Determinants of Buyers’ Aspiration and Reservation Price

Henrik Kristensen Tommy Gärling
Department of Psychology Department of Psychology
Göteborg University, and Göteborg University
Department of Business Administration
Göteborg School of Economics and Commercial Law

Kristensen, H., & Gärling, T. Determinants of buyers’ aspiration and reservation price. Göteborg Psychological Reports, 1996, 26, No. 6. Previous research has suggested that an initial offer or an estimated market price is adopted as cognitive reference point in a price negotiation. However, in one experiment with 24 psychology and 24 business administration (BA) students playing the role of buyers of condominiums it was found that subjects adopted their reservation prices as a reference point but that the reservation price were influenced by an estimated market price. In a second and third experiment with a total of 32 psychology and 75 BA students, a close correspondence was also observed between buyers’ indicated aspiration prices and their estimates of sellers’ reservation prices in that both were similarly affected by an estimated market price. In choosing an aspiration price, buyers may attempt to infer how the sellers’ reference point (reservation price) changes with an estimated market price.

Key words: Negotiation, decision making, consumers choice.

Negotiation is a pervasive form of strategic social interaction between individuals, groups, organizations, or nations (Johnston & Benton, 1988). In negotiations people attempt to settle what each shall give and take or perform and receive in a transaction between them (Rubin & Brown, 1975). As has been pointed out, the following five features characterize negotiations: (a) People believe that they have conflicting interests; (b) Communication is possible; (c) Intermediate solutions or compromises are possible; (d) Parties may make provisional offers and counteroffers;

Author note: This research was financially supported by grants #F244/92, #F6/93, and #F12/94 to the second author from the Swedish Council for Research in the Humanities and Social Sciences. A prior version of the paper was presented at the annual conference of the International Association for Research in Economic Psychology, August 1995, Bergen, Norway.

Correspondence concerning this article should be addressed to Tommy Gärling, Department of Psychology, Göteborg University, Haraldsgatan 1, S-41314 Göteborg, Sweden. Email: Tommy.Garling@pew.psy.gu.se
and (e) Offers do not determine outcomes until they are accepted by both parties (Chertkoff & Esser, 1976; Cross, 1965; Schelling, 1960). In addition, negotiations differ with respect to whether they concern one or several outcome attributes.

A distinction is made between fixed-sum or distributive negotiations and variable-sum or integrative negotiations with more than one outcome attribute (Thompson, 1990; Walton & McKersie, 1965). The former refer to negotiations in which the negotiators’ interests are perfectly negatively correlated. On the other hand, in integrative negotiations a negative correlation does not exist for all outcome attributes. Based on the argument that two people are unlikely to have completely conflicting preferences across many outcome attributes, it has been assumed that most negotiations are integrative (Pruitt & Rubin, 1986; Raiffa, 1982; Walton & McKersie, 1965). However, as the “fixed-pie” bias (Bazerman, Magliozzi, & Neale, 1985) witnesses to, negotiators seem to have difficulties in making tradeoffs in integrative negotiations. Often negotiations therefore proceed rather independently from one outcome attribute to another.

In the present research we focus on bargaining about price which is an important outcome attribute in most business negotiations. Such bargaining is by definition distributive or competitive: The seller wants to sell at the highest price, whereas the buyer wants to buy at the lowest price. No transaction will take place unless the seller and buyer agree on a price.

In a recent review of research on dyadic negotiations, Thompson (1990) makes a distinction between different theoretical stances. First, he distinguishes between normative (e.g., Raiffa, 1982) and descriptive theories (for review, see Neale & Bazerman, 1991). Whereas the former prescribe how negotiators should behave to be rational, the latter attempt to explain why negotiators behave as they do. Second, descriptive theories may focus on individual differences and their explanation (e.g., expertise), motivational factors (e.g., selfishness), or cognitive factors.

