle an agreement, he would offer a price higher than the expected value.

Possible profit resulted from an agreement could motivate negotiators to achieve an agreement. For the seller, the profit is sale price minus true value. However, for the buyer, the profit comes from some other forms, such as his own extra work on the commodity. For instance, the value of a commodity is 30 dollars, and the buyer has the ability to increase it to 40 dollars. So the profit for the buyer is

10 dollars if the buyer acquires it by 30 dollars. In particular, different type of profit may motivate the buyer differently. The fixed amount of profit might motivate people to a less degree than varied amount of profit. If the profit from a settled agreement is fixed, then the buyer will not have motivation to offer a price beyond what the equality principle engenders. On the other hand, if the amount of profit depends on the uncertain value of the negotiated commodity, then negotiators might have the motivation to acquire the commodity in order to try their luck. When the value of the commodity is high, then the possible profit of the buyer will be proportionally high. Therefore, the varied profit situation may encourage subjects to acquire the commodity and hence make the buyer willing to give in more to the position of the seller.

It seems that high motivation of the varied profit situation could be confounded with high utility. Therefore, the expected profit of the fixed profit and varied profit situations will be controlled the same, such that the expected value of the commodity for the buyer will be the same for both kinds of profit type conditions. Through the control of expected value in these two profit type conditions, different predictions of the strong and weak versions of perspective ignorance can be testified. If the less informed buyer totally ignores the perspective of the seller, then he will offer prices based on expected value for both profit conditions because the true value of the commodity is uncertain in both conditions. However, if the less informed buyer only partially ignore the perspective of the seller and use the naïve perspective taking schema to represent the negotiation situation, then the buyer will have higher motivation to achieve an agreement and will give in more to the seller's position in the varied profit condition. Therefore, the buyer will offer the expected value for the fixed profit condition and offer prices higher than the expected value in the varied profit condition.

Besides profit type, the effect of feedback may be used to differentiate different kinds of perspective information (i.e. information asymmetry vs. naïve perspective taking schema). The biases induced by ignorance of information asymmetry persisted even when feedback was provided through recurring transactions (Ball, Bazerman & Carroll, 1991). Feedback message, which provides information of true value, acceptance of the seller and asset gain or loss from the transaction, do not seem to remind the buyer of his information disadvantage.

However, the feedback information may be useful to reduce the higher amount of prices offered in the varied profit condition. As discussed in the previous condition, higher prices may be offered by the buyer in the varied profit condition in order to increase the chance of acceptance by the seller. However, higher price offer also implies higher risk for the buyer because the chance of getting a lemon is also increased. Feedback message should be helpful to lead subjects to see the possible risk of acquiring the commodity with high prices because it directly provides information against the buyer's perception of high profit. Therefore, the buyer will lower down his price offer in the varied profit condition when provided with feedback information. On the other hand, for subjects in the fixed profit condition, the expected value is offered as the negotiation price because of ignorance of information asymmetry. Therefore, feedback information will not have any effect on subjects in the fixed profit condition.

The variables of profit type and feedback information will be manipulated in

this study to investigate this weak version of perspective ignorance view and to explore what role the naïve perspective taking schema plays in the process of bilateral negotiation.

II. The Negotiation Situation

The negotiation problems used in Samuelson and Bazerman (1985) are adopted to serve as the experimental stimuli to test the three hypotheses described in the previous text. The negotiation problems involve two parties, the seller and the buyer of a target company. The target company is conducting some sort of investment such that the true value of the company is unknown due to the uncertain result of the investment. The possible values of the company ranged from 0 to 100 dollars per stock and the probability of all values were all considered equally likely. The task of subjects is to play the role of the buyer, whose task is to estimate the true value of the target company, and to decide a price to offer to the seller in order to acquire the company. The buyer has only one chance to offer price for the target company.

Please note that there exists information asymmetry in this negotiation problem. The seller knows the result of the investment before the bidding. But the result is not open to the public yet so the buyer does not know the true value of the company. In particular, the buyer knows the existence of information asymmetry.

The incentive for the buyer to acquire the company is that the buyer can make some profit out of the acquired company because the buyer side has better management skills. There are two kinds of profit, varied and fixed. In the varied version, the profit varies upon the true value of the company. For instance, the buyer can make 50% profit of the true value of the company once it is acquired. For example, if the true value of the company is 60 dollars, then the buyer can make it worth 90 dollars. On the other hand, if the true value of the company is 30 dollars, then the buyer can make it worth 45 dollars. The other type of profit is a fixed amount, say, 25 dollars, no matter what the true value of the company is. So, if the true value for the company is 60 dollars and is acquired by the buyer, then the company will be worth 85 dollars under the hand of the buyer. Similarly, if the true value of the company is 30 dollars, then the buyer can make it worth 55 dollars.

III. Predictions of the three hypotheses

According to the normative view, the buyer should take the information asymmetry into account and uses the optimal bargaining strategy. The rational way of reasoning for the fixed profit condition should be as followed:

> Supposed that the offer is 30 dollars, and the offer is accepted. Then the true value of the company must range from 0 to 30 dollars. And the average value of the company is worth 15 dollars since all the values between 0 and 30 are equally likely. Thus, the average value of the company under the management of the buyer is 40 dollars because the company is worth 25 dollars more in the acquirer's hand. The average profit for the buyer is hence 40-30=10 dollars.
>
> Supposed offer price is X, then the average profit can be calculated through the

following formula

$X/2 + 25 - X$ (1)

To make (1) no less than zero, X must be no more than 50. To maximize (1), X equals to 25. So, the optimal choice for the buyer is to offer 25 dollars.

The same reasoning is applicable to the varied profit condition.

Supposed that the offer is 30 dollars, and the offer is accepted. Then the true value of the company must range from 0 to 30 dollars. And the average value of the company is worth 15 dollars since all the values between 0 and 30 are equally likely. Thus, the average value of the company under the management of the buyer is 22.5 dollars because the company is worth 50% more in the acquirer's hand. The average profit will be negative, $22.5 - 30 = -7.5$ dollars.

Supposed offer price is X, then the average profit can be calculated through the following formula

$(X/2)*1.5 - X$ (2)

There is no positive X to make (2) greater than zero. That is, no matter what price offered by the buyer, the buyer will never make any profit in the varied profit version. So, the optimal choice for the buyer is to offer zero. The normative hypothesis predicts that the buyer will offer 25 dollars for the fixed profit condition and zero dollars for the varied profit condition.

As for the perspective ignorance hypothesis, people simply ignore information asymmetry and assume that other people share the same information as themselves. So, the buyer will ignore the fact that the seller knows the true value of the commodity. Therefore, the buyer will just calculate the expected value of the company. As a result, subjects should offer the same price for these two profit versions because the expected value is the same in both conditions, which is 50 dollars. Moreover, the average profit of these two profit conditions is the same, which is 25 dollars. Therefore, even if the buyer offers the price according to average value of the company under their own management, they should also offer the same price for both profit conditions. In another word, the perspective ignorance hypothesis predicts that the buyer will offer the same price for both fixed and varied profit conditions.

