The Effects of Price Promotion on Consumers' price beliefs

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ABSTRACT

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Reference prices, which are extensively used in retail advertisements, have received considerable research attention over the last 25 years. The present research looks at the extent to which an advertised, or external, reference price included in a price promotion affects consumers' price beliefs. According to Helson's Adaptation-Level theory, consumers form an internal reference price, which they use as a basis for evaluating market prices. The process by which internal reference price can change according to an external reference price is, then, explained by a conjoint Adaptation-Level and Assimilation-Contrast theories. It is suggested that consumers may assimilate or contrast an external reference price and that only an assimilated price has the ability to affect the internal reference price. A first experiment was conducted to examine the extent to which consumers assimilate an external reference price. Findings from the present research suggested that, contrary to the predictions of the Assimilation-Contrast theory, the impact of an external reference price on consumers' internal price standards was monotonic. It was further suggested that this assimilation might be moderated by individual differences. A second experiment was conducted to examine the differential effects of two types of semantic cues. However, in the research, no differences were found between absolute and relative savings presentation formats. Findings as well as several issues about the measurement of internal reference price, the effects of an exaggerated external reference price and the effects of price familiarity are discussed.

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INTRODUCTION

Pricing is an issue that has received considerable attention in marketing. Price is a critical factor in the consumer's buying process, as it is one of the most important attributes a consumer uses when making a purchase decision. A consumer perceives an actual price of a product and makes a judgment about it. This perception leads to a perception of the value of the transaction that conducts directly to the decision of purchasing the product or not (For a review of the buying process, see Rao and Monroe, 1989).

Price perception theories study how consumers evaluate and make judgments of market prices. There is evidence of price perceptions being relative to other prices (Thaler, 1985). While consumers can refer to other market prices to make their judgments, they can also rely on their internal reference price. Consumers form an internal reference price for each product category and use it to assess other market prices (Monroe, 1990). Thus, price evaluation is such that, above a particular price, the sale price of a product is perceived as "too high", representing a too high amount of money to spend, and below another price, it is considered as "too low", constituting a risk of not providing an adequate value (Campbell, 1999).

It is important for marketers to determine a price that will be perceived positively by consumers. Once they set the sale price, they can implement different techniques to make it more attractive to consumers. Price promotion may be the most powerful tool (Compeau and Grewal, 1998). It can be manipulated and used in many ways. The most common are coupons, rebates, and price comparison. Sellers often use a comparative

price framework to introduce to buyers price information by indicating an external reference price (the price that one should pay normally or "regular price") and a lower sale price (the amount of money a consumer has to pay to get the product). The aim of a price promotion is to influence buyers' price perception by showing a high external reference price and to enhance transaction value by showing the relatively low cost of purchasing the product (Blair and Landon, 1981; Urbany, Weilbaker and Bearden, 1988). In sum, sellers want to show that there is a good deal.

Researchers have used Assimilation-Contrast theory (Sherif and Hovland, 1968) to explain how external and internal reference prices interact to influence consumers' perception of a sale price. It has been suggested that consumers first evaluate the external reference price in terms of acceptability (Lichtenstein, Bloch and Black, 1988). An external reference price that is perceived as neither too high nor too low is generally assimilated. Available research suggests that an assimilated external reference price generates a shift in internal reference price towards the assimilated price (Lichtenstein and Bearden, 1989; Lichtenstein, Burton and Karson, 1991). Oppositely, an external reference price that is considered as exaggerated (too high) is likely to be contrasted, and is not expected to generate any change in consumers' internal price standards (Alford and Engelland, 2000). However, the relationship between external and internal reference prices is still unclear, and past research's findings have not been consistent regarding the extent to which consumers' assimilate an exaggerated external reference price (Allford and Engelland, 2000; Biswas and Blair, 1991; Lichtenstein et al., 1991, Urbany et al., 1988).

Research objectives and significance of the study

The aim of the present research is to better understand why and how a price promotion affects consumers' internal reference price (IRP)[1] and subsequent perceptions and evaluations. In particular, the following three research questions are addressed: (1) To what extent do consumers assimilate an external reference price (ERP)? The assimilation of an ERP refers to the change in IRP due to the ERP. In other words, whether the presence of an external reference price influences consumers' price beliefs, this research seeks to describe how different ERP levels generate different changes in consumers' IRP and individual responses. (2) Do individual differences affect the extent to which the external reference price is assimilated? Assuming that some consumers are more likely than others to be influenced by a price claim, three individual variables are studied for their potential moderating effect on ERP assimilation. (3) Do factors related to the price promotion influence consumers' change in IRP? More precisely, this paper investigates the effects of two savings presentation format ($-off and %-off).

Price is a critical factor that is strongly linked to purchase intention and behavior. The behavior of a consumer is mainly shaped by the way s/he perceives prices. Any effect on his/her internal reference price is likely to affect this perception. Thus, it is very important for marketers to have a clear understanding of the effects of their pricing practices on consumers' internal reference price. The present research provides important managerial implications, as it gives the opportunity to make strong recommendations to retailers on how to optimize their pricing strategies. An inappropriate external reference

[1] Internal reference price and IRP are used interchangeably; external reference price and ERP as well.

price may have no effect on consumer's internal reference price and, as a result, be ineffective. In addition, the selection of a poor savings presentation format may inhibit the effects of an appropriate external reference price. The results of this study may help practitioners to select the optimal discount level for their price reduction and to select the best possible presentation format for their price promotion claims, given the product they are promoting. This research also has important theoretical implications. It provides additional evidence of and explanations for the role of internal reference price in consumers' evaluations of prices and summarizes the effects of different external reference prices on IRP. Individual difference variables have not received a lot of attention in pricing research, but their inclusion in pricing research has been hugely demanded in recent publications. The research also extends existing knowledge with the study of two particularly relevant savings presentation formats ($ and %), a critical issue that has not been completely addressed in previous research.

The present research paper addresses these issues in an extension of prior research regarding the role of internal reference price in price perception. In a first part, a review of literature defines the concepts and theories used for the study. Three sets of hypotheses are then derived. The second chapter consists in the methodology that was used to test the research hypotheses, the data analysis, and the results. A general discussion is made in the third chapter.

Chapter I: LITERATURE REVIEW

The first section of this first chapter explains the need to investigate the effects of different levels of external reference price on consumers' internal reference price. The second section integrates in the study three individual variables, need for cognition, value consciousness and coupon proneness, as potential moderators of consumers' ERP assimilation. Finally, the last section introduces savings information and two kinds of presentation formats ("Save _$" and "Save _%"). The potential effects of framing the savings are discussed.

1. Consumers' assimilation of an external reference price

This section consists of a review of existing literature on price perception with a view to determining the extent to which consumers assimilate an external reference price. Reference prices are defined in a first point. The process through which consumers perceive price promotions is, then, discussed, which leads to the derivation of several hypotheses regarding consumers' assimilation of an external reference price.

1.1 Reference prices

When making a purchase decision, consumers do not respond to prices absolutely, but rather relative to a reference price (Thaler, 1985). A reference price can be defined as any price in relation to which other prices are perceived (Biswas and Blair, 1991).

Reference prices can be internal or external to consumers' memory. When considering an offer price, a consumer forms an internal reference price that is used to make an evaluation. The location of the reference price affects the coding of outcomes, which, in turn, affects attitudes (Kahneman, 1992). In order to influence this location, retailers sometimes advertise an external reference price, which is expected to be used as the point of reference. Some researchers said that the external reference price might sometimes substitute for the internal reference price (Rajendran and Tellis, 1994, Kumar, Karande and Reinartz, 1998). Mazumdar and Papatla (2000) argued that the weight given to the internal or the external reference price is product-category dependant. It may be appropriate to argue that consumers compute both internal and external reference prices to form a final reference price that would be used for the evaluation of the offer. Before turning to a discussion on the formation of a final reference price, both internal and external reference prices are clearly defined.

1.1.a) Internal reference price

Price perception has been defined as the process by which consumers translate prices into meaningful cognitions (Lichtenstein, Bloch and Black, 1988). Consumers use an internal reference price (IRP) in perception of price concepts. The internal reference price is retrieved from memory to form the cognitive reference point for evaluating market prices (Biswas and Blair, 1991; Lichtenstein, Burton and Karson, 1991). As explained by Puto (1987), the reference point is a factor that determines the perspective through which a decision-maker creates the alternatives in a decision problem. With regards to price perception, the internal reference price is the main factor that is used by a

consumer to evaluate external price information. Thaler (1985), for example, mentioned perception of a fair or "just" price. In other words, a consumer uses his/her internal reference price to consider an external price as fair or unfair. Take the example of someone who wants to purchase the most basic DVD player. Assume that the price he thinks is fair to charge for this product is $100. If the actual sale price for the product is $200, he might perceive it as unfair.

Internal reference price has been either measured by asking consumers directly in experimental research (see table 1.1.a) or estimated indirectly using scanner data (see table 1.1.b). The tables show that internal reference price has been conceptualized in various ways in pricing research. The variety is such that it may be impossible to use the term unambiguously (Jacobson and Obermiller, 1990). They suggest that there is a need for giving a precise definition and selecting appropriate measures in order to capture the concept. A review of various conceptualizations of internal reference price in past research helped defining the internal reference price for the present research.