Some descriptive theories of negotiations are primarily concerned with negotiators’ cognitions. For instance, it has been suggested that negotiators evaluate offers relative to multiple cognitive reference points (Kahneman, 1992; Neale & Bazerman, 1991; Neale, Huber, & Northcraft, 1987). The concept of reference point was introduced in prospect theory (Kahneman & Tversky, 1979; Tversky, & Kahneman, 1991; Tversky & Kahneman, 1992). In this theory unidimensional (e.g., monetary) decision outcomes are coded as gains or losses relative to a reference point. Thus, if negotiators adopt different reference points they may frame offers differently (i.e., as gains or losses). For instance, Neale, Huber, and Northcraft (1987) argued that buyers adopt a loss or negative frame whereas sellers adopt a gain or positive frame. This is understandable if a product or service of indeterminate value is being exchanged for money with a determinate value. Adoption of a positive or negative frame has empirically been found to affect the outcome of dyadic negotiations (Bazerman et al., 1985; Neale & Bazerman, 1985; Neale et al., 1987). In this connection, the distinction between reference point and anchor point should be noted.
(Kahneman, 1992). As shown by Northcraft and Neale (1987), anchor points play a decisive role in shaping negotiators' offers. Cognitive reference points affect how offers are perceived.

An important issue raised by White, Valley, Bazerman, Neale, and Peck (1994) is what determines negotiators' adoption of reference points. Like Kahneman (1992), they argue that bargainers faced with multiple sources of information simplify and allow only one reference point to dominate. It was also suggested that perceptually salient pieces of information which make sense of the decision-making context are adopted as reference points. In their study of dyadic bargaining about house prices, White et al. (1994) found that reservation price or resistance point (a buyer's highest acceptable price) was a dominant reference point. Irrespective of the salience of market price and aspiration price, the reservation price remained the point above which buyers felt that they incurred a loss.

In previous empirical research (Carnevale & Pruitt, 1992) as well as in normative theory (Raiffa, 1982), a negotiator's aspiration and reservation prices are hypothesized to play important roles. Figure 1 illustrates how aspiration and reservation prices may be directly related to utility and indirectly to decisions made by buyers to accept or reject offers in a price negotiation. The figure also shows a possible influence of an initial offer made by the seller. A similar influence may be assumed of any other piece of information such as, for instance, an estimated market price. Initially, the buyer's reservation price is perhaps primarily determined by an assessment of what he or she can afford. It will affect how an offer is perceived, that is, as a gain or a loss. However, an initial offer made by the seller may change the reservation price in its direction, perhaps by an amount which is proportional to the credibility of the initial offer (Birnbaum, Coffey, Mellers, & Weiss, 1992; Birnbaum & Stegner, 1979). As a consequence, a selling price which was previously perceived by a buyer as a loss is perceived as a gain. The buyer is then prepared to buy at a higher price.

In a series of three experiments, Kristensen and Gärling (1996) inferred in some experimental conditions that both an initial offer higher than and an estimated market price lower than the buyer's reservation price were adopted as a reference point. In these cases the buyer's reservation price did not seem to play any role. However, in a fourth experiment an induced reservation price was found to be adopted as a reference point. At the same time it was shown that an initial offer affected the reference point. Kristensen and Gärling therefore suggested that the reservation price is the adopted reference point and that it changes with influences from different pieces of information such as an estimate of the market price and an initial offer. A direct test of whether an initial offer and an estimated market price change a buyer's reservation price was conducted in Experiment 1. In this experiment subjects playing the role of buyers were asked to indicate their reservation prices (highest acceptable prices) under conditions in which they were given information about the seller's initial offer and an estimated market price.
An aspiration price is defined as the outcome with the highest value at which a negotiator places some nonnegligible likelihood that the value will be accepted by the opponent (White & Neale, 1994). In accordance with this definition, it may be assumed that a buyer’s aspiration price is determined by his or her belief about the seller’s reservation price (lowest acceptable price). An initial offer and an estimated market price may or may not affect the aspiration price depending on whether they provide information about the seller’s reservation price. Under the same conditions as in Experiment 1, a test was made of whether subjects in the role of buyers adopt an aspiration price corresponding to what they believe is the seller’s reservation price and whether both are affected to a similar degree by an estimated market price and an initial offer (Experiment 2). However, since there was no effect of an initial offer found in Experiment 2, another experiment was subsequently conducted (Experiment 3). The aims of this experiment were the same as those of Experiment 2 but the conditions were more similar to those of a previous experiment in which an effect of an initial offer was observed (Kristensen & Gärling, 1996, Experiment 4).

**Experiment 1**

In line with White et al. (1994), in Experiment 1 it was hypothesized that the buyer’s reservation price is adopted as a reference point in price
negotiations. Furthermore, it was assumed that an initial offer made by the seller or an estimated market price modify the reservation price since those factors were previously found to influence the reference point (Kristensen & Gärling, 1996).