According to the simplified multiple perspective taking hypothesis, people are trying to compromise the conflicting perspectives of both sides in order to make some profit out of the agreement. In the fixed profit condition, the profit is always the same, so there is no extra power to pull the buyer towards the position of the seller, nor towards the position of the buyer. Therefore, the way to compromise between the conflicting perspectives will be somewhere in the middle of all possible values, which is 50 dollars. On the other hand, in the varied profit condition, the profit is contingent upon the true value of the company. That is, the higher the true

value, the higher the profit. So, if the offer price is high, then there is some chance for the buyer to acquire a high-value company and make a high profit out it. If the offer price is low, then there is no chance for the buyer to acquire a high-value company and high profit is hence not possible, either. Therefore, in the varied profit condition, there is an incentive for the buyer to yield in more to the position of the seller and offer higher prices. Even though the average value of the company is the same for both profit conditions, the buyer should have incentive to offer higher prices for the company in the varied profit condition then in the fixed profit condition. So, the simplified multiple perspective-taking hypothesis predicts that the buyer will offer around 50 dollars for the company in the fixed profit condition, but higher than 50 dollars in the varied profit condition.

As discussed in the previous text, the predictions of the three hypotheses are different regarding the price offered by the less informed buyer in the situation of bilateral negotiation. Therefore, experiments involving the bidding problems as described above will be conducted to examine these three hypotheses of perspective taking.

As a result, Smuelson & Bazerman (1985), proponents of the perspective ignorance hypothesis, found that buyers offer, in average, 50 dollars for a company with possible value from 1 to 100 dollars per stock. It could be the result of compromising between two opposing perspectives. That is, buyers offer 50 dollars could be due to their awareness of opposing positions of both sides instead of ignoring the position of the seller.

The bidding problem designed in the study of Samuelson & Bazerman (1985) states that the buyer has incentive to obtain an agreement because once the agreement is settled, the buyer has some chance to make profit out of the company. If no agreement is settled, there is no chance at all for the buyer to make profit. In particular, the profit can be manipulated as fixed and varied. Therefore, the bidding problems used in Samuelson & Bazerman (1985) can be adapted to test the effect of profit type.

If the buyer offers similar prices for both conditions of profit type, then the buyer must have totally ignore the perspective of the seller and evaluate the commodity from his own point of view. If the buyer offers different prices for conditions of profit type, then it is suggested that naïve perspective taking schema play some role in the process, and that the perspective of the seller is considered by the buyer, in an intuitive manner, though.

IV. Experiment I

A. Experimental Design

The objective of this experiment was to investigate three hypotheses regarding perspective taking in the bilateral negotiation situation. Subjects were asked to offer prices to acquire a company with uncertain value. They were told that they had 1000 wan (i.e. 10 million) NT dollars as their asset to acquire 18 different companies. Please note that in order to make the whole story sound natural, the currency will be New Taiwan dollars and the monetary unit will be ‘wan’, which means 10,000 in Chinese, because the experiment was done in Taipei, Taiwan. Each bidding was independent because each company is different. The dependent variable is the price

that subjects bid for acquiring the target company.

Two independent variables were manipulated in this experiment: Profit type and Feedback. The variable of Profit type had two levels: Fixed and Varied. In the Varied Profit condition, subjects were told that they would profit 50% of the true value of the company if the target company were acquired. On the other hand, in the Fixed Profit condition, subjects were told that when they acquired the target company, they would profit 25 wan NT dollars no matter what the true value of the company was. Given that the expected value of the target company was 50 wan NT dollars, the average profit in the Varied Profit condition is 25 wan NT dollars, which was the exactly same as the profit in the Fixed Profit condition. So, the Fixed Profit condition served as the baseline condition to be compared with the Varied Profit condition to see if subjects would give in more to the position of the seller, and hence offered higher prices in the Varied Profit condition.

As illustrated in the previous text, the three hypotheses have different predictions regarding how the less informed buyer would offer prices. The normative hypothesis predicts that subjects should offer 25 wan NT dollars for the fixed profit problems and zero NT dollars for the Varied profit problems. The perspective ignorance hypothesis predicts that subjects should offer the same for both conditions, which is 50 wan NT dollars. Lastly, the simplified multiple perspective taking hypothesis predicts that subjects will offer 50 wan NT dollars for the Fixed profit condition but more than 50 dollars in the Varied profit condition.

As for the Feedback variable, there were two levels: Feedback and No Feedback. In the Feedback condition, subjects were immediately given detailed information regarding the results of the bidding, including the true value of the company, whether the offer was accepted, the amount of profit or loss resulted from the bidding and the total asset left after each bidding. Conversely, in the No Feedback condition, no information was given to the subjects after each bidding. The No Feedback condition served as the baseline condition to see if the feedback condition would influence the prices offered by subjects.

The three hypotheses also had different predictions about the effect of feedback. According to the normative hypothesis, subjects might deviate from perfect rationality due to incomplete information. So, feedback information regarding the results of bidding should help subjects to approach the optimal price offer, which was 25 wan dollars for the Fixed Profit condition and zero dollars for the Varied Profit condition. On the other hand, the perspective ignorance hypothesis assumes that the effect of perspective ignorance, similar to knowledge curse effect, is resulted from human information processing mechanism, which uses simplified heuristics to make decisions. Therefore, feedback information should not affect the phenomenon of perspective ignorance and the average price offer of the buyer should be the same for conditions with feedback and without feedback (Ball, Bazerman & Carroll, 1991; Camerer, Loewenstein & Weber, 1983).

As for the simplified multiple perspective taking hypothesis, feedback information should provide emphasis regarding the risk of high price offers because they show subjects that many lemons are acquired due to risky price offering. Therefore, the feedback information should reduce the intention to offer high price

in the Varied profit condition, such that the difference between the Varied profit condition and the Fixed profit condition occurring in the No Feedback condition will be reduced in the Feedback condition. In conclusion, the simplified multiple perspective-taking hypothesis predicts that feedback information should help to put subjects on caution and hence reduce the difference between Varied profit and Fixed profit conditions.

Both of the two independent variables were between subject variables. For each of the two Profit type conditions, there were two Feadback conditions. Therefore, there were four conditions in total. For each of the four conditions, there were 18 bidding problems, which were displayed in six different investment stories. The content of the six different stories was all the same except that the target companies were different. They were companies of six different kinds of industry, which were computer, real estate, oil, medicine, antique art and patent right. Each of the six stories appeared three times for each subject, with a different company name at each time. So each subject received 18 bidding problems and made 18 offers to acquire 18 different companies. There were two randomized orders for the 18 bidding problems to appear and each subject was randomly assigned to one of the two random orders.