Some researchers have considered internal reference price as a consumer's recall of previous prices paid (Mazumdar and Papatla, 2000; Kalyanaram and Little, 1994; Mayhew and Winer, 1992). For example, someone who is purchasing a tie may try to remember how much were the prices for the ties he already owns. The major limitation of this conceptualization is that consumers might not always have the ability to recall prices accurately, or even not have enough price knowledge to relate past prices to current prices (Dickson and Sawyer, 1990). In addition, it has been recognized that buyers may be influenced not only by what they have learned about prices and price relationships from previous experience, but also by other information present in the purchase

environment (Monroe and Lee, 1999). Thus, this conceptualization has been extended to include environmental cues such as other prices in the store (Rajendran and Tellis, 1994; Winer, 1986).

Other researchers considered internal reference price as being a reservation price (Chandrashekaram, 2001). In this conceptualization, the target price is formed on the basis of consumers' experience with or knowledge about prices as well as their budget constraints. For example, someone who wants to travel to Mexico may reserve a price at $900. This reservation price represents the upper limit to her budget. A higher sale price would be evaluated negatively as, then, she could not afford the trip or she would prefer to go skiing. A major limitation is that this conceptualization is appropriate for only limited purchase situations. The consideration of internal reference price as being the formation of a price that consumers would expect to encounter has also frequently been made (Alford and Engelland, 2000; Janiszewski and Lichtenstein, 1999; Jacobson and Obermiller, 1990; Mobley et al., 1988; Urbany et al., 1988). This conceptualization seems to be more valid. Indeed, it considers IRP not only as emerging, at least partially, from consumers' knowledge of prices or purchase experience, but also as the formation of a reasonable price, which is based on consumers' evaluation of external information, and which should be observed in the marketplace.

Table 1.1.a

An overview of the main conceptualizations and alternative measures of IRP in experimental research

	Expected Price	Other conceptualizations	Theories associated with IRP
Chandrashekaram, 2001	Normal	Fair, Reservation, Lowest P seen	No
Alford and Engelland, 2000	Lowest, Highest and Average		Social Judgment
Janiszewski and Lichtenstein, 1999	Expected P to pay, Most and Least P willing to pay		AL vs Range theory
Slonim and Garbarino, 1999	Expected P to pay, Most P willing to pay	Fair	AL
Chandrashekaram et al., 1996	Most would pay, Normal	Fair, Lowest P seen	No
Bearden et al., 1992	Normal, Expected P to pay, Average, Most would pay, Indifferent, Highest to search	Fair	Acquisition-Transaction Utility
Biswas and Blair, 1991	Lowest, Highest, Average and Normal		AL, AC
Lichtenstein, Burton and Karson, 1991	Lowest, Normal	Fair	AL, AC
Lichtenstein and Bearden, 1989	Lowest, Normal	Fair	AL, AC
Urbany et al., 1988	Lowest, Normal, Average		AL, AC
Liefeld and Heslop, 1985	Ordinary		
Thaler, 1985		Fair	

Table 1.1.b

An overview of the main reference price models *(Adapted from Briesch et al., 1987)*

	Based on Past Prices	Based not only on Past Prices, but also on Current Prices and Other Information
Mazumdar and Papatla, 2000	Exponentially smoothed composite of the prices of a brand faced by a consumer during entire purchase history	
Kalyanaraman and Little, 1994		
Rajendra and Tellis, 1994	Geometric mean of last three periods' prices of the respective brands	Average of the highest, lowest, and mean of current price of a brand
Krishnamurthi, Mazumdar and Raj, 1992	Brand's price on the last purchase occasion	
Mayhew and Winer, 1992	Brand's price on the last purchase occasion	
Jacobson and Obermiller, 1990		Expected Future Price based on Past and Current Price information
Kalwani et al., 1990		A function of the brands' last five period prices, frequency of promotion, price trend, deal proneness of the household, and store characteristics
Lattin and Bucklin, 1989	Exponentially smoothed composite of the prices of a brand faced by a consumer during entire purchase history	
Winer, 1986		A function of last period's price, price trend, and market share of the brand

In the present research, and consistent with Winer's definition of an internal reference price (1986), IRP is considered as the price a consumer expects to pay or observe at the point of purchase. This conceptualization is also consistent with Puto's conceptual model of the buying decision framing process, which suggests that a reference point in decision-making is partially determined by the decision maker's initial expectations. It is important to report that the conceptualization of IRP as a point estimate of some expected prices is only one alternative representation. Yet, this particular conceptualization is of considerable importance in the purchase decision (Jacobson and Obermiller, 1990) and seems relevant for the present research.

Rather than a single price of reference, internal reference price has been considered as a range of prices consumers use in evaluating the magnitude of other prices (Compeau and Grewal, 1998; Lichtenstein and Bearden, 1989). This vision is mostly explained by the variety of definitions that IRP received in the literature. Consumers store, retrieve and use a rich array of price information to make their judgments (Niedrich, Sharma and Wedell, 2001). Based on Volkmann's Range theory (1951), Niedrich et al. proposed that judgments are based on comparisons to specific category members rather than to a single price that would summarize information. Consumers have a sense of a range of prices, and the two prices defining it may sometimes account for the reference price mechanisms (Janiszewski and Lichtenstein, 1999). Thus, it is arguable that a consumer may develop reference points for the lowest expected price as well as for the highest price s/he expects to see. As a consequence, IRP is more broadly defined as the range of prices a consumer expects to encounter on the market. The attractiveness of a market price is function of its relative location within this range

(Janiszewski and Lichtenstein, 1999). Consumers' assessments are made such that prices that are above the upper threshold of the range are considered as 'high', and prices that are below the lower limit are seen as 'low'. As this range or scale of expected prices is specific to the consumer, it is assumed that it may vary in its wideness (difference between the higher and the lower price thresholds) and objectivity (difference between the mean price of the scale and the actual or objective price). Based on his/her own IRP, each individual assigns unique meaning to the objective sale price while translating it to a perceived price (Lichtenstein et al., 1988). Because the range of internal prices varies across consumers, an objective price cue may be coded cognitively as 'expensive' by some consumers, and as 'cheap' by some others (Dodds, Monroe, and Grewal, 1991). Clearly, perceptions of the same price stimulus may vary across consumers and for one consumer, across products, purchase situations and time (Cooper, 1969).

Internal reference price range is in the mind of the consumer, specific to the consumer, and not present in the physical environment, whereas external reference prices are price stimuli present in the physical environment and not consumer specific (Mayhew and Winer, 1992).

1.1.b) External reference prices

External reference prices are provided by observed price stimuli in the purchase environment (Mayhew and Winer, 1992). Such stimuli could be provided by point-of-purchase shelf tags, or by the actual price of another product against which the sale price of interest can be compared (Kumar, Karande and Reinartz, 1998). In other words, external reference prices could be the prices of any brand in the category at the time of

the consumer's purchase. However, in the present research, ERP is considered as an external reference price for a given product that is advertised by a retailer. Three basic formats of advertised ERP are commonly used in price promotions: Former price, Manufacturer Suggested List of Prices, and Competitor's prices (Della Bitta et al., 1981). Retailers have developed these three different uses of reference prices as they always try to find new ways of making a promotion more appealing. This willingness to appeal to consumers has lead some retailers to deceive consumers with showing false reference price claims. This point underlines the importance to study the extent to which consumers' assimilate an external reference price in order to check if an exaggerated claim can affect they internal reference price and mislead them in their evaluation of the offer. It has already been recognized that consumers may not always be able to protect themselves against deceptive price claims, which have forced regulators to control the techniques used. The Federal Trade Commission (FTC) controls the use of any of these formats. FTC provides guidelines for advertisers when using external reference prices in order to prevent any deceptive pricing. Three sections (from 233.1 to 233.3) deal directly with the three kinds of reference prices that have been mentioned previously and are described as follows (the following description is adapted from Biswas et al., 1999):

1. Former Price Comparisons: when a retailer uses an advertisement such as "Formerly sold at $10; Now only $7.5", he or she is required to have offer the product at the regular price mentioned in the ad ($10) for a substantially long period. The FTC has mandated this guideline so that

retailers do not use, in their advertisements, reference prices that are fictitious prices at which the product was never sold".

2. Retail Price Comparisons: this point considers an advertisement in which a retailer compares his or her sale price to a competitor's. As in the previous point, it is required that the price of comparison is a prevailing price at a similar store in the same market, for a product of the same quality and grade. This guideline is to prevent retailers from making deceptive claims and exaggerated comparisons.
3. Advertised retail prices suggested by manufacturers: a suggested retail price is typically the price at which the product should be sold, as recommended by manufacturers. To prevent confusion, this FTC guideline states that retailers may use this form of advertising only when a large enough number of units of the product are sold at the suggested list price.

While it has been recognized that exaggerated price may deceive consumer, it is important to examine the extent to which consumers assimilate an external reference price. As explained in the introduction, external reference price advertising strategies can be used in a way to raise consumers' internal price beliefs. As the reference point is used as a basis in price perception, a rise in IRP would result in more favorable evaluations of the sale price and offer value. The next section presents theories to explain the relationship between internal and external reference price concepts.

1.2. The assimilation process

Available research indicates that an internal reference price is derived from both experiences with the product and information in the environment. While the manner by which consumers form IRP is largely unspecified (Lichtenstein and Bearden, 1988), it is suggested that consumers' initial internal reference price and the external reference price interact to form a final IRP, which is used to evaluate the sale price. This relationship can be conceptualized in a conjoint Adaptation-Level and Assimilation-Contrast theories.

1.2.a) IRP formation

As seen in the definition of IRP, the reference point is probably made of initial expectations and forms the basis for subsequent sale price and offer evaluations. Despite considerable evidence on the importance of expectations in decision-making, it has been noted that no general theory of expectation formation exists (Sheffrin, 1983). Adaptation-Level theory, however, accounts for the antecedents of reference points and their modifications over time and has been widely used in internal reference price research.