Subjects playing the role of buyers of different condominiums were asked to provide estimates of their reservation prices when a seller's initial offer and a market price estimated by an expert were varied in an orthogonal factorial design. In previous experiments subjects only rated how satisfied or dissatisfied they were with asked selling prices. As a manipulation check, half of the subjects in Experiment 1 likewise made such ratings before indicating their reservation prices whereas the other half of the subjects only indicated their reservation prices.

Two initial offers, which were both higher than the selling price, were crossed with two estimated market prices, which were both lower than the selling price. On the basis of previous findings (Kristensen & Gärling, 1996, Experiment 4), it was expected that subjects’ ratings of satisfaction with the asked selling price would increase both with the initial offer and with the estimated market price. Similar effects were expected to be found for the indicated reservation prices. A high initial offer or a high estimated market price was thus expected to lead to higher indicated reservation prices than was a low initial offer or a low estimated market price.

Method

Subjects

Thirteen male and 11 female undergraduate students of business administration and 9 male and 15 female undergraduate students of psychology participated as part of a course requirement or in return for payment. On average the psychology students were 23.9 years old (SD=3.5), the BA students 22.9 years old (SD=3.4).

Procedure

Subjects answered a brief questionnaire in class. They were asked to imagine that their task was to buy a condominium. All subjects were first presented some market information indicating the actual price ranges of condominiums in the metropolitan area where they were living. On the basis of this information, subjects indicated the highest price (reservation price) they would pay for a particular condominium which was described to them. They were then, on separate pages in the questionnaire, presented eight different asked selling prices of condominiums which they were interested in buying. The selling prices varied in equal steps from SEK 270,000 to SEK 340,000 (1 SEK is approximately 0.15 US Dollars).
The order of the asked selling prices was individually randomized for each subject.

All subjects were asked to imagine that the seller had first advertised a price in a newspaper, then, when contacted by the subject, he or she asked a lower price. In one condition the asked selling price was SEK 20,000 lower than the initially offered price and in a second condition SEK 40,000 lower. An estimated market price was also available at this point in time. This was in turn SEK 20,000 or 40,000 lower than the asked selling price. The initial offer, the asked selling price, and the estimated market price were all presented on a separate page for each condominium. All subjects received two different selling prices for each of the four combinations of initial offers and estimated market prices. For each combination, all selling prices were presented equally often across subjects.

Half of the subjects in each student group first made a rating of how satisfactory or unsatisfactory the asked selling price was. Price was the only factor that subjects had to take into account since they were told that the condominiums were equally attractive in all other respects. The rating scale ranged from 10 (very unsatisfactory) to 90 (very satisfactory) with a midpoint of 50 (neither satisfactory nor unsatisfactory). All subjects were also requested to estimate the highest price at which they were willing to buy the condominium.

**Results and Discussion**

The ratings of satisfaction with the selling price were transformed by subtracting 50. A positive value therefore represents a positive evaluation (gain) and a negative value a negative evaluation (loss). All statistical analyses were performed on averages across the different levels of the asked selling price.

Table 1 shows that subjects on average were satisfied with the selling price when the estimated market price was high but dissatisfied when it was low. This difference was substantiated by a 2 (student group) by 2 (low or high estimated market price) by 2 (low or high initial offer) analysis of variance (ANOVA) on the ratings of satisfaction with the selling price which yielded a significant main effect of estimated market price, $F(1, 22) = 26.50$, $p < .001$, $MS_e = 471.05$. No other effects reached significance. However, the effect of estimated market price tended to be stronger for the BA students than for the psychology students, $F(1, 22) = 3.57$, $p < .10$, $MS_e = 471.05$. On the other hand, in contrast to the BA students, the psychology students tended to be somewhat less dissatisfied when the initial offer was high than when it was low, $F(1, 22) = 2.45$, $p < .15$, $MS_e = 134.80$. Nevertheless, the initial offer had no significant effect on the ratings of satisfaction which is inconsistent with previous results (Kristensen & Gärling, 1996). The effect of the estimated market price replicated previous findings (Kristensen & Gärling, 1996, Experiments 2 and 4).
Table 1

Mean Ratings of Satisfaction With Asked Selling Price by Different Student Groups for High and Low Initial Offer and Estimated Market Price