B. Subject

The subjects were 80 students, randomly recruited from the campus of the National Taiwan University. Each subject was randomly assigned to one of the four conditions. There was not time constrain for subjects to perform the task. Each subject was encouraged to take his or her own pace in doing the experimental task. In average, subjects took around 15-20 minutes to complete the experiment. After finishing the experiment, each subject received 100 NT dollars and extra bonus if the final asset was more than the original asset, 1000 wan NT dollars.

C. Stimuli

Two kinds of bidding problems adapted from the study of Samuelson & Bazerman (1985) will be used to test the hypothesis in this study. Please note that in order to make the whole story sound natural, the currency will be New Taiwan dollars and the monetary unit will be ‘wan’, (which means 10,000 in Chinese) because the experiment was done in Taipei, Taiwan. The bidding problems asked subjects to play the role of the buyer to bid a price for a company. The bidding problems were titled as investment problems, which are described in the following:

> *You are the representative of the company A to negotiate with a seller over the sale of a commodity with uncertain value, ranging from 0 wan NT dollars to 100 wan NT dollar and the possibility of each value is equally likely. The value of the commodity is uncertain because some kind of planning is going on. However, the result of the plan and the true value of the commodity are known by the seller but not by the public, including you. The value of the commodity is still regarded by you as a random variable with values ranging from 0 wan NT dollar to 100 NT dollars equally likely. Nevertheless, the seller reveals the news that they have already got the results of the plan but the true value of the commodity has to be kept secret.*

In particular, the buyer has the ability to increase the value of the commodity by X (X is "25 wan NT dollars" in the Fixed condition, and "50% of the true value of the company" in the Varied condition) after acquiring it. But only the seller knows the specific value of the company such that he can decide whether to accept your offer or not. Your task is to estimate the value of the commodity and offer a price for it. The seller is willing to sell the commodity as long as the offered price is equal to or higher than the true value of the commodity. Please offer a price.

The true value of the company could be from 0 to 100 wan NT dollars depending on the result of the plan, and all values between 0 and 100 wan NT dollars are considered equally likely. Therefore, the expected value of the company in both Profit conditions is the same, which is 50 wan NT dollars. In particular, the estimate of the company will be worth more in the hands of the buyer because the buyer has a strong management team to increase its value. In the Varied Profit bidding situation, the company will be worth 50% more under the management of the buyer than under the management of the seller. In the Fixed Profit bidding situation, the company will be always worth 25 wan NT dollars more under the management of the buyer. Please note that the expected value of the company to be acquired in the two Profit type problems was the same, which is 50 wan NT dollars. Thus, due to the 50% profit in the Varied Profit condition, the expected value of the profit for the buyer would be 25 wan NT dollars, which is the same as the fixed profit 25 wan NT dollars in the Fixed Profit condition.

Before the bidding problems, subjects received an instruction to introduce the bidding problems. The introduction briefly described the task of the subject, which was to assume the role of the buyer to offer a price to acquire a company with uncertain value in 18 independent investment problems. Four important points were listed to facilitate the subjects to correctly comprehend the bidding problems. First, the 18 bidding problems were independent. That is, any information about an investment should have not relation with subsequent or previous investment. Second, the true value of the company to be acquired is uncertain, ranging from 0 wan NT dollars to 100 wan NT dollars. As a matter of fact, subjects were told that the computer randomly decided the true value. Third, each subject had asset of 1000 wan NT dollars and his/her task was to increase the asset through acquiring the companies in the 18 chances of bidding. So, if the offered price was higher than the true value of the company, then the subject might actually lose money even though the company was acquired. Fourth, the performance of the subject was evaluated by the final asset, but not by the total number of companies acquired by the subject.

It is emphasized that the purpose of the buyer was not to own the company, but to increase the total asset of the buyer. That is, the purpose of the buyer was not just to acquire the company, but also to maximize profit for the buyer. Subjects were literally instructed to maximize their profit through bidding for the target company. If the acquisition will lead to any decrease in the total asset, then the buyer should not acquire the company and should not offer any price.

After each bidding, subjects received only one kind of the Feedback Type conditions, with feedback or without feedback. In the Feedback condition, feedback

information appeared after the price was offered in each bidding, which included the true value of the commodity, if the offer was accepted or not, amount of profit or loss, and the left asset. Conversely, in the No Feedback condition, no information was provided after each price offering.

D. Experimental Procedure

Subjects were randomly assigned to one of the four between-subject conditions. Subjects were first given the introduction section, which encouraged subjects to read the problems carefully and to bid a price to maximize their final asset through acquiring the target company, as described in the stimuli section. After the introduction section, subjects received 18 bidding problems of 6 different versions, with each version appearing 3 times in a random order. Each subject received only one kind of the two Profit conditions. In the Varied Profit condition, the profit for the buyer in all 18 bidding problems was 50% of the true value of the target company. In the Fixed Profit condition, the profit for the buyer in all 18 bidding problems was 25 wan NT dollars. After each price bidding, subjects in Feedback condition, subjects were given information of the results of their bidding. On the other hand, subjects in the No feedback condition did not receive any information after each bidding. When subjects finished the 18 biddings, all subjects received 100 NT dollars for participation. Moreover, the subjects who profited from those biddings were rewarded with extra bonus. After the experiment, subjects were required to write down their thinking process for making the decisions.

E. Results and Discussion

There was no significant difference between the two randomized orders ($F(1, 1438)=1.22$, $MS_e= 444.51$). Therefore, the data of the two different orders were collapsed together for further analysis. In the following statistical analyses, the variables of subject and the six versions of cover stories were treated as random variables and the variables of Profit Type and Feedback were treated as fixed variables. So, the effect of Profit type, Feedback and the interaction of these two variables was tested in terms of F' ratio, which is more conservative than F ratios. The error term (the denominator) of F' ratios took the form of $MS_1+MS_2-MS_3$. The degree of freedom for the error term was the nearest integral value to the result of the following equation:

$$\frac{(MS_1 + MS_2 - MS_3)^2}{\left(\frac{MS_1^2}{df_1} + \frac{MS_2^2}{df_2} + \frac{MS_3^2}{df_3}\right)}$$

Where MS_1refers to the mean square variance of the interaction between the subject and the target variable, MS_2 refers to the mean square variance of the interaction between the target variable and the story versions, and MS_3 refers to the mean square variance of the interaction between the target variable, subjects and the story versions. Therefore, F' ratios takes the error term contributed from both subjects and story versions. That makes F' ratios a more conservative test than F

ratios, which only include the error from subjects (Kirk, 1982).

The results of the first experiment are shown in Figure 1. Please note that the unit of all the numbers reported in this study is 10,000 NT dollars. Let's discuss the variable of Profit type first. As predicted by the simplified multiple perspective taking hypothesis, the average offer in the Varied Profit condition is significantly higher than that in the Fixed Profit condition (53.78 vs. 47.73, $F'(1,41)=8.98$, $MS_e=1461$, $p<.01$).