Originally proposed by Helson (1948; 1964), Adaptation-Level theory explains that stimuli are perceived only in relation to an adaptation-level. As regards price stimuli, market prices are compared to an adaptation-level price, which is actually the internal reference price that consumers form to make their judgment. IRP is based on expectations and is formed at the time when the consumer faces external information about a product before making a decision. The consumer creates an IRP as a function of external stimuli and their content, and what s/he remembers about past prices or the frequency with which

a product has been promoted. It reflects what the consumer has been accustomed to (Biswas and Blair, 1991; Kalwani et al. 1990). For example, at the time of a TV set purchase decision, a consumer forms an internal reference price as a result of what s/he has experienced about TV sets as well as of the environmental cues that surrounds him/her. The literature on price expectations suggests that an expectation is an integration of all relevant information (Compeau and Grewal, 1998). It is usually a result of the buyer's internal assessment of environmental conditions. An initial reference point, which is based on the consumer's initial expectations, is subject to many influences while the decision-maker is gathering information in the early stages of the decision process (Puto, 1987). As a result, the initial internal reference price is likely to be modified by additional information that the buyer can find in the market for the item being purchased.

Adaptation-Level theory suggests that IRP is a primary cue that can be influenced by other, focal cues. Focal cues are information on which the consumer focuses. They consist of the available prices on the market (external reference and sale prices) and other relevant product information (Biswas et al., 1999). Thus, the initial internal reference price may be modified by additional information on which the consumer focuses, such as the content of a supplier's sales message, to form a final internal reference price that will be used as a basis for subsequent evaluations. In the context of a price promotion, an external reference price may have the ability to influence the initial internal reference price. It can draw it in its direction, or even substitute for it (Biswas and Blair, 1991).

The process, by which an external reference price is though to influence consumers' IRP and, as a result, offer evaluation, can be illustrated as follows[1]. As discussed, at the time of making a decision to purchase a given product, a consumer forms an IRP as a result of his experience with the product as well as of relevant external information. This IRP serves as the basis for his/her evaluation of the sale price. Sellers may want to include in the environment of the consumer information that would be encoded in the IRP formation. This would result in the formation of a higher IRP, which would generate more favorable responses to the offered price. For example, a student wants to purchase a particular type of calculator. From his experience with calculator purchases (the one he bought when he was in high-school, when his friend bought one two months ago, or the one he saw in a magazine) and from what he sees in the environment (he is shopping in a mall in downtown Montreal), he expects to encounter a $79 sale price, which represents his IRP as conceptualized in the present research. Assume that the sale price is $99. The student may perceive this sale price as a high amount of money to spend and probably judges it as 'too high'. As a result, his perception of the offer might be poor, and rather than purchasing the product now, he may prefer to search elsewhere for a lower price. Now, assume that the $99 sale price was presented with a $139 retail price suggested by the manufacturer. This ERP would probably be considered by the student as a relevant piece of information that he wants to process. This claim may serve to shift his IRP in the direction of the ERP. Thus, a new and final, higher IRP would be used as a basis for price comparison. The same $99 sale price may be evaluated more favorably than if no ERP was provided. The student may perceive a good deal and probably decide to purchase the calculator.

[1] Adapted from Lichtenstein and Bearden (1988)

Thus, an external reference price would have the power to modify consumers' initial price beliefs. Assimilation-Contrast theory (Sherif and Hovland, 1961) has been used in conjunction with Adaptation-Level theory to explain how an external reference price may influence the internal reference price.

1.2.b) IRP change

When interpreting and evaluating price cues, consumers first make a judgment of their acceptability. Price acceptability is a judgment of price based on a comparison of the price cue to a range of acceptable prices stored in memory (Lichtenstein, Bloch and Black, 1988). Thus, using the framework of the Assimilation-Contrast theory, it has been suggested that, when interpreting a price promotion, consumers develop a latitude of price acceptance around their price beliefs and a latitude of price rejection that are used as guidelines to speed price evaluation (Alford and Engelland, 2000; Biswas and Blair, 1991). The ERP is first evaluated in terms of acceptability. An acceptable ERP is perceived as a credible bit of additional information and is assimilated. Whether this perceived credible or plausible ERP falls close to the highest perceived acceptable price, it is likely to generate a shift of IRP towards the assimilated price (Lichtenstein and Bearden, 1989; Lichtenstein, Burton and Karson, 1991). It can be argued that for small to moderate discrepancies between the ERP and consumers' IRP, the external information is likely to be believed, resulting in the assimilation, or at least the assimilation with discount, of the difference (Alford and Engelland, 2000). However, in the condition of a too small discrepancy, Raman and Bass (1988) applied the Assimilation-Contrast theory to postulate a region of price insensibility around IRP such that changes in price within

that region produce no marked changes in perceptions. On the opposite, whether the discrepancy is too large, the ERP may fall in the latitude of rejection and is likely to be perceived as implausible, or exaggerated. Consumers may question the credibility of the information, and may contrast the ERP. However, the outcome of a contrast is not clear yet and is the focus of the next paragraph.

Following Assimilation-Contrast theory's predictions, a contrasted ERP may be ignored and its effects on IRP would not be different than whether there were no ERP. Recently, Alford and Engelland (2000) conducted a research on the effects of advertised reference prices on consumer price estimates. Their findings suggested that an implausible ERP have no effects on consumers' internal price continuum, perception of value, or intention to search. Another possibility is that a contrasted ERP would be rejected, resulting in negative reactions towards the retailers' attempt at deception. However, this scenario has been disconfirmed in the past literature. Another proposition has received much more attention by researchers. It has also been proposed that an exaggerated ERP would rather be discounted, still raising consumers' IRP. Blair and Landon (1981) suggested that, although consumers may be skeptical of reference prices, they may still be influenced. They found that, although the full savings claims made by reference prices were not accepted, an exaggerated external reference price had the potential to increase consumer's estimates of the savings. Urbany and his associates (1988; p.97) proposed that: "discounting takes place when the consumer doubts the credibility of the advertised reference price, but instead of rejecting it outright, simply reduces it to a level deemed more reasonable for the product". They found evidence that a contrast effect leads to price discounting. Similarly, Lichtenstein and Bearden (1989) and

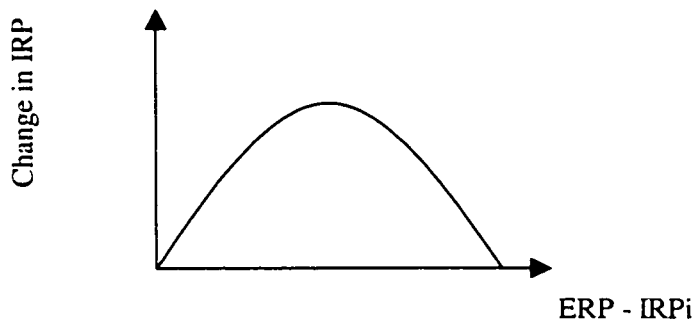
Lichtenstein et al. (1991) demonstrated that implausible external reference prices had the ability to deceive consumers by raising their internal reference price.

From what has been said, ERP does have the ability to raise consumers' IRP. In addition, it seems that its level may moderate these effects. Lichtenstein and Bearden (1989) suggested that, if an IRP displacement occurs under the influence of a contrasted ERP, it is expected to be small in comparison with an IRP shift under an assimilation effect. In addition, if an ERP falls into the latitude of price acceptance, yet well below the highest price estimate, it is expected to be believed, yet resulting in not much effect on IRP (Lichtenstein et al., 1991). Thus, it seems that a moderate or high but plausible ERP would result in a greater shift in IRP than an exaggerated or implausible ERP or that a plausible but low ERP. Biswas and Blair (1991) assumed that "the size of the discrepancy (ERP – initial IRP) should have an inverted-U relationship with the amount of belief change" (p4). This assumption supports the idea that the acceptance or rejection of external reference prices may not be abrupt.

Thus, the literature clearly suggests that the change in internal reference price due to the assimilation of an external reference price has an inverted-U shaped relationship with the difference between the ERP and the initial IRP. This relationship can be illustrated as in figure 1.1:

Figure 1.1

Consumers' assimilation of an external reference price



Therefore, the following hypotheses can be derived:

H1a: In the condition of a moderate ERP, the change in consumers' IRP is greater than the one in the condition of a low ERP.

H1b: In the condition of a moderate ERP, the change in consumers' IRP is greater than the one in the condition of a high, exaggerated ERP.

The following part extends existing research on consumers' assimilation of an external reference price with investigating the potential moderating effects of three individual variables: need for cognition, value consciousness and coupon proneness.

2. The role of individual differences

The second research question considers the role of individual differences on the effectiveness of a price promotion at influencing consumers' price beliefs and subsequent evaluations. This consideration is based on the assumption that there may be some consumers that are more susceptible than others to be influenced by an external reference price. Dickson and Sawyer (1990) argued that shoppers are heterogeneous in terms of attention and reactions to prices and price promotions. Several individual difference variables have been hypothesized to influence price encoding (Jacoby and Olson, 1977). Inman, McAlister and Hoyer (1990) found that individuals who differed in terms of need for cognition responded differently to price promotion signals. Price consciousness and product involvement have also been found to influence judgments of price acceptability (Lichtenstein, Bloch and Black, 1988). More recently, Chandrashekaran (2001) also found that involvement played an important role in price perception. He underlined the importance of investigating the role of individual difference variables in pricing research. Studying the effects of retail advertisement formats on different populations can give new insights on the role of an external reference price in price promotion.