<table>
<thead>
<tr>
<th>Initial offer and estimated market price</th>
<th>Low</th>
<th>High</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA students</td>
<td>-15.8</td>
<td>8.8</td>
<td>-15.0</td>
<td>4.5</td>
</tr>
<tr>
<td>Psychology students</td>
<td>-8.5</td>
<td>0.8</td>
<td>-5.8</td>
<td>5.2</td>
</tr>
</tbody>
</table>

A difference was obtained between subject groups on the initially indicated reservation prices ($M = \text{SEK} 327,417$ for BA students, $M = \text{SEK} 344,375$ for psychology students) which, however, fell short of significance, $t_{46} = 1.51, p < .15, MS_e = 3451.02$. Table 2 displays the mean reservation prices which subjects subsequently indicated for high and low initial offers and high and low estimated market prices. As may be seen, these values are generally lower than the initially indicated reservation prices. A 2 (student group) by 2 (ratings of satisfaction performed or not) by 2 (phase) ANOVA on the indicated reservation prices in the prephase together with the means of the subsequently indicated reservation prices yielded a significant main effect of phase, $F(1, 44) = 96.80, p < .001, MS_e = 697.79$. The initial difference between the student groups did not remain for the subsequently indicated reservation prices, $F(1, 44) = 3.14, p < .10, MS_e = 697.79$.

As expected, Table 2 also shows that the indicated reservation prices are generally lower than the initially indicated reservation prices. A 2 (student group) by 2 (ratings of satisfaction performed or not) by 2 (phase) ANOVA on the indicated reservation prices in the prephase together with the means of the subsequently indicated reservation prices yielded a significant main effect of phase, $F(1, 44) = 96.80, p < .001, MS_e = 697.79$. The initial difference between the student groups did not remain for the subsequently indicated reservation prices, $F(1, 44) = 3.14, p < .10, MS_e = 697.79$.

As expected, Table 2 also shows that the indicated reservation prices are generally lower than the initially indicated reservation prices. A 2 (student group) by 2 (ratings of satisfaction performed or not) by 2 (phase) ANOVA on the indicated reservation prices in the prephase together with the means of the subsequently indicated reservation prices yielded a significant main effect of phase, $F(1, 44) = 96.80, p < .001, MS_e = 697.79$. The initial difference between the student groups did not remain for the subsequently indicated reservation prices, $F(1, 44) = 3.14, p < .10, MS_e = 697.79$.

As expected, Table 2 also shows that the indicated reservation prices are generally lower than the initially indicated reservation prices. A 2 (student group) by 2 (ratings of satisfaction performed or not) by 2 (phase) ANOVA on the indicated reservation prices in the prephase together with the means of the subsequently indicated reservation prices yielded a significant main effect of phase, $F(1, 44) = 96.80, p < .001, MS_e = 697.79$. The initial difference between the student groups did not remain for the subsequently indicated reservation prices, $F(1, 44) = 3.14, p < .10, MS_e = 697.79$.

As expected, Table 2 also shows that the indicated reservation prices are generally lower than the initially indicated reservation prices. A 2 (student group) by 2 (ratings of satisfaction performed or not) by 2 (phase) ANOVA on the indicated reservation prices in the prephase together with the means of the subsequently indicated reservation prices yielded a significant main effect of phase, $F(1, 44) = 96.80, p < .001, MS_e = 697.79$. The initial difference between the student groups did not remain for the subsequently indicated reservation prices, $F(1, 44) = 3.14, p < .10, MS_e = 697.79$.

As expected, Table 2 also shows that the indicated reservation prices are generally lower than the initially indicated reservation prices. A 2 (student group) by 2 (ratings of satisfaction performed or not) by 2 (phase) ANOVA on the indicated reservation prices in the prephase together with the means of the subsequently indicated reservation prices yielded a significant main effect of phase, $F(1, 44) = 96.80, p < .001, MS_e = 697.79$. The initial difference between the student groups did not remain for the subsequently indicated reservation prices, $F(1, 44) = 3.14, p < .10, MS_e = 697.79$. Furthermore, performing the ratings of satisfaction seemed to increase the indicated reservation prices. However, the main effect of this factor did not quite reach significance, $F(1, 44) = 2.92, p < .10, MS_e = 993.91$, respectively.
which may partly be due to the presence of an outlier in the psychology-student group. The four-way interaction including student group, estimated market price, and initial offer was significant, \( F(1, 44) = 5.90, p < .05, MS_e = 35.09. \) The psychology students who performed ratings of satisfaction indicated lower reservation prices than did the BA students.