Both the normative hypothesis and perspective ignorance hypothesis are not supported by the results. According to the normative hypothesis, subjects should offer 25 wan NT dollars in the Fixed profit condition and zero in the Varied profit condition. However, the prices offered by subjects were not close to what was predicted by the normative model, either in the Fixed profit condition or in the Varied profit condition. Similarly, the results are also different from what predicted by the perspective ignorance hypothesis. According to the perspective ignorance hypothesis, subject would offer expected value of the company, which is 50 wan NT dollars. If subjects used the expected value as the basis for decision making, as predicted by the perspective ignorance hypothesis, then the price offered in both Varied Profit and Fixed Profit conditions should be the same, given that the expected value of the target company in both conditions is the same. However, subjects in the Varied profit condition offer higher prices than subjects in the Fixed profit condition.

As predicted by the simplified multiple perspective taking hypothesis, subjects in the Varied Profit condition offer higher prices than subjects in the Fixed Profit condition, even though the expected value and expected profit of these two conditions is the same. According to the simplified multiple perspective taking hypothesis, subjects in the Varied Profit condition have higher incentive to offer acquire companies with high true values. If the true value of the company is high and is acquired, then there will be 50% profit. If the company is not acquired, then no profit is possible. Therefore, subjects would be willing to give in more to the position of the seller and offer higher prices for the company.

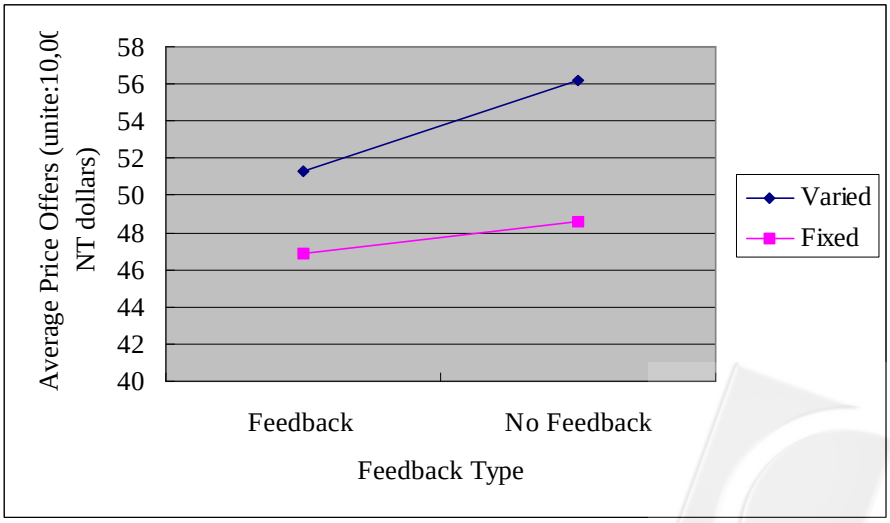

Figure 1: Average prices offered by the bidders in Experiment 1.

One major difference between Varied Profit condition and Fixed Profit condition is the degree of risk. In the Fixed Profit condition, the profit is certain, whereas the profit is uncertain in the Varied Profit condition, which depends upon the true value of the company. Therefore, one might argue that the risk preference of subjects in this experiment could be risk-taking such that the expected utility of the profit in the Varied Profit condition was higher than that in the Fixed Profit condition. As a result, subjects offer higher prices in the Varied Profit condition than those in the Fixed Profit condition do.

This argument seems to be contradictory to the finding of the study done by Tversky and Kanhnemann (1986) that people are risk-averse when the decision problem is positively framed. That is, when subjects perceive that they will gain from the decision situation, they are usually risk-averse and prefer the alternative with certain gain to the alternative with uncertain gain. Given that the problems are positively framed in this experiment (all problems refer to "profit"), subjects should be risk-averse, instead of risk-taking. Therefore, the difference between Varied Profit condition and Fixed Profit condition should not be resulted from risk preference.

Now let's discuss the results of the Feedback variable. The manipulation of Feedback information does not seem to affect subjects' decisions of bidding prices. The average offer in the Feedback condition is 49.09 wan NT dollars, which does not significantly differ from the price offered in the No Feedback condition, which is 52.43 wan NT dollars ($F'(1, 15)= 1.45$, $MS_e=2769$). Subjects provided with feedback information do not seem to approach to the optimal decision more than subjects without feedback information do. The results of the Feedback variable do not support the normative hypothesis.

The results of the Feedback variable seem to support the prediction of the perspective ignorance hypothesis. Subjects provided with feedback information about the results of bidding do not seem to offer significantly different prices from subjects in the No Feedback condition. Nevertheless, there seems to be an interesting interaction between the variables of Profit type and Feedback type, as illustrated in Figure 1, that is congruent with the predictions of the simplified multiple perspective-taking hypothesis. In the No Feedback condition, subjects in the Varied Profit condition seem to offer higher prices than subjects in the Fixed Profit condition (56.22 vs. 48.64) do. On the other hand, the difference between the Varied Profit and Fixed Profit condition seem to converge for subjects with feedback information (51.33 vs. 46.84). According to the simplified multiple perspective taking hypothesis, subjects are considering two conflicting perspectives at the same time, enhancing the price offer to achieve agreement with the seller and depressing the price offer to reduce the risk for the buyer. The varied nature of profit in the Varied profit situation encourages subjects to raise offer price to get agreement settled. However, feedback information draws attention to the high risk accompanied with high price offer. As a result, the difference between the Varied profit condition and the Fixed profit condition will be reduced when feedback information is provided. That is, this interaction pattern of result supports the prediction of the simplified multiple perspective taking hypothesis, but the interaction is not statistically significant ($F'(1,43)=0.64$, $MS_e=1355$).

One possible reason why the plausible interaction between the two independent

variables is not significant could be the large variation between the six versions of cover stories. As mentioned in the previous text, F' ratios instead of F ratios are used for inferential statistic tests. The cover stories are considered to be a random variable and therefore also contribute to the error term for F' tests. If the variation between the cover stories is fairly large, it is very likely the variance of the cover stories might override the effect of Feedback information or the interaction effect. This speculation calls upon further analysis of the variance of cover stories.

The differences between the six cover stories are highly significant ($F(5,380)= 16.69$, $MS_e= 8195.05$, $p<.0001$). Subjects offer highest prices for acquiring computer and real estate companies (average 57.26 and 57.79), and less for oil company and patent right (49.72 and 50.73) and the lowest for medicine and antique art companies (44.83 and 44.21). The average differences between the cover stories are as large as 13.58. When the effect of Feedback, if there is any, is smaller that the variation between different cover stories, then the effect will be overridden.