In particular, consumers who differ in need for cognition, value consciousness and coupon proneness may respond differently to price promotions. The definition of each individual variable and the discussion of their potential moderating effect on ERP assimilation are presented in the following points.

2.1. Need for cognition

Need for cognition (NFC) was first conceptualized as a need to understand and make reasonable the experiential world (Cohen, Stotland, and Wolfe, 1955). Researchers have associated need for cognition with ambiguity intolerance, tension reduction and need for structure (Cacioppo et al., 1996). Cacioppo and Petty (1982) proposed that need for cognition reflects a stable individual difference in people's tendency to engage in and enjoy effortful cognitive activity. Since then, need for cognition has become a research interest in fields ranging from social psychology, developmental and cognitive psychology to behavioral medicine, education, law and marketing (Cacioppo et al., 1996).

Both types of individuals, high and low in need for cognition, tend to derive meaning, adopt position, and solve problems by somewhat different means. Individuals who differ in terms of need for cognition have been posited to differ in terms of their tendency to actively acquire information about relevant stimuli and to engage in effortful cognitive activity when given a task or making sense of the world. In other words, low need for cognition is defined as the relative absence of motivation for effortful cognitive activities that defines high need for cognition. Low need for cognition individuals tend to achieve an integrated and meaningful world by using heuristics and relying on advices of experts or celebrities (Haugtvedt and Petty, 1992; Petty and Cacioppo, 1986). They respond more positively to humour (Zhang, 1996). Oppositely, high need for cognition individuals are more curious, active and open to ideas. They are less stressed by cognitive demanding tasks, and for instance, expand efforts on seeking out, scrutinizing and using

relevant information to formulate more complex solutions (Cacioppo et al., 1996). Past research have shown that high need for cognition individuals process and evaluate advertising information more thoroughly than low need for cognition individuals. For instance, Inman, McAlister and Hoyer (1990) demonstrated that low need for cognition individuals reacted positively to a promotional signal regardless of the amount of price reduction offered. Conversely, high need for cognition individuals needed the external reference price, as well as the signal, in order to calculate the size of the price cut. This was explained by the fact that high need for cognition individuals are intrinsically motivated to engage in cognitive endeavors and are more likely to process additional issue-relevant information.

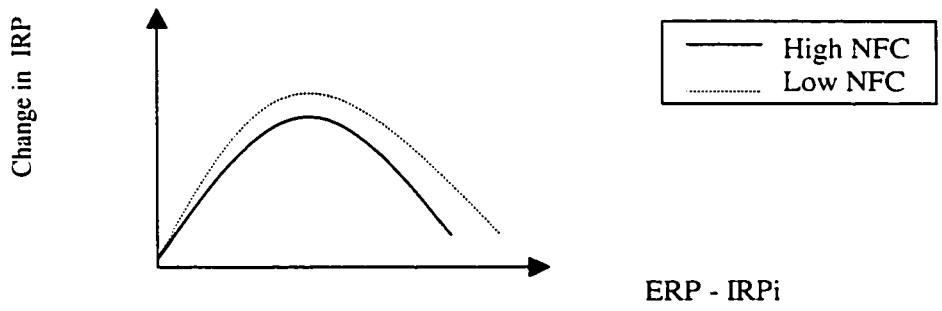
Past research's findings that were described previously were often explained through the Elaboration Likelihood Model (ELM) (Petty and Cacioppo, 1986). ELM posits a continuum of the ways attitudes change as a result of exposure to a stimulus. At one extreme of the continuum, named the central route to persuasion, when forming attitudes or making judgments, the consumer actively and cognitively evaluates and makes sense of relevant information. At the other extreme of the continuum, named the peripheral route to persuasion, the consumer gives more importance to simple inferences or cues in the peripheral context than to actual product attributes or message arguments. Petty and Cacioppo (1986) recognized that need for cognition was an individual difference variable that moderates the cognitive route taken. High need for cognition individuals are more likely to take the central route and low need for cognition ones are more likely to take the peripheral route. Using the ELM framework in a price promotion context, we may argue that low need for cognition individuals, traveling the peripheral

route, would be more likely to be affected by the mere presence of a simple promotional signal. Conversely, high need for cognition individuals, using the central route, would be more likely to process additional issue-relevant information and make sense of stimuli such as the external reference price level.

Further, Haugtvedt and Petty (1992) found that, even though the attitudes and beliefs of high and low need for cognition individuals may appear identical following persuasive communication, these attitudes differ in their likelihood of persisting over time and in resisting counter-persuasion attempts. In particular, attitudes and beliefs of high need for cognition individuals exhibited greater persistence over time and greater resistance to an immediate counter-message than those of low need for cognition individuals. Relating the conceptualization of need for cognition to pricing research, we can expect that individuals that differ in need for cognition assimilate differently external reference prices. Individuals high in need for cognition are more prone to thinking about and making sense of an external reference price in order to form a reliable internal reference price. Compared to low need for cognition individuals, high need for cognition individuals are likely to be more skeptical about discount claims and be less easily influenced by exaggerated external reference prices. Figure 1.2 represents how high and low need for cognition individuals would differ in the assimilation of an external reference price.

Figure 1.2

Different ERP assimilations for different NFC individuals



As illustrated in figure 1.2, the following hypothesis is derived:

H2.1: As the discrepancy between the external reference price and the initial internal reference price increases, the assimilation of the external reference price gets greater for low need for cognition individuals, as compared to high need for cognition individuals.

As discussed, individuals who differ in need for cognition are expected to assimilate an external reference price differently. Another individual difference variable, value consciousness, is also expected to moderate consumers' assimilation of an external reference price.

2.2. Value consciousness

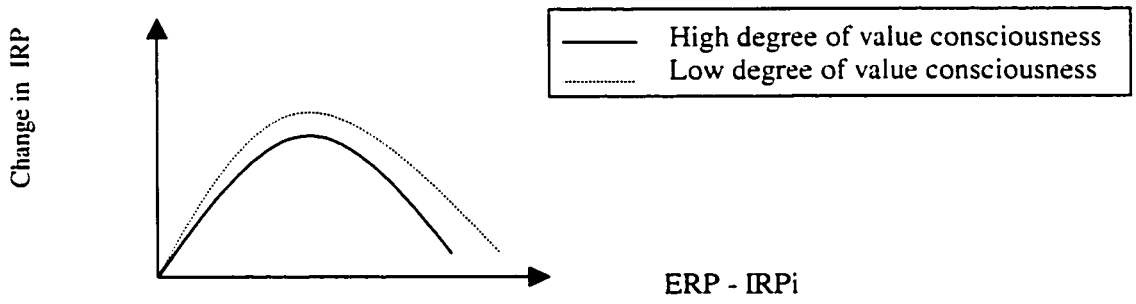
Price and quality are considered to be the most important components that determine value perception. Value has been conceptualized as the ratio of quality to price (Monroe and Petroshius, 1981; Lichtenstein, Netemeyer and Burton, 1990). When confronted to a purchase decision, a consumer usually tries to get the best possible value. S/he evaluates what s/he gives and what s/he gets in return. While the amount of money the consumer has to give is objective, it is perceived subjectively by who gives it. For example, $100 might be perceived as a large amount of money by a student, but as a relatively small amount of money for his parents. As well, what the consumer gets in return is perceived subjectively. Thus, perceived value is an assessment of the utility of a product made by a consumer and based on a trade-off between the price s/he has to pay to get the product and the quality s/he receives given the price paid (Zeithaml, 1988). As discussed, the utility of a transaction may be evaluated differently for different consumers. While a consumer may perceive a given transaction as 'good', another consumer may evaluate the same transaction as 'poor'. It is suggested that individual difference in value consciousness may affect how a purchase transaction is evaluated. Value consciousness reflects a concern for paying low prices relative to some quality constraint (McGowan and Sternquist, 1998; Lichtenstein, Netemeyer, and Burton, 1990; Lichtenstein, Ridgway, and Netemeyer, 1993). Value consciousness has nothing to do with the perceived value of a particular product, but is rather related to concepts such as price sensitivity. However, more than a price concern, value consciousness takes quality

constraints into account. Lichtenstein et al. (1990) reported that a high value conscious consumer looks for the lowest price that meets his/her specific quality requirements.

Regarding the effects of value consciousness on consumers' assimilation of an external reference price, a few hypotheses can be derived. High value conscious individuals may be more motivated to get the best possible value. Thus, high value conscious individuals may be more likely to evaluate carefully the credibility of advertising claims. They may also have narrower width of internal reference price range. Thus, high value conscious individuals may be more skeptical about exaggerated external reference prices, or if as skeptical, less influenced. This discussion can be illustrated as in figure 1.3.

Figure 1.3

Different external reference price assimilations for different value conscious individuals



As explained for need for cognition, no hypotheses are derived for a low external reference price.

H2.2: As the discrepancy between the external reference price and the initial internal reference price increases, the assimilation of the external reference price gets greater for low value conscious individuals, as compared to high value conscious individuals.

As discussed, individuals who differ in value consciousness are expected to assimilate an external reference price differently. Another individual difference variable, coupon proneness, is also investigated for potential moderating effects on consumers' assimilation of an external reference price.