As expected, both the indicated reservation prices and the ratings of satisfaction with the selling price increased when the estimated market price was high as opposed to when it was low. Thus, these aspects of the results supported the hypothesis that the reservation price is adopted as a reference point. This is further supported by the fact that subjects who performed ratings of satisfaction tended to be satisfied with selling prices lower than, and dissatisfied with selling prices higher than their indicated reservation prices. In accordance with the characteristics of a reference point (Kahneman, 1992), identical selling prices were thus in the former cases perceived as gains and in the latter cases as losses.

Although the results supported the main hypothesis, in other respects they were not entirely consistent with previous findings (Kristensen & Gärling, 1996). In similarly designed experiments it was found that an initial offer influenced ratings of satisfaction with selling prices. However, in the present experiment only a weak effect on the indicated reservation prices was found. The reason for this difference is not quite clear. It may be noted that there was a tendency that psychology students were more influenced by the initial offer than were the BA students. If BA students are more aware of the manipulative nature of bargaining and perhaps also place greater trust in an estimated market price than do psychology students, the present findings may reflect a difference in credibility (Birnbaum & Stegner 1979; Birnbaum et al., 1992). Kristensen and Gärling (1996) likewise showed that low credibility attenuated the effect of an initial offer.

An unexpected finding was that if subjects performed ratings of satisfaction they tended to indicate a higher reservation price than if they did not perform such ratings. A reason may be that performing the satisfaction ratings directed subjects attention to the asked selling price. This did not, however, make them more susceptible to influences from the estimated market price and initial offer. Attention to the selling price may in itself result in more satisfaction, perhaps reflecting an impact on the loss frame usually adopted by buyers (Neale, Huber & Northcraft, 1987).
Table 2
Mean Indicated Reservation Prices (SEK) by Different Student Groups who Either Performed or Not Performed Ratings of Satisfaction With Asked Selling Price for High and Low Initial Offer and Estimated Market Price

<table>
<thead>
<tr>
<th>Initial offer and estimated market price</th>
<th>Low</th>
<th>High</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BA students</td>
<td>276,084</td>
<td>300,250</td>
<td>281,083</td>
<td>297,958</td>
</tr>
<tr>
<td>Psychology students</td>
<td>272,292</td>
<td>288,542</td>
<td>271,250</td>
<td>290,834</td>
</tr>
<tr>
<td>No ratings of satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BA students</td>
<td>266,250</td>
<td>285,208</td>
<td>268,334</td>
<td>288,750</td>
</tr>
<tr>
<td>Psychology students</td>
<td>271,875</td>
<td>287,708</td>
<td>275,000</td>
<td>291,166</td>
</tr>
</tbody>
</table>

Experiment 2

A question raised in Experiment 2 was whether or not a buyer's aspiration price in a price negotiation corresponds to his or her estimate of the seller's reservation price. To investigate this question one group of subjects playing the role of buyers was asked to indicate their aspiration prices while another group of subjects, likewise playing the role of buyers, was asked to estimate the seller's reservation prices.

It is easy to imagine that a buyer may acquire information about the seller's reservation price from an initial offer and an estimated market price. An additional question raised was therefore whether an initial offer and an estimated market price changes the buyer's estimates of the seller's reservation price. Consistent with the hypothesis of correspondence to the seller's reservation price, such changes were expected to similarly change the buyer's indicated aspiration prices.

As in Experiment 1, two initial offers which were higher than and two estimated market prices which were lower than the asked selling price were crossed in a factorial experimental design. Half of the subjects in the group who indicated their aspiration prices and half of the subjects...
in the group who estimated the seller’s reservation prices also performed ratings of satisfaction with the selling price.

**Method**

**Subjects**

Another nineteen male and 13 female undergraduate BA students and 8 male and 24 female undergraduate psychology students participated as part of a course requirement or in return for payment. On average the psychology students were 22.2 years old (SD=3.3), the BA students 24.9 years old (SD=4.9). An equal number of subjects in each student group was randomly assigned to two between-subjects conditions.