The difference between the six cover stories might be derived from world knowledge. Real estate companies once were and computer companies are now the most profitable industries in Taiwan, especially in the stock market. After the experiment, subjects were required to write down their thinking process for making the decisions. Quite a few of the subjects mentioned that the industries of computer and real estate always make handsome profit, so they offer extremely high prices (some people offer 100 wan NT dollars, the highest possible price for the company) to make sure that they acquire the company. Moreover, the economic scales of computer companies and real estate companies are usually larger in Taiwan. Therefore, people might carry their knowledge into the experimental situation. Even though in the story, they were told that the true value of the company is uncertain for some kind of reason, and the profit rate was literally stated, either 50% of the true values of the company or 25 wan NT dollars. Subjects still tended to assume that computer companies and real estate companies had higher values and will have much higher profit potential than the other companies.

If the variance between the six cover stories is indeed resulted from world knowledge of subjects, rather from random errors, then it accidentally enlarges the error term and might hence override the effect of feedback. Thus, the test material used in Experiment 1 does not seem to provide a fair condition to test the feedback effect. Therefore, the second experiment is designed to further investigate if the feedback effect does exist. In addition, the variable of Profit type is also manipulated again in the second experiment to see if the difference between Fixed and Varied Profit conditions can be replicated.

V. Experiment II

There are four purposes for conducting Experiment 2. The first purpose of Experiment 2 is to verify if the results of Experiment 1 are due to risk-taking preference. It could be argued that subjects in Experiment 1 might be highly risk-taking such that uncertainty has higher utility than certainty. The profit rate in the Varied profit condition is uncertain because it is dependent on the uncertain value of the company. On the other hand, the profit of the Fixed Profit condition is

certain, which is 25 wan NT dollars. So, if subjects are highly risk-taking, they should perceive higher expected utility for the company in the Varied Profit condition than that in Fixed Profit condition, and therefore should offer higher prices for Varied Profit problems. To examine this hypothesis, the expected value of the profit in the Fixed Profit problems is raised from 25 wan NT dollars to 30 wan NT dollars in this experiment. Thus, in Experiment 2, the expected value of the target company is higher in the Fixed Profit situations than that in the Varied Profit situations.

If subjects are making decisions according to the expected value or expected utility, as predicted by the perspective ignorance hypothesis, then the price they offer for Fixed Profit problems should be no more than that of Varied Profit problems. On the other hand, if subjects were compromising two conflicting concerns, they would perceive possible profit outweighing possible risks in Varied Profit condition and hence offer higher prices. Therefore, they should still offer higher prices for Varied Profit problems than for Fixed Profit problems as subjects did in Experiment 1.

Secondly, the stories are revised such that no prior world knowledge could be applied to see if feedback information does have impact on prices offered by the buyer. All the cover stories are neutral in the sense that no specific kind of industry is mentioned in the story. Thus, subjects will not be able to use their world knowledge to estimate the value of the company.

Thirdly, an explanation chapter of perspective taking is manipulated in this experiment to further assess the three hypotheses of perspective taking. According to the perspective ignorance hypothesis, subjects do not take the perspective of the other side such that the offered prices deviated from the optimal solution. If subjects are instructed the importance of the perspective of the seller, then subjects should not ignore the existence of information asymmetry and offer optimal prices. On the other hand, according to the simplified multiple perspective taking hypothesis, subjects already take the perspectives of both sides into consideration, so the instruction chapter should not make any difference.

Lastly, the variable of expertise, which is statistical knowledge of subjects, is added to Experiment 2. As we have seen, subjects in Experiment 1 did not offer optimal prices. One possible reason could be lack of statistical knowledge of probability. Fong, Krantz and Nisbett (1986) found that statistical reasoning about everyday problems was improved by attendance of statistics courses. So, the variable of expertise was manipulated in this experiment to investigate whether the statistical knowledge background will help subjects to offer optimal prices.

A. Experiment Design

In order to make sure that the responses of the subjects were resulted from the variables manipulated in this experiment, instead of from their prior knowledge, all subjects were given a pretest problem before the actual experiment begun. Subjects who did profit in the pretest bidding problem were paid 50 NT dollars and excluded from the experiment. Subjects who did not profit from the pretest bidding proceeded to the posttest biddings.

For the posttest problems, three variables were manipulated: Feedback, Expertise and Profit type. In this experiment, an explanation chapter of information

asymmetry is added to the variable of Feedback such that the Feedback variable had three between-subject levels: Causal Feedback, Simple Feedback and No Feedback. The Simple Feedback condition is exactly the same as the Feedback condition in Experiment 1, and No Feedback condition is exactly the same as the No Feedback condition in Experiment 1. So, the only difference of the Feedback variable between Experiment 1 and 2 is the Causal Feedback condition, where the explaining chapter of perspective taking is added.

In the Causal Feedback condition, subjects were given an explaining instruction before the posttests took place. The instruction deliberately described the importance of taking the perspective of the seller during the reasoning process of decision making. Moreover, similar to the Simple Feedback condition, subjects were given the feedback information after each bidding, including the true value of the acquired company, whether the bidding was accepted, whether they profited from the bidding if it was accepted, and the total asset left. The Simple Feedback condition was equivalent to the Feedback condition in Experiment 1, where subjects were not given the explaining instruction as the subjects were in the Causal Feedback condition. Nevertheless, after each price offering, subjects in the Simple Feedback condition were also given the feedback information as those in the Causal Feedback condition. The No Feedback condition was equivalent to the No Feedback condition in Experiment 1. For the subjects in the No Feedback condition, no explanation information was given before the biddings and no feedback information was given after each bidding. The No Feedback condition served as the baseline condition to evaluate the effect of feedback information given in the Causal Feedback and Simple Feedback conditions.

The Expertise variables had two between-subject levels: Expert and Novice. The Expert condition involved subjects with statistics background, who had taken at least one statistics course of the undergraduate level or above. The Novice condition involved the subjects who did not take any statistics course at all before they came to this experiment. The Feedback and Expertise were crossed between-subject variables. For each of the three Feedback levels, there were two Expertise conditions. So in total there were six between subject conditions.

The Profit Type variable had two within-subject levels: Varied Profit type and Fixed Profit type. All of the subjects were given twenty posttest problems, 10 Varied Profit problems and 10 Fixed Profit problems. In the Varied Profit condition, the subjects were instructed that the target company would increase 50% in value if the bidding were accepted. In the Fixed Profit problems the subjects were told that the value of the target company would increase in a fixed number, which was 30 wan NT dollars if the bidding was accepted. Unlike the Fixed Profit condition in Experiment 1, the profit in the Fixed Profit problems is 5 wan NT dollars higher than the expected value of the profit for Varied Profit problems to test against the "risk taking" hypothesis.