2.3. Coupon proneness

Coupon is a form of price promotion that differs from rebate or price-off strategies in that it involves the consumer in the process. Indeed, consumers have to take the coupon in their hands, sometimes clip it, and then, bring it to the cashier in order to get the price reduction. The main difference is that it may give to the user a feeling of satisfaction of having done something to get a good deal. Deal prone consumers are more likely to find a deal "impossible to refuse" (Hackleman and Duker, 1980). These consumers are even likely to purchase something for the only reason of the deal, even though the product will never be used (Thaler, 1983). Therefore, Lichtenstein, Netemeyer and Burton (1990) defined deal proneness as an increased propensity to respond to a purchase offer because of the form of the offer positively affects purchase evaluations. Similarly, they defined coupon proneness as an increased propensity to respond to a

purchase offer because of the coupon form of the purchase offer positively affects purchase evaluations. Following this definition, coupon-prone individuals were found to use coupons as a form of good value without comparing the reduced price with the prices of other brands (Zeithaml, 1988). In addition, Guimond, Kim and Laroche (2001) recently found that coupon-prone individuals were less sensitive in their affective reactions to an increased magnitude of the face value, compared to non-coupon-prone individuals. This might be a result of the positive reactions associated with the coupon form of the deal offer.

Coupon proneness is only one form or dimension of deal proneness. This concept used to be measured in behavioral terms: consumers who act on coupons are more coupon-prone. However, as some consumers may redeem coupons because of the increase in value rather than the form of the promotion, coupon proneness is considered at a psychological level, as one construct that affects the behavior of redeeming coupon (Lichtenstein, Netemeyer and Burton, 1990).

There are no particular expectations concerning a potential moderating effect of coupon proneness on ERP assimilation. Yet, this variable is included in the study with a view to exploring how coupon prone consumers respond to different external reference price levels. For example, Henderson (1988) introduced the concept of coupon primacy. He concluded that consumers exhibiting coupon primacy were less likely to respond to other promotions, presumably because of a strong commitment to coupons. Kumar, Karande and Reinartz (1998) concluded that, for deal-prone consumers, the impact of external reference price discrepancy on brand choice is greater than that of the internal price discrepancy. Results from the present research may allow to drawing further

conclusions and recommendations regarding the behavior of coupon prone consumers. Kumar et al. (1998) argued that differences in the use of pricing information between different segments have implications for retailers in terms of pricing across trade areas, as well as promotional tactics.

The decision to promote a lower price produces two opportunities for a practitioner. The first one was to determine how much to reduce the price in order to propose a good deal. Second, there are many ways to communicate the price discount and some may have an effect on consumers' perceptions of the proposed deal (Della Bitta, Monroe, and Mc Ginnis, 1981). The following part discusses the effects of contextual variables on ERP assimilation. It demonstrates that semantic cues, the possible formats of presentation of a price promotion, can be considered as contextual variables and, thus, can influence the change in IRP.

3. Framing the promotion

In general, past research tends to support the idea that consumers discount advertising messages and that the level of discounting varies by type of claim (Ford and Calfee, 1986). This section consists in a review of existing literature on contextual influences on price perception with a view to investigating the effects of savings presentation format on consumers' internal reference price change. The potential effects of contextual variables, and more specifically semantic cues, are discussed in the first two

sections. Hypotheses regarding the effects of absolute and relative savings presentation formats on internal reference price change are derived in a third section.

3.1. Contextual effects on external reference price assimilation

Most academic research found that an external reference price, even exaggerated, has a positive effect on consumers' evaluations of a promotional offer. However, this effect has been inconsistent across research studies and its strength has been shown to be dependent on contextual factors (Lichtenstein and Bearden, 1988). Jacoby and Olson (1977) noted that one explanation for this finding is that the process of price perception depends upon the context in which it occurs. Monroe, Della Bitta, and Downey (1977) underlined the importance of investigating contextual influences in pricing research because: "the process of price perception does not seem to be one of categorization into acceptable-unacceptable categories" (p. 277). Thus, the assimilation of an external reference price would be better represented with a continuum rather than with a categorization and contextual cues would have the ability to make a price more or less attractive.

The rationale behind the influence of contextual factors on price perception can be based on the Adaptation-Level theory (Helson, 1948; 1964). It has been explained in the previous section that focal cues such as an external reference price in a price promotion can influence the primary cue, IRP. Adaptation-Level theory has further suggested that contextual factors have the ability to affect how the focal cue is evaluated relative to the adaptation-level. Thus, we can expect contextual cues in price promotion messages to

moderate the effects of an external reference price on internal reference price that is retrieved from memory (Biswas and Blair, 1991; Biswas et al., 1999). Contextual cues are background information and secondary stimuli to which consumers do not attend directly. They include the purpose of the purchase, the placement of the price claim in an ad, the size of the price claim, the semantic phrasing of the claim, etc. (Lichtenstein and Bearden, 1989; Lichtenstein et al., 1991; Biswas and Blair, 1991). Since price evaluations may vary across contexts, a given ERP may affect consumers' IRP in one context and not affect them in a different context (Lichtenstein and Bearden, 1988).

The next point emphasizes semantic cues that are considered as contextual factors. The effects of two different ways of framing the amount of savings offered by the price reduction (absolute and relative) on consumers' ERP assimilation are compared.

3.2. Semantic cues as contextual factors

Semantic cues are the possible formats of presentation of a price promotion. They are considered as contextual variables since consumers perceive external reference and sale prices, and the amount of savings in the context of the particular semantic cue employed by the advertiser (Monroe, 1990). Thus, the way a price promotion is presented to consumers or, more specifically, the framing of price changes may affect how these changes are perceived and how consumers evaluate the promotion (Heat, Chatterjee and France, 1995; Diamond and Sanyal, 1990).

Empirical research supports the concept that semantic cues can affect consumers' price promotion evaluation. Table 1.2 shows that several semantic cues have been found

to be effective and, along with the following discussion, provides guidelines for the manner to frame a price promotion. However, there is a need to extend this research trend to identify other presentation formats. Early research on the topic investigated how framing the location of an external reference price (e.g., "Regular price, sale price", "Compare at, now only") and/or explored how specific frames (e.g., "Special Sale Price", "Total Value, Sale Price") could affect the perception and evaluation of a price promotion (Barnes, 1975; Berkowitz and Walton, 1980; Blair and Landon, 1981; Della Bitta et al., 1981; Liefeld and Heslop, 1985). Later on, other research examined the effects of more specific frames and generally confirmed the fact that consumers' level of discount of a message varied by type of claim. We can identify research that suggests low 'consistency' and high 'distinctiveness' of the reference price claim (Lichtenstein and Bearden, 1988; 1989; Lichtenstein, Burton and Karson, 1991; Grewal et al., 1996). For example, Grewal et al. (1996) recommend the use of 'between-store' advertisements (high distinctiveness) when the consumer is located at home, as opposed to the use of 'within-store' ads (low consistency) when the consumer is at the point of purchase. Other research focused on 'tensile' advertisements (Mobley, Bearden and Teel, 1988; Biswas and Burton, 1993; 1994; Biswas et al., 1999). Although Biswas and Burton did not find significant differences between concrete and abstract wordings, results tend to support the idea that abstract wordings are negatively perceived.

Table 1.2

An overview of some important contributions to the literature on the effects of semantic cues

	Consistency and Distinctiveness	% vs $ (*)	Tensile cues	Gains vs Losses
2000				
1999			Biswas, Pullig, Krishnan and Burton	
1998				
1997				
1996	Grewal, Marmorstein and Sharma			
1995		Heath, Chatterjee and France		Heath, Chatterjee and France
1994			Biswas and Burton	
1993			Biswas and Burton	
1992				
1991	Lichtenstein, Burton and Karson			Tversky and Kahneman
1990				Diamond and Sanyal
1989	Lichtenstein and Bearden			
1988	Lichtenstein and Bearden		Mobley, Bearden and Teel	
...				
1985	Liefield and Heslop			
...				
1981	Della Bitta, Monroe and McGinnis Blair and Landon	Della Bitta, Monroe and McGinnis		
1980	Berkowitz and Walton	Berkowitz and Walton		

(*) Research gathered in this column did not test directly absolute versus relative framings; yet, these research provided with several implications:

- Heath et al. (1995) did not test the framing effects in a price promotion context but their logic provides with interesting prescriptions.
- Della Bitta et al. (1981) tested 4 semantic cues: RP/SP; Total value/SP; Compare at/Our Price; % off/now only SP.
- Berkowitz and Walton (1980) tested 8 semantic cues: SP; RP/SP; RP/%off; RP/$off; RP/SP/%off; RP/SP/$off; RP/%off/$off; RP/SP/%off/$off

Finally, research based on Prospect Theory (Kahneman and Tversky, 1979) compared discounts framed as 'gains' as opposed to 'losses' and suggest that consumers are more sensible to losses (Heat et al., 1995; Tversky and Kanheman, 1991; Diamond and Sanyal, 1990). However, only a few researches attempted to assess the effects of framing the amount of savings, such as comparing absolute versus relative savings presentation formats.

3.3. Absolute versus relative savings presentation format

A price reduction may be promoted with either an absolute ($-off) or a relative (%-off) savings presentation format. Retailers frequently use advertisements featuring percentage price reduction to announce a storewide sale or to promote a line. A simple example is the Boxing Day, which usually happens in North America on the day after Christmas. For the occasion, retailers try to attract consumers with "Boxing Day, 60% rebate on everything" or "60%-off on coats". Although such claims are mainly aimed at attracting consumers to come in and visit the store, they may also influence how consumers form their IRP. What is not known is whether percentage-framed claims are more effective than absolute ones.