**Procedure**

The procedure was identical to Experiment 1 except that subjects were asked in one of the between-subjects conditions to indicate the lowest price at which they believed they could buy the condominium described to them, and in the other between-subjects conditions to estimate the lowest price at which they believed the seller would sell. The same tasks were performed in the prephase.

**Results and Discussion**

The mean ratings of satisfaction with the asked selling price transformed by subtracting 50 are given in Table 3. As may be seen, the results were similar although not identical to the results of Experiment 1. The BA students were on average satisfied with the selling price when the market price was high and dissatisfied when it was low, whereas the psychology students were on average dissatisfied with the selling price both when the estimated market price was high and when it was low. Only in the latter group did the initial offer appear to influence the ratings of satisfaction. A 2 (indicated aspiration price vs. estimated seller’s reservation price) by 2 (student group) by 2 (low or high estimated market price) by 2 (low or high initial offer) ANOVA yielded a significant main effect of estimated market price, $F(1, 28) = 38.65$, $p < .001$, $MS_e = 344.38$. However, neither the main effect of initial offer nor its interaction with student group quite reached significance, $F(1, 28) = 3.46$, $p < .10$, $MS_e = 115.71$, and $1.79$, $p < .20$, $MS_e = 115.71$, respectively. In addition, the interaction between estimated market price and initial offer was significant, $F(1, 28) = 5.49$, $p < .05$, $MS_e = 97.35$. In a previous experiment (Kristensen & Gärling, 1996, Experiment 4) no such interaction was
found. As revealed by Fisher-Hayter post hoc test at $p=.05$, a reliable effect of initial offer was confined to the high estimated market price.

Table 3

<table>
<thead>
<tr>
<th>Mean Ratings of Satisfaction With Asked Selling Price by Different Student Groups for High and Low Initial Offer and Estimated Market Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial offer and estimated market price</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Low</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Low</td>
</tr>
<tr>
<td>BA students</td>
</tr>
<tr>
<td>Psychology students</td>
</tr>
</tbody>
</table>

The effect of the estimated market price was reliable for both the low and high initial offer. In the previous experiment several factors were manipulated to make the estimated market price salient. In the present experiment, the high estimated market price was perhaps less salient because it was rather close to the asked selling price.

A comparison of the means of the estimated seller’s reservation prices and indicated aspiration prices in the prephase ($M= SEK 320,156$ and $M= SEK 320,000$, respectively) with the means of the subsequently obtained estimated seller’s reservation prices and indicated aspiration prices revealed that the mean prephase values were higher than those subsequently obtained. A 2 (indicated aspiration price vs. estimated seller’s reservation price) by 2 (student group) by 2 (ratings of satisfaction performed or not) by 2 (phase) ANOVA only yielded a significant main effect of phase, $F(1, 56) = 102.94$, $p< .001$, $MS_e = 437.39$. Table 4 shows the means in the subsequent phase. As may be seen, subjects estimates’ of the seller’s reservation price and their own aspiration prices consistently increased when the estimated market price was high as compared to when it was low. However, there was no effect of the initial offer. Furthermore, the estimated seller’s reservation prices were overall slightly higher than the indicated aspiration prices. A 2 (indicated aspiration price vs. estimated seller’s reservation price) by 2 (student group) by 2 (ratings of satisfaction performed or not) by 2 (low or high estimated market price) by 2 (low or high initial offer) ANOVA yielded a significant
main effect of estimated market price, $F(1, 56) = 4.27$, $p < .05$, $MS_e = 3990.56$. In addition there was a significant main effect of whether subjects indicated aspiration prices or estimated seller’s reservation prices, $F(1, 56) = 5.11$, $p < .05$, $MS_e = 889.25$.

Table 4

| Mean Indicated Aspiration Prices and Estimated Seller’s Reservation Prices (SEK) by Different Student Groups for High and Low Initial Offer and Estimated Market Price |
|---|---|---|---|
| Initial offer and estimated market price | Low | High |
| Low | High | Low | High |
| Indicated aspiration prices | | | |
| BA students | 274,688 | 287,188 | 276,875 | 287,344 |
| Psychology students | 272,188 | 285,165 | 272,031 | 285,469 |
| Estimated seller’s reservation prices | | | |
| BA students | 281,719 | 292,812 | 282,500 | 292,969 |
| Psychology students | 278,594 | 287,969 | 280,000 | 292,031 |

The interaction between student group and whether or not subjects performed ratings of satisfaction was reliable, $F(1, 56) = 4.65$, $p < .05$, $MS_e = 889.25$. As Fisher-Hayter post hoc tests indicated at $p = .05$, for the BA students there was a reliable decrease when they performed ratings of satisfaction as compared to when they did not ($M = 280,050$ as compared to $M = 288,050$ for the BA students, $M = 283,830$ as compared to $M = 279,530$ for the psychology students). Thus, the effect was reversed from that observed in Experiment 1. In addition, the BA students rather than the psychology students were influenced by performing the ratings of satisfaction. Given these differences, it is questionable whether the effect is real.