B. Subjects

In total, there were 148 students participating in this experiment, who were randomly recruited from the campus of the National Taiwan University in Taipei. Twenty-eight of them profited from the pretest and were excluded from the actual experiment. Therefore, there were 120 subjects participating in the posttest

experiment. Each student was encouraged to do their best in the experiment and was paid 100 NT dollars for participating in this experiment. Moreover, subject was paid extra bonus if they had profited after finishing all the biddings. There was no time limit and the subjects were instructed to do the experiment at their own pace. In average, each subject took about 20-30 minutes to finish the experiment.

C. Stimuli

The experimental stimuli included three crucial components: the pretest, the posttest and the feedback. Similar to the bidding problems in Experiment 1, the pretest problems were also investment problems involving bidding for a target company. The true value of the company is also unknown due to the uncertain result of the investment of the company. The only difference between the pretest problems and the bidding problems used in Experiment 1 was the possible value of the target company. It was either 50 wan or 20 wan NT dollars, instead of ranging from 1 to 100 wan NT dollars. It could be worth 50 or 20 wan NT dollars per stock depending on the success of an investment done by the owner of the company. The possibility of successful investment is 50%. Similarly, the result of the investment was only known to the seller, but unknown to the buyer. The purpose of using this kind of pretest problem was to make the problem easier for subjects because there were only two possible values, instead of 100, for the target company.

Subjects finishing the pretest problems proceeded to the posttest problems, except subjects in the Causal Feedback condition, who received an explanation chapter right after the pretest. The explanation chapter introduced the concept of perspective taking and expected value, an example for the concept and how to apply the concept of perspective taking to solve the pretest problem. That is, subjects in the Causal Feedback condition were explicitly told the correct reasoning and the correct answer of the pretest problem. However, subjects in other Feedback conditions (e.g. Simple Feedback and No Feedback) did not receive this chapter.

The posttest problems were the same as used in Experiment 1, except that the profit in the Fixed condition was raised to 30 wan NT dollars. In particular, the exact name of the company was not mentioned, neither was the industry of which the company belonged to. The company would hence look more neutral than the company with exact names and industry in Experiment 1, in order to prevent subjects from brining in their world knowledge when estimating the value of the company.

Both the Causal Feedback condition and the Simple Feedback condition gave subjects relevant result information each time after they offered a price. Similar to Experiment 1, the result information included the true value of the commodity, if the offer was accepted or not, amount of profit or loss, and the left asset.

D. Experimental Procedure

All subjects were given a pretest bidding. If they did not profit from the pretest, they proceeded to the posttest problems and were randomly assigned to one of the six between-subject conditions. If they did profit from the pretest, they were paid 50 NT dollars and excluded from the experiment. The subjects in the Causal Feedback

condition received an explaining instruction of perspective taking and expected value before receiving the posttest problems. In particular, the instruction emphasized the importance of taking the other side's (the seller) perspective. The subjects in the other two feedback conditions did not receive any explaining instruction before receiving the posttest problems.

Then, all the subjects were given posttest problems to bid a price for the target company. Similar to Experiment 1, subjects were given 1000 wan NT dollars as their asset to invest on various companies. Subjects were instructed to read the problems carefully and to bid a price that can maximize their own profit when acquiring the target company. There were twenty posttest problems, ten Varied Profit problems and ten Fixed Profit problems. These two kinds of problems showed up in alternating order, either Varied Profit first then Fixed Profit, or Fixed Profit first then Varied Profit. For subjects in the Causal Feedback and Simple Feedback condition, they were given information of the results of their bidding. Subjects in the No feedback condition did not receive any information after each bidding. Subjects in the Causal Feedback condition received an explanation chapter before the posttest biddings and result information after each price offer. On the other hand, subjects in the Simple Feedback only received result information after each price offer. As for subjects in the No Feedback condition, no feedback information was received either before or after price offer.

When subjects finished the twenty biddings, all subjects received 100 NT dollars for participation. Moreover, the subjects who profited from those biddings were rewarded with extra bonus. Similar to Experiment 1, bonus is used to encourage subjects to maximize their final asset.

E. Results and Discussion

For the posttest problems, there was no difference between the two randomized orders ($F(1, 2398) = 1.09$, $MSe=818.42$). So, the data of the two randomized orders were collapsed together for further analysis. The overall average price offered by all the subjects for the posttest problems in this experiment is 51.11, which is not significantly different from the expected value, 50. This result refuted the hypothesis of normative model. However, this result could not differentiate the perspective ignorance hypothesis and simplified multiple perspective-taking hypothesis. According to the perspective ignorance hypothesis, subjects would offer expected value, which was 50 wan NT dollars. On the other hand, the simplified multiple perspective taking hypothesis argued that subjects would compromise between two opposing perspectives and would hence offer prices of the middle, which was also 50 wan NT dollars. Further analysis of results was done to evaluate these two hypotheses.

As predicted by the simplified multiple perspective-taking hypothesis, subjects indeed offered higher prices in the Varied Profit condition. The average bidding prices in the Varied Profit condition was 53.84 wan NT dollars, which was significantly higher than the average bidding prices in the Fixed Profit condition (48.40 wan NT dollars, $F'(1, 33) = 18.28$, $MSe= 972.68$, $p<.0001$). Subjects were willing to pay more for the Varied Profit problems than for the Fixed Profit problems even though the expected value of the target company was higher in the Fixed Profit problems (80 wan NT dollars for Fixed Profit condition and 75 wan NT

dollars for Varied Profit condition).

If the subjects only counted on the expected value of the company, as assumed by the perspective ignorance hypothesis, then they should offer less for Varied Profit problems than for Fixed Profit problems given that the expected value of the company in Fixed Profit condition was 5 wan NT dollars more. On the contrary, if subjects are risk-lovers such that the expected utility of Varied Profit type conditions would be increased, then they should offer similar prices for both Profit type conditions. However, neither of the expected value account or the risk taking account could predict the results. On the other hand, similar to the results in Experiment 1, this result in Experiment 2 also supported the simplified multiple perspective-taking hypothesis. The data suggested that the possible high profit in the Varied Profit condition lead subjects to weighting more on the end of "acquiring the company" than on the end of "avoiding risk" such that they offered more in the Varied Profit condition than those in the Fixed Profit condition.

The manipulation of the Feedback type variable does not affect the prices offered for the target company, either. Similar to the results of the first experiment, the average offered for the three Feedback conditions did not differ from each other (Causal Feedback: 52.05, Simple Feedback, 51.03, No Feedback, 50.26, F'(2, 114) = .08, MSe= 8034.21, n.s.). Subjects given with feedback information did not seem to approach optimal biddings. Congruent with the results in other studies (Ball, Bazerman & Carroll, 1991; Camerer, Loewenstein & Weber, 1989), the data in this experiment demonstrated that the feedback information did not seem to make subjects to bid optimal prices.