Based on the discussion of the effects of semantic cues on price perception previously made, it is proposed that different savings presentation formats ($-off; %-off) may result in different consumer responses. Although there is empirical evidence of the effects of semantic cues on consumers' responses, the relative effects of absolute and relative savings presentation formats on consumers' price beliefs remains unclear. Barnes

(1975) demonstrated that, for a retail advertisement for an $11.98 housecoat, a percentage format was less positively evaluated than an absolute one. Berkowitz and Walton (1980) found that a 'percentage-off' semantic cue did not perform better than an absolute one at influencing respondents' perceptions of the value of the offer. Della Bitta et al. (1981) found that presenting percent-off price discount produced a nearly significant (yet, non-significant) lower perception of value than did a dollar-metric amount off. Heath et al. (1995) found that percentage based frames significantly altered price perceptions. They modified some of the mental accounting principles for maximizing value or happiness proposed by Thaler (1985).

While previous research does not allow for generalizations about when to state absolute and relative price changes, Heat and his colleagues (1995) made some prescriptions. As prescribed, for low amounts (in dollars) of price discounts, a percent-based format may be more effective than a dollar-based one. Similarly, for high amounts, a dollar-based format may be more appropriate. For example, a 50 cents discount may be more appealing to consumers if it is framed as a 40% discount; a $10 savings may be perceived as smaller when framed as a 5% discount. An interesting issue is the point at which the crossover occurs, that is, where consumers would be indifferent to the presentation format (see table 1.3).

Table 1.3

Relative effectiveness of absolute and relative savings presentation formats

ERP level	Low Price Level Product	Moderate Price Level Product	High Price Level Product
Low	Too small a discount to see a difference		$
Moderate	%	% = $ *(crossover)*	$
High	%		Consumers indifferent to savings format

This table suggests that the relative effectiveness of absolute and relative savings presentation formats depends on the price level of the product combined with the level of the external reference price. A low price level product means that the price of the particular product is considered as low, such as a $5 product. $300 may be a low price for a television set, but would still be considered as a high price level product. The crossover could be an explanation for the non-significant results found by Della Bitta, Monroe and McGinnis (1981). In their study, these authors used $50 and $120 calculators and 20% and 40% discounts. Thus, the products used (moderate price level products) and discount levels (low to moderate) may be an explanation for the small differences. These treatments would correspond to situations where there is no difference in perception between the relative and the absolute format (crossover). These limitations, added with the fact that Heat et al. (1995) did not test their predictions in the context of a price

promotion, underline the need to conduct an appropriate study. Based on the discussion about the effects of framing the savings and on the recommendations summarized in table 1.3, the following two hypotheses are derived:

H3a: For a low price level product, the relative savings presentation format generates a greater change in internal reference price than the absolute format.

H3b: For a high price level product, the absolute savings presentation format generates a greater change in internal reference price than the relative format.

These hypotheses concern only two of the nine possible scenarios of table 1.3. However, if a moderate level is actually optimal for ERP, it seems relevant to focus on this level. As regards the moderate price level scenarios, the decision was to look at the low and high price levels only, as the support of both hypotheses would underline the existence of a crossover.

Summary of Chapter I

When making a purchase, a consumer evaluates a sale price by comparing it to a reference price. To this aim, the consumer forms a specific internal reference price that serves as a basis for the comparison. Retailers use price promotion as a mean to attract consumers and induce them into purchasing a product by showing them an external reference price that may also be used for the comparison.

A first research question focused on the extent to which consumers assimilate an external reference price in a price promotion context. A set of hypotheses was derived to investigate the amount of change in consumers' IRP generated by different sizes of discrepancy between ERP and consumers' initial IRP.

As recently recommended for this kind of research, three individual difference variables (need for cognition, value consciousness and coupon proneness) were included in the study in order to investigate for different individual assimilation of an external reference price.

A third research question was concerned with the effects of framing information about the "savings" consumers can make if they decide to purchase the product. Two savings presentation formats, absolute and relative, were expected to influence differently consumers' internal reference price.

The next chapter presents a description of the two studies that were conducted in order to test the proposed hypotheses.

Chapter II: METHODOLOGY and RESULTS

A review of literature lead to the derivation of testable hypotheses on specific characteristics of price promotion. An experimental research was conducted in order to test these hypotheses and answer the specific questions that were raised in the first chapter. In order to answer the two first research questions, an experiment was designed to study the extent to which consumers assimilate an external reference price, as well as how individual difference variables could moderate this assimilation. A second study was designed to investigate the effects of savings information on consumers' internal reference price and answer the third research question. After a brief overview of the experiment, this chapter describes the methodology used and the results found for Study 1 and Study 2.

Methodological Overview

The experiment was performed during the months of September and October 2001. Thanks to the interest in the research displayed by many professors at the Concordia University John Molson School of Business, the questionnaires were administered in undergraduate classes. Upon arrival into the classes, the researcher introduced him and described broadly the purpose of the research to the students in order to motivate them to participate in the study. With respect to the policies regarding the use of human subjects in experiments at Concordia University, it was emphasized that no obligation was placed on them to do so. No incentive was promised for participating in

the experiment. The researcher, however, expressed his great appreciation for the cooperation from the students. Either at the beginning or the end of the class, students were told that they had been randomly selected to participate in a research on consumer behaviour and that it was absolutely not related to the class they were attending. Students were given the experimental booklet, asked to respond to the questions, and, then, debriefed with the presentation of an overview of the aim of the research. The entire procedure took from 15 to 20 minutes.

1. Study 1 - Methodology

Study 1 consisted of a 1x3 experimental design in which the factor was ERP and its levels were low, moderate and high (or exaggerated). These levels were considered to test the inverted-U shape of the relationship between the ERP and the change in IRP and answer hypothesis 1. The main dependent variables were initial and final IRP, which permitted to calculate the change in IRP. The experimental design can be illustrated as in table 2.1.

Table 2.1

Experimental design of Study 1

Dependent Variables	Low ERP level	Moderate ERP level	High ERP level
Initial IRP	μ_{11}	μ_{12}	μ_{13}
Final IRP	μ_{21}	μ_{22}	μ_{23}
Change in IRP	μ_{1}	μ_{2}	μ_{3}

μ_l can be interpreted as the mean change in IRP for the low ERP condition and was calculated as the difference between mean initial IRP (μ_{11}) and mean final IRP (μ_{12}) for the same condition.

1.1. Product selection

The first step in the design of the experiment was to find a product for which students would have had accurate estimations of the prices available on the market. This appeared to be a difficult problem to solve as it has been found that consumers do not always have the ability to recall prices accurately, or do not have enough price knowledge (Dickson and Sawyer, 1990). Products that students are very familiar with seemed to be an appropriate solution. However, past research using familiar products did not always manage to overcome this problem (Lichtenstein et al., 1991). Thus, even with familiar products, there is a risk of getting high standard deviations in price responses due to the relative diversity among the student population. The problem raised by high standard deviation is twofold. First, whether initial IRP varies too much between respondents, it may be inappropriate to make comparisons. Second, if an initial IRP is greater than an external reference price, the change in IRP may actually be negative. As it is not clear whether a decrease in IRP happens in a similar manner as an increase, and as the focus of the research was on how an ERP can increase an IRP, it was preferable to avoid negative changes.

In order to overcome these problems, the decision was to create a way to stabilize initial IRP estimations below the sale price that would be proposed. Thus, it seemed

preferable to select an unfamiliar product, for which respondents would not have a very good idea of the prices available on the market, and remind them the average market price through a little scenario. Thus, as students would not be able to rely on past price experience to form their internal reference price, they would rather use this external information. As a result, they would create similar internal reference prices. A telescope was chosen as the stimulus, and was given a fictitious name, Startouch 2000. A scenario was created, aimed at inviting the participant in imagining him/herself in a real purchase situation and at providing him/her with an idea of the average market price for the selected product. This price was set at $250, whereas the sale price was fixed at $299.99.

1.2. Questionnaire design

The purpose of the study was to measure a change in individual's internal reference price. This problem is similar to some other problems of attitude change measurements. Designs of questionnaires aimed at measuring a change in attitude in previous research were usually based on the following plan (Chebat et al., 1991). First, after having described a product, participants were asked to answer a series of questions to measure their initial beliefs. Then, in order to make them forget about their initial answers or at least change their mind, participants were asked to complete a fill-in task that was not related to the purpose of the study. Finally, participants were shown the stimuli of interest and their final beliefs about the product were measured.

The experimental booklet was composed of six pages (a copy is provided in appendix 1). A cover letter was aimed at introducing the survey to the students in a way

to motivate them into participating. Page 1 consisted in the scenario and the initial IRP related questions. Pages 2 and 3 gathered the measures of the three individual variables, which are described later (p.47). These measures were placed after the initial IRP questions in order to clear respondents short-term memory. On page 4, a reminder of the scenario was followed by the advertisement that included the price promotion information. The bottom part of page 4 consisted in the final IRP related questions, which were in the same frame as for the initial ones. Finally, page 5 consisted of questions dealing with other evaluative-based dependant variables, such as source credibility, and demographics.

1.3. ERP determination

Three external reference prices were chosen to determine the factor levels, and to create the three experimental conditions. Based on previous studies in this area of research (Lichtenstein and Bearden, 1989; Lichtenstein et al., 1991; Biswas and Blair, 1991), three ERP levels were pre-determined. The low, moderate, and high ERP levels were fixed around 15%, 33.3%, and 60% discount, respectively. However, and in order to test for the strength of the entire questionnaire, an initial data collection was conducted for only two conditions (25 questionnaires for each of the moderate and high ERP conditions). There were a few reasons for using only two conditions. The first goal was to ensure that initial IRP responses were below the sale price and homogeneous among respondents, that would support the design of the scenario. Second, it was important to check whether the design of the questionnaire allowed for a significant increase in IRP

(see the point on attitude change, questionnaire design, p.42). Third, the difference between the two 'change in IRP' means was needed to check for the appropriateness of the ERP determination.