A main finding of Experiment 2 was that the estimated seller’s reservation prices and the indicated aspiration prices were influenced by the estimated market price in the same way as the indicated reservation prices were in Experiment 1. If the buyer’s aspiration price corresponds to
an estimate of the seller’s reservation price, it is possible that the effect of the estimated market price on the aspiration price is mediated by subjects’ notions of information affecting the seller’s reservation price or reference point. As expected, across conditions there was a close correspondence between indicated aspiration prices and estimated seller’s reservation prices. However, although no reliable difference was found in the prephase between the group that indicated aspiration prices and the group that estimated seller’s reservation prices, such a difference was found in the subsequent phase. Overall, the indicated aspiration price was lower than the estimated seller’s reservation price. Thus, it appears that when a buyer adopts an aspiration price, he or she takes into account other factors in addition to an estimate of the seller’s reservation price.

Experiment 3

In both Experiments 1 and 2 an initial offer had no or weak effects on the ratings of satisfaction with the selling price. In Experiment 2, the absence of such an effect made it difficult to rule out the possibility that an initial offer directly influences a buyer’s estimates of the seller’s reservation price and indirectly influences his or her aspiration price. An attempt was therefore made in Experiment 3 to strengthen the effect of an initial offer. In a between-subjects design which partly replicated a previous experiment (Kristensen & Gärling, 1996, Experiment 4) showing such an effect, different groups of subjects playing the role of buyers were presented an initial offer which was either higher than or an initial offer which was equal to the asked selling price. In addition to ratings of satisfaction with the selling price, half of the subjects in each group indicated their aspiration prices and the other half of the subjects estimated the seller’s reservation price.

Method

Subjects

Forty-two male and 30 female undergraduate BA students participated as part of a course requirement. On average subjects were 24.1 years old (SD=4.6). An equal number of subjects was randomly assigned to each of four conditions.

Procedure

As in the preceding experiments, subjects answered a brief questionnaire. Subjects were told to imagine that they were assigned the role of
buyers of a condominium. On the basis of actual market information, they first indicated the highest price they would pay for a particular condominium which was described to them. Thereafter, on separate pages in the questionnaire, they were presented six asked selling prices of condominiums, varying in equal steps from SEK 260,000 to SEK 350,000, which they were interested in buying. All subjects were asked to imagine that the seller had first advertised a price in a newspaper, then, when contacted by the subject, he or she asked another price. For one group of subjects the selling price was SEK 40,000 lower than the initially offered price and for another group the asked selling price was the same as the initially offered price. An estimated market price was also available at this point in time which was always SEK 40,000 lower than the selling price.

All subjects made a rating of how satisfactory or unsatisfactory the asked selling price was on a scale ranging from 10 (very unsatisfactory) to 90 (very satisfactory) with a midpoint of 50 (neither satisfactory nor unsatisfactory). Half of the subjects in the condition where the initial offer was higher than the selling price and half of the subjects in the condition where it was equal to the selling price also indicated the lowest price at which they believed they could buy the condominium. The other half of the subjects in these conditions estimated the lowest price at which they thought the seller would sell. Half of the subjects in each group made the ratings of satisfaction first and the other half of the subjects made the ratings of satisfaction last.

**Results and Discussion**

Table 5 gives the mean ratings of satisfaction with the asked selling price transformed by subtracting 50. As can be seen, on average the selling price was rated as negative when it was equal to the initial offer but rated as slightly positive when it was lower than the initial offer. This was substantiated by a 2 (indicated aspiration price vs. estimated seller’s reservation price) by 2 (ratings of satisfaction first or last) by 2 (equal or higher initial offer) ANOVA yielding a highly significant main effect of initial offer, $F(1, 64)=28.70$, $p<.001$, $MS_e=676.34$. No other effects reached significance at $p=.05$.