Nevertheless, there was an interaction effect between Profit type and Feedback (F'(2, 54) = 3.65, MSe=881.73, p<.03). As demonstrated in Figure 2, in both of the Causal and the Simple feedback condition, the average price offered for the Varied Profit problems was slightly higher than that of the Fixed profit problems but the difference was not significant (Varied: 53.48 and Fixed: 50.63 for the Causal Feedback condition, t(2, 108) = 1.33, n.s., Varied: 52.74 and Fixed: 49.33 for the Simple Feedback condition, t(2, 108) =1.59, n.s.). On the other hand, for the No Feedback condition, the subjects offered 55.30 to acquire the target company in the Varied Profit problems, which was significantly more than the average offer for the target company in the Fixed Profit problems, which was 45.23 (t(2, 108)= 4.70, p<.01).

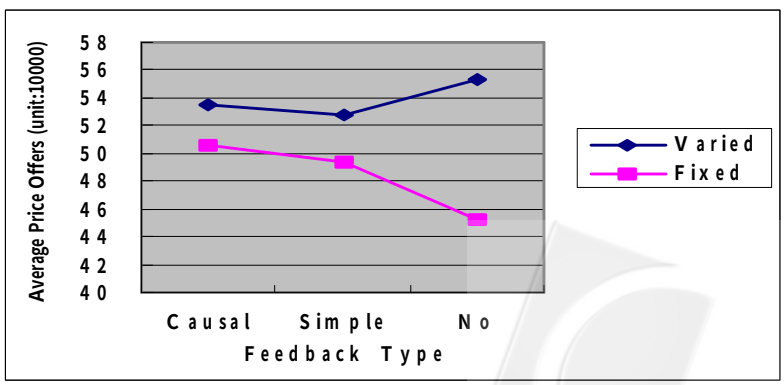

Figure 2: Average Price Offers in Experiment 2, by Feedback and Profit Type

In the No Feedback condition, subjects were not given any information of the results of offers and they decided the prices by their own intuition. They put more weight on the idea of "acquiring the company" than on the idea of "avoiding risk" in the Varied Profit condition such that they leaned to the position of the seller. Therefore, the offers of the Varied Profit and the Fixed Profit problems diverged more for the No Feedback condition than for the other two Feedback conditions. On the other hand, when the results of the offers were reported to the subjects, they learned from feedback information that high price offers could result in too much risk of buying lemons. Therefore, they swang back to their own position and hence offered less.

As we can see from the results, subjects were trying to compromise between the two opposing positions of buyer and seller. When they were not provided with feedback information of bidding results, they had high incentive to acquire the company in the Varied Profit condition due to the 50% profit. Therefore, subjects inclined to the position of the seller and offer higher prices in the Varied Profit condition than in the Fixed Profit condition. On the other hand, when provided with feedback information, subjects realized that they are overconfident in making more profit out of acquiring the company. This finding was in accordance with the results of Lichtenstein, Fischhof and Phillips (1982), which also found out that the feedback information could at least moderately reduce the overconfidence bias. Therefore, they came back to their position as the buyer and offered similar prices for both profit conditions.

Although there was a difference between the conditions with feedback and with feedback, there was no difference between the Causal Feedback and Simple Feedback conditions. If subjects ignored the perspective of the seller, as argued by the perspective ignorance hypothesis, the explanation chapter should encourage subjects to pay attention to the perspective of the seller. However, the explanation chapter of perspective taking did not help subjects to approach the optimal prices. One plausible reason for this result was that subjects have already take different perspectives into their concern, as asserted by the simplified multiple perspective-taking hypothesis. So, emphasis of perspective taking would not make any difference.

As for the variable of expertise, the average offer of the subjects with statistics background was 50.87, which did not differ from that of the subjects without statistics background, 51.36 (F' (1, 110)= 0.02, MSe = 7932.17, n.s.). The background training of statistics did not seem to make any difference for estimating the value of the target company. Moreover, the variable of expertise does not seem to have any difference for pretest problems, either. The average offer for the pretest is 34.57, with 36.16 for the subjects with statistics background and 33.40 for the subjects without statistics background. The difference between these two groups was not significant (F(1, 119)= 1.23, n.s.). That is, in the pretest problems, subjects with statistics background offered similar prices as the subjects without any statistics background. In conclusion, the statistics knowledge did not help subjects to offer optimal prices.

As demonstrated in the first experiment, subjects offered higher prices in the Varied profit condition then the subjects in the Fixed profit condition even though the expected profit in these two Profit conditions was the same. In the second experiment, the profit of the fixed condition was raised such that the expected profit of the Fixed profit condition was higher than the expected profit of the Varied profit condition. The results showed that subjects still offered higher prices for the Varied profit condition. In addition, there was an interaction between feedback and profit type. This result showed that for subjects with no feedback information, there was a significant difference between Fixed and Varied profit condition. On the other hand, for subjects with feedback information, the difference decreased. All the results in this experiment suggested that subjects did not offer prices according to expected value or expected utility. When they had higher incentive to acquire the company, they approached to the position of the seller. On the other hand, when they have higher incentive to reduce their risk, they approached to their own position as the buyer. That is, subjects were compromising between these two opposing positions when deciding the price to offer.

VI. Discussions and General Conclusion

In addition, the researches of organizational behavior suggest that people are able to take the perspective of others, and this ability of perspective taking can have positive impacts on work performance involving interpersonal interaction. The study of Sessa (1996) shows that subjects receiving perspective taking training perceive conflict as task-oriented as opposed to people-oriented and that perspective taking can thus be one mechanism that teams can use to manage conflict. The study of Arriaga, Rusbult (1998) demonstrated that adopting the perspective of others during an accommodative dilemma situation can result in more positive emotional reactions and more relationship-enhancing attributions and, accordingly, enhanced inclinations toward constructive responding. Baston Early & Salvarani (1996) also suggested that when subjects were asked to imagine how the others would feel, they produced empathy, whereas when they were asked to imagine how they would feel, egoistic motivation was evoked. In addition, empathy of salespeople can have positive impacts on their sale performance (McBane, 1995).

Moreover, the phenomenon of knowledge curse effect shows that people's understanding of information owned by others is substantially influenced by their own knowledge (Keysar, 1994; Keysar, Ginzel & Bazerman, 1995; Krauss & Fussell, 1991; Fussell & Krauss, 1992; Hock, 1987; 1988). Hindsight effect also shows that when people estimated the probability of possible outcomes of an event, they over-estimate the probability of the outcome that has already occurred (Fishhoff, 1975). People's estimation of occurrence probability of possible results of an event is influenced by their knowledge of the outcome. That is, people are influenced by their own information of outcome even when the task requires them to take the position without the outcome information. Again, people incorporate information from multiple sources.

As a matter of fact, the information obtained through taking others' perspective is influenced by the information owned by observers. For example, there is an

egocentric effect in spatial perspective taking (Marki & Marek, 1997; Tversky, 1996). The process of perspective-taking leads observers to create cognitive representations of others that substantially overlap with the observers' own self-representations (Davis, Conklin, Smith & Luce, 1992). In another word, people incorporate multiple perspectives of their own and others in their representation of perspective taking.