This initial data collection gave a strong support to the overall design of the questionnaire. Initial IRP answers were below the sale price and homogeneous between subjects; significant changes in IRP were observed. However, results have shown that the mean initial IRP for the moderate condition was lower than the mean for the high condition. As the product chosen for the present study was not familiar to students, and as previous research used familiar products, it is possible that the external reference price levels were inappropriate. Indeed, individuals in an unfamiliar situation may more easily be influenced by exaggerated claims and the range of price acceptability may be wider than in a familiar context (Fouilhd, 1960). It is possible that a high ERP level for a familiar product corresponds to a moderate ERP level for an unfamiliar one. Thus, the moderate level was, then, considered as the low one, and the high one as the moderate one, whereas another high level was changed to a 72% discount level, which was considered as objectively exaggerated.

1.4. Measures

The current point reviews how all the measures that were used in the study were derived. After a description of the measures for IRP, the cognitive-based dependant variable that is of great interest in the study, the measures for other evaluative-based dependent variables are listed.

1.4.a) Internal Reference Price

Internal reference price has received a lot of attention in previous studies and has been defined in various ways (see Chapter I, pp. 7-10). It is important to develop a good measure to capture IRP. Consumers do not possess a single, well-defined internal reference price. Rather, they use multiple reference points in a "non-unitized" fashion to determine the value of an offer (Chandrashekaram et al., 1996). Janiszewski and Lichtenstein (1999) demonstrated that some other prices of the range of internal price standards could account for reference price effects that a single internal reference price measure could not. Niedrich et al. (2001) further argued that consumers compare the target price against all the prices of the range. Thus, multiple measure of IRP has been advised in previous research (Klein and Oglethorpe, 1987). Even though these measures might not directly reflect the IRP, Assimilation-contrast theory suggests that internal price standards are all positively correlated with, and thus provide an indirect measure of IRP (Lichtenstein et al., 1991). Four measures of internal reference price were used for the present research; three of them were derived from those developed by Lichtenstein et al. (1991) and Biswas and Blair (1991).

Consistent with the conceptualization retained for the research "Expected price to pay" was used as a first measure of internal reference price. Participants were asked "What price would you expect to pay for the product in a Montreal store?". In order to capture the range of internal reference prices, lowest and highest expected prices were also measured. 'Low' price estimation corresponds to consumers' perception of the lowest price that exists in the market. 'High' price estimations represent the highest price

they are willing to pay for the product. 'Low' and 'High' price estimations were measured as in Lichtenstein et al. (1991), with two questions: "What do you think is the lowest price in Montreal that you could find the product selling for?" and "What is the most you would pay for the product?". Finally, consumers' perception of a "Fair" price represents the price that they think is fair to charge for the product (Thaler, 1985) and was measured with the following question: "What do you think a fair price for the product would be in a Montreal store?".

Jacobson and Obermiller (1990) stated that several distinct reference prices might be involved in a single purchase decision. This is a reason why four measures of internal reference price were used, because of the multidimensionality of the construct. In a way to help the reader through the next parts of the paper, these four measures of internal reference price are noted Expect IRP, Fair IRP, Low IRP and Most IRP.

1.4.b) Other Dependent Variables

Some other relevant dependent variables were included in the questionnaire with a view to drawing further conclusions about consumers' price perception and providing additional support to previous findings. Indeed, the consumers' price perception process goes further with perceptions of the value of the offer. This evaluation is represented in the current study by respondents' perceived attractiveness of the sale price and their satisfaction with it, as well as their purchase likelihood and search for a better price. Each of the four concepts was measured with an 11-point single item scale. As for the attractiveness of the purchase price, for example, respondents were asked to answer to the

question: "If you were ***really*** in this situation, how attractive would the purchase price of **$299.99** be to you?" with rating on a scale going from 1 (unattractive) to 11 (attractive).

Source credibility was also included in the questionnaire to observe consumers' attitude toward perceived deceptive advertising. Source credibility was assessed with a five-item scale measuring the dimensions of sincerity, honesty dependability, trustworthiness, and credibility (Lichtenstein, Burton and Karson, 1991; Lichtenstein and Bearden, 1989; Urbany et al., 1988).

1.4.c) Demographics

The final section of the questionnaire consisted in four questions related to some demographic characteristics of the respondent. Respondents were asked questions about their gender, status, age, and annual household income.

1.5. Individual difference variables

The second question of the research addressed the potential moderating effect of individual difference variables on consumers' assimilation of an ERP. Need for Cognition, Value Consciousness, and Coupon Proneness were selected as such potential variables.

1.5.a) Need for Cognition

Need for Cognition, or NFC, is a concept that is commonly measured with a 18-item scale. This scale was developed by Cacioppo, Petty, and Kao (1984) and has proven

to be a reliable and valid way of measuring NFC. However, it appeared in further studies that researchers were facing some problems of factorization with the 18-item scale (see Cacioppo et al., 1996 for a review). Later, Forterlee and Ho (1999) found out that a simplified scale, which consisted in the nine positively framed items of the original scale, could overcome some of the problems encountered with the original measure. As the aim of this study was not to demonstrate any causal relationship between NFC and another variable, but rather to explore whether there could be any relationship between this concept and the ERP, the simplified 9-item scale was used (items can be found in appendix 1, p.113).

1.5.b) Value Consciousness and Coupon Proneness

Value Consciousness, or VC, and Coupon Proneness, or CP, are two distinct concepts that have been introduced by Lichtenstein and his associates (1990). In their research, they developed a 7-item scale for VC and an 8-item one for CP. Concerning the VC scale, all 7-items were used in the current study. A few items were modified from the original version. Indeed, Lichtenstein et al. (1990) developed a scale for grocery shopping. Some wordings were modified to match the study on telescope shopping. As an example, one of the original item contained the wordings "at the grocery store", which was cut for the current study. For similar reasons, only 6 out of the 8 original CP items were kept for the purpose of Study 3 (items can be found in appendix 1, p.112).

2. Study 1 - Results

The first research question was concerned with consumers' assimilation of an ERP. Hypothesis 1 suggested an inverted-U relationship between the level of ERP and the change in consumers' IRP. Three individual difference variables were, then, regarded as potential moderators for the assimilation of an external reference price. This section provides with a description of the data analysis and the results.

Database preparation

Even though they had been asked to do so, some participants did not answer all the questions. While the treatment of missing data for scale ratings was automatic with SPSS, some missing values for IRP questions were more problematic. For example, when a respondent had not provided any answer to initial Fair IRP, but had provided one to final Fair IRP, two things were observed. First, the missing value for initial Fair IRP was not taken into account in overall results (means, and thus, mean comparisons, for example) by SPSS. Yet, the calculus of change in Fair IRP was considering the answer to be equal to zero, and thus, the change was the amount of final Fair IRP, which was an error. For this particular case, the researcher has decided to delete all answers related to the missing value (if initial Fair IRP was missing, final Fair IRP and change in Fair IRP were both deleted). Fortunately, this situation happened only a very few times.

Some answers were identified as extremes, or outliers, by SPSS. The decision to drop them from the study was made by the researcher, who made a judgment for each case. For each extreme or outlying answer for any IRP, the corresponding questionnaire

was assessed for coherence in the answers. When the arguable answers were found appropriate, the questionnaire was considered as 'acceptable' and, thus, kept for the analyses.

Two Fair IRP values were missing and their treatment was done as previously explained. A few outlying, or extremes, values were identified with SPSS. Yet, the researcher decided to keep all the data for the analyses, judging the questionnaire as "acceptable". Only three Most IRP answers were considered as unacceptable and were just deleted. This point, which is linked to a problem encountered with the measure of Most IRP, will be discussed later (p.53). The next section consists of the description of the sample, some tests to check the appropriateness of the data and the tests of hypotheses 1 and 2.

2.1. Sample

In the first study, participants were all undergraduate students at Concordia University attending marketing research classes. As shown in table 2.2, the sample was made up of 118 students equally distributed across the three experimental cells. The modal respondent was a single, 22 years old student. 41.5% of the respondents were male.

Table 2.2.a

Distribution of subjects across experimental cells

Low ERP	Moderate ERP	High ERP	Total
39	40	39	118

Table 2.2.b

Sample description: Gender and Status

Demographic Variable		Frequency	Percent
Gender	Male	49	41.5
	Female	69	58.5
	Total	118	100.0
	Single	109	92.4
Status	Married or living together	9	7.6
	Separated or Divorced	0	0
	Widowed	0	0
	Total	118	100.0

Table 2.2.c

Sample description: Age and Income

		Age	Income
N	Valid	117	88
	Missing	1	30
Mean		22.09	77,356.91
Std Deviation		3.11	127,611.43
Variance		9.65	1.63E+10
Minimum		19	8
Maximum		44	1,000,000

Overall, the sample seemed to be an appropriate representation of the student population. Regarding the question about respondents' income, it seemed that the large number of missing values and the huge standard deviation were due to the students who did not know whether to mention their parents' income or theirs, as well as their fear to reveal such information.