Table 5 also shows that the indicated aspiration prices were on average almost identical to the estimated seller’s reservation prices and that neither were affected by the initial offer. A 2 (indicated aspiration price vs. estimated seller’s reservation price) by 2 (ratings of satisfaction first or last) by 2 (equal or higher initial offer) ANOVA, yielded no significant effects (all $Fs<1$).

More unequivocally than in Experiment 2, the results thus suggested a close correspondence between a buyer’s indicated aspiration price and his or her estimate of the seller’s reservation price. Although an initial offer appeared to change the subjects’ own reservation price (reference point), subjects did not seem to infer that the seller was similarly affected.
This is in contrast to the results of Experiment 2 where such inferences followed from information about an estimated market price.

Table 5

<table>
<thead>
<tr>
<th>Initial offer</th>
<th>Equal</th>
<th>Higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ratings of satisfaction</td>
<td>-13.0</td>
<td>0.1</td>
</tr>
<tr>
<td>Indicated aspiration price</td>
<td>278,600</td>
<td>277,810</td>
</tr>
<tr>
<td>Estimated seller’s reservation price</td>
<td>277,760</td>
<td>277,890</td>
</tr>
</tbody>
</table>

General Discussion

In line with the hypothesis, a main finding of the present Experiment 1 was that subjects who played the role of buyers in a price negotiation adopted their reservation price as a reference point. This is consistent with White et al. (1994) who found that the reservation price is a dominant reference point. In accordance with the characteristics of a reference point (Kahneman, 1992), in a price negotiation identical selling prices are thus perceived by buyers as gains or losses depending on whether the selling prices are lower or higher than the reference point. A further contribution of the present research was to show that the reservation price (the reference point) changes depending on information such as an estimated market price.

Despite supporting the main hypothesis, an unexpected outcome of Experiment 1 was that an initial offer made by the seller only had a weak impact on the indicated reservation prices. Neither in Experiment 1 nor in Experiment 2 did the initial offer consistently affect the ratings of satisfaction with the selling price, which is contrary to what has been found in a previous study conducted under rather similar conditions (Kristensen &
Gärling, 1996). In line with the previous results, the initial offer did however have an effect on the ratings of satisfaction in Experiment 3. A possible reason is that if the initial offer is varied in a within-subject design at the same time as the estimated market price subjects may be unable to attend to both factors. Another possibility is that the differences between low and high initial offers were too small in the present Experiments 1 and 2 as compared to those experiments where the initial offer had an effect.

The results of Experiment 2 showed that a buyers' aspiration price may change with information about an estimated market price. However, no such change with the initial offer was found in neither Experiment 2 or in Experiment 3. That aspiration levels change has been shown in previous research (Guth, Schmitberger, & Schwarze, 1982; Loewenstein, Thompson, & Bazerman, 1989). An explanation for the present findings may be related to the close correspondence, in particular in Experiment 3, between the indicated aspiration prices and the estimated seller's reservation prices. If buyers, at least in part, take into account what they believe is the seller's reservation price in adopting an aspiration price, then it is likely that they attempt to predict how different information such as an estimated market price would affect the seller's reservation price. In other words, if an estimated market price is high, the buyer may infer that the seller raises his or her reservation price. Accordingly, the buyer will likewise raise his or her aspiration price. Of course, additional factors like other available goods on the market, degree of competition, or individual differences in greediness and conceptions of fairness may affect the aspiration price. Perhaps reflecting an overconfidence bias (Einhorn & Hogarth, 1978), in Experiment 2 subjects indicated aspiration prices which were lower than the estimates of seller's reservation prices. Further research is clearly needed both to verify the present hypothesis that a buyer's aspiration price is in part based on an estimate of the seller's reservation price and to disentangle the factors affecting the latter.

To summarize, the present results quite clearly showed that in price negotiations a buyer's reservation and aspiration prices are not static. Of course, whether or not this would be true in the course of a single price negotiation cannot strictly be concluded. In addition, it is inferred that the reservation price is adopted as a reference point. Thus, selling prices higher than the reservation price (reference point) are losses whereas selling prices lower than the reservation price are gains. It is further inferred that buyers adopt an aspiration price on the basis of their estimates of the seller's reservation price. Changes in the latter may account for the observed changes in the aspiration price.

References