The results in these two experiments do not support the predictions either of normative model or of the perspective ignorance hypothesis. According to the normative model, subjects should offer 25 wan NT dollars in Fixed Profit condition and zero dollars for Varied Profit condition. In both experiments, subjects offered around 54 wan NT dollars for Varied Profit condition and around 48 wan NT dollars for Fixed Profit condition. The price offers in both Profit conditions do not support the normative hypothesis.

The result that subjects, when play the role of the buyer to acquire a company, offer different prices in Varied Profit and Fixed Profit conditions, did not support the perspective ignorance hypothesis, either. According to the perspective ignorance hypothesis, the buyer will act as if the seller shares the same information as himself. Given that the price of the company is uncertain to the buyer, subjects should bid the expected value and totally ignores the fact that the seller has already known the true value. Since the expected value of the company is the same in both profit conditions, subjects should offer the same price for both conditions. However, subjects consistently offer higher prices for Varied Profit condition than for Fixed Profit condition.

In contrast, the experimental results support the predictions of the simplified multiple perspective taking hypothesis. According to this hypothesis, people incorporate multiple perspectives in their understanding of negotiation situations. In bilateral negotiation situations of business transactions, the positions of both sides are usually opposing to each other. Therefore, people enter the situation of bilateral negotiation with this kind of expectation and compromise between two opposing positions during the process of negotiation. In particular, this compromise between the two opposing positions is a simple representation of the two opposing ends on one single dimension, such that people might swing back and forth on this dimension.

The literature of decision making have documented enormous studies showing that people systematically deviate from the rationality by using simplifying decision heuristics (Tversky, 1986). Many heuristics, such as representativeness, availability and many more, are found to essentially affect the process of decision making. For instance, business decision-makers use cognitive simplifying processes in defining ill-structured problems (Duhaime & Schwenk, 1985).

Simplifying strategy is, nonetheless, not necessarily equal to total ignorance, as suggested by the perspective ignorance hypothesis (Samuelson & Bazerman, 1985; Neal & Bazerman, 1983). On the contrary, it could be a simplifying interpretation of perspective information involving both sides, by using heuristic rules as suggested by Karniol & Shomroni (1999). The study of Karniol & Shomroni (1999) demonstrated that people use heuristic rules to predict how others would think and feel by searching similar experiences

stored in their memory. In addition, as suggested by the research of Thompson & Hastie (1990), people enter the situation of bilateral negotiation with the expectation that the two parties are in opposing positions. It follows that negotiators heuristically transform this expectation into his understanding of the negotiation situation.

Therefore, offering the expected value of the commodity of uncertainty, as found by Bazerman & Neal, 1985) is not necessarily due to ignoring the perspective of the other side. It could be because the buyer interprets the negotiation situation as two opposing perspectives and takes the perspective of the other side in a naïve way such that expected value is the strategy of compromising between the two. According to the normative hypothesis or the perspective ignorance hypothesis, people either take the perspective of the other side in a normative way, or totally ignore it. Nevertheless, there might a third possibility: people are considering the perspective of the other side in a simplifying way, not totally ignore it.

The simplified multiple perspective-taking hypothesis proposes that when the buyer has high incentive to obtain the commodity, he will give in more to the position to the seller such that he will offer higher prices. On the other hand, when the buyer is aware of risks, he will come back towards to the position of the buyer. If the representation of the negotiation situation is two opposing sides on the dimension of value, then when the buyer has more incentive to obtain the negotiated commodity, the buyer will be more willing to give in to the position of the seller. Therefore, the buyer will be willing to offer higher prices to buy the commodity. On the contrary, the perspective ignorance hypothesis asserts that the buyer would totally ignore the perspective of the other side and decides the offered price based on the expected value from the perspective of the buyer.

Based on the simplified multiple perspective taking hypothesis, people understand the negotiation situation in a naïve way, which is neither perfectly rational, nor totally ignorant. That is, in the understanding of negotiators, different perspectives are represented in a simplifying, intuitive manner. Similar to the perspective ignorance hypothesis, the simplified multiple perspective taking hypothesis also assumes that simplifying strategies play an important role in the process of decision making. The difference between these two hypotheses is the content of the simplifying strategy. The simplified multiple perspective-taking hypothesis assumes that people are still maintaining different perspectives in their representation of the bilateral negotiation situation, whereas the perspective ignorance hypothesis proposed that perspective information is totally ignored. The results in this paper support the simplified multiple perspective taking hypothesis by showing that people swing between the different positions of the seller and the buyer.

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雙邊協商中的觀點採用:完全忽略或部分忽略對方的觀點?

吳玲玲
台灣大學資訊管理學系助理教授

摘要

所謂知己知彼百戰百勝。在協商過程中，若協商者可以事先洞悉對方的想法，則對於協商者是非常有利的。此文的目的在於探討：在雙邊協商(bilateral negotiation)**的情境中，協商兩造採用對方觀點**(perspective taking)**評估協商相關資訊的過程。觀點忽略**(perspective ignorance)**假設認為協商者會完全忽略對方的觀點。因為當協商情境出現資訊不對稱**(information asymmetry)**的現象時（例如買方不知道底價而賣方知道），協商者並不會將這個重要訊息納入考量之內，而誤以為對方所擁有的資訊與自己一樣。然而，我們可以常常觀察到，資訊弱勢的一方常會採取某種自我保護措施（例如買方不會完全相信賣方的說詞）。所以在本文中，作者提出"直觀觀點基模"**(naïve perspective taking schema)**的概念，來描述協商者模擬對方觀點的過程。在協商者所建構的"直觀觀點基模"當中，協商者仍保留部分（雖然不是完全）對方的觀點。直觀觀點基模至少包含：對方的立場以及對方可以接受的可行方案的範圍。**

本研究執行兩個實驗來驗證直觀觀點基模的解釋力。實驗的結果顯示：一、在雙邊協商的情境中，協商者試圖在兩個不同的立場中取得平衡妥協，所以中間點是最常見的協商方案。顯示直觀基模中的確存在，因為協商者清楚知道兩造不同的立場。二、在不同的利潤情境中，（但事實上期望利潤是一樣的）買方妥協的程度不同。當可能產生高利潤時，買方較願意妥協。顯示協商者知道對方可以接受的可行方案的範圍。三、回饋資訊不能降低資訊不對稱所產生的偏誤，但是回饋資訊可以降低上述的利潤情境效應。顯示回饋資訊對不同的觀點資訊影響不同。本研究的結果顯示，協商者縱然無法完全採用對方的觀點來理解協商的各種相關資訊，但是協者仍然部分保留，而非全然的忽略，對方的觀點。

關鍵字：協商、觀點、資訊不對稱、利潤情境效應、基模