2.2. Data check

This part consisted in basic analyses for the data related to IRP answers, with a view to checking if the design of the questionnaire was appropriate for the study. The four measures of IRP (Low, Fair, Expect, and Most) could have been unitized in a single IRP one. However and based on the results of a study conducted by Chandrashekaran and Harsharanjeet (1996), IRP measures were analyzed separately.

The scenario had been designed to generate answers for initial IRP that had to respond to two criteria. First, and as previously explained ('Product selection', p. 41), initial IRP answers had to be below the proposed sale price (i.e., $299.99), and more precisely around $250 (the average price of the market from the scenario). Second, initial IRP answers had to be homogeneous, which means that, in order to make proper comparisons between experimental conditions, initial IRP means of the three conditions had to be significantly equal. Initial IRP responses were checked with a T-test for initial IRP = $250, even though the interest of the test was mostly to check whether IRP means were below the proposed sale price ($299.99).

Mean Expect IRP significantly equaled $250. Mean Fair IRP was a bit lower than $250; this could be explained by the fact that people might have the tendency to think that they should pay less than the price they are proposed, or than the one they expect to pay. Mean Low IRP was slightly lower than $200, which seemed to be a normal result as it represented respondents' estimation of the lowest market price. Moreover, and as shown in table 2.3, these three measures showed a relatively low standard deviation,

which is preferable for this kind of research. Thus, they were considered as having a satisfying distribution.

These tests were followed by a comparison of means of initial IRP between the three conditions. Results are summarized in table 2.3; F-values and significance levels are those of the mean comparison. The results demonstrated that these three measures were significantly homogeneous between conditions and could be used in further analyses.

Table 2.3

Results of a mean comparison for homogeneity in participants' initial IRP responses

Dependent Variables	*N*	Mean	*SD*	*F*	Sig.
Expect IRP (initial)	118	245.03	47.43	1.649	.197
Fair IRP (initial)	116	232.07	41.42	2.449	.091
Low IRP (initial)	118	194.36	41.59	1.303	.276
Most IRP (initial)	115	264.78	59.01	5.728	.004

However, Most IRP's distribution was less satisfying. Even though mean Most IRP was close to $265, which was a satisfying result, its standard deviation was relatively high. A mean comparison revealed that this measure was not homogeneous, as its mean in the moderate ERP condition was significantly (at 1%) different from the one in the high ERP condition. Clearly, there was a problem with the measure of Most IRP. After a close analysis at the answers at the individual level, it seemed that, sometimes, respondents had misunderstood the question. Indeed, there were apparently two ways of interpreting it:

- The most I **would** pay, or the most I would be ready to pay for this product in a real situation; that was the kind of answer found in a questionnaire when the student answered $5, which could be interpreted as: "I'm not ready to pay much for this telescope"
- The most I **could** pay, or the most that I might have to pay for this product in a real situation; that was the kind of answer found in two different questionnaires when the students answered $1000. It could be interpreted as: "I might have to pay a lot if I really want to buy this product."

As a result of this apparently confusing question, a relatively high standard deviation from the mean and a mean for the moderate ERP condition that significantly differed from the means of the other two ERP conditions, even after having dropped three outliers (see table 2.4). Due to the inappropriateness of the question, the variable Most IRP has been disregarded from further analyses.

Table 2.4

Results for the non-homogeneity between Most IRP answers

		Subset for alpha = .05	
ERP level	*N*	1	2
Moderate	39	239.87	
Low	39		275.90
High	37		279.32
Sig.		1.000	.966

Finally, as the questionnaire had been designed to generate significant changes in IRP between time 1 and time 2 (before and after the presentation of the price promotion), paired t-tests were conducted. The results have shown significant changes in each of the IRP measures, providing strong support to the overall design of the questionnaire (see table 2.5).

Table 2.5

Paired t-tests for significant change in IRP

Pairs	Paired differences		*t*	*df*	Sig (2-tailed)
	Mean	*SD*			
(Final – Initial) Expect IRP	86.63	196.33	4.793	117	.000
(Final – Initial) Fair IRP	83.81	153.11	5.896	115	.000
(Final – Initial) Low IRP	48.62	65.18	8.103	117	.000

Data have been checked for their distribution and three measures of internal reference price were selected to test the hypotheses. Results are presented in the next section.

2.3. External reference price assimilation

Hypothesis 1 suggested an inverted-U relationship between the change in IRP and the difference between ERP and initial IRP. The distribution of participants' answers is represented with scatter plots, which can be found in appendix 2. An analysis of variance

(One-way ANOVA) was conducted to compare changes in consumers' IRP between the three ERP conditions and test the hypothesis.

A comparison of mean change in IRP was conducted to test the remaining hypotheses. Hypothesis 1c, which predicted that mean IRP in the moderate ERP condition would be higher than mean IRP in the low ERP condition, was not supported for any of the three IRP measures (see table 2.6). Hypothesis 1b, which predicted that mean IRP in the moderate ERP condition would be higher than mean IRP in the high ERP condition was not supported for Fair and Low IRP and was even contradicted for Expect IRP.

Table 2.6.a

Results of a mean change in IRP comparison between experimental conditions

Dependent variables	ERP level	*N*	ERP – initial IRP	Mean change in IRP	*SD*	*F*	Sig.
	Low	39	93.86	18.46	49.63		
Expect IRP	Moderate	40	511.86	55.45	82.48	9.014	.000
	High	39	808.96	186.77	305.21		
	Low	38	108.02	29.84	41.86		
Fair IRP	Moderate	39	528.58	82.41	120.81	5.130	.007
	High	39	816.91	137.79	221.11		
	Low	39	147.71	34.85	43.38		
Low IRP	Moderate	40	562.74	53.08	65.44	1.361	.260
	High	39	856.27	57.82	80.63		

Table 2.6.b

Homogeneous Subsets - Change in Expect IRP

ERP level	*N*	Subset for alpha = .05	
		1	2
Low	39	18.46	
Moderate	40	55.45	
High	39		186.77
Sig.		.673	1.000

Table 2.6.c

Homogeneous Subsets - Change in Fair IRP

ERP level	*N*	Subset for alpha = .05	
		1	2
Low	38	29.84	
Moderate	39	82.41	82.41
High	39		137.79
Sig.		.299	.262

Table 2.6.d

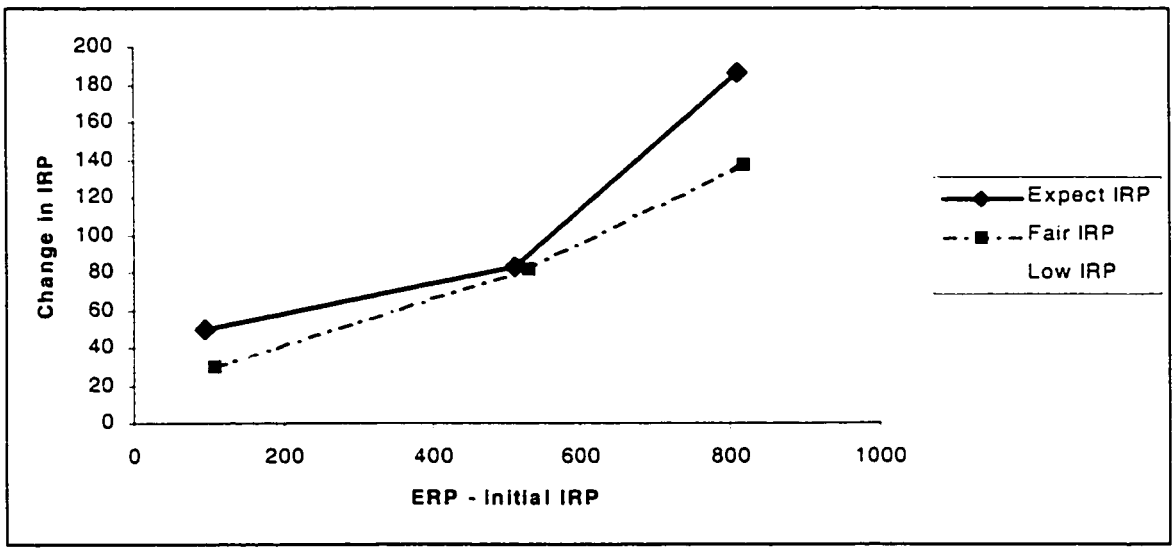
Homogeneous Subsets - Change in Low IRP

ERP level	*N*	Subset for alpha = .05
		1
Low	39	34.85
Moderate	40	53.08
High	39	57.82
Sig.		.296

Thus, the hypothesized inverted-U relationship was not supported in the present research (see figure 2.1). Even though mean change in IRP for the moderate ERP condition was higher than the mean for the low ERP condition, results were found to be non-significant (that was true for each of the three measures). Contrary to what was hypothesized, mean change in IRP for the high ERP condition was higher than the mean for the moderate condition (and significantly higher for Expect IRP).

Figure 2.1

Relationship between 'Change in IRP' and 'ERP – initial IRP'



2.4. Other Dependent Variables

Five other dependent variables were included in the study in order to extend the conclusions. Mean comparisons were conducted for each variable to analyze the effects of different external reference prices on some respondents' evaluative responses. First are

discussed results for Source Credibility, which is directly linked to participants' level of the believability of the claims. Then, results for the four other dependent variables are provided.

As previously discussed (p. 46), Source Credibility was measured with a 5-item, 9-point Likert type scale; three items (items 1, 3, and 5) had been reversed in order to reduce acquiescence effects. Data were entered in the database as they appeared on paper. Then, the three items were reverse-coded. Reliability for the scale was checked with Cronbach's alpha coefficient, which was equal to 0.7745, a satisfying result. The final score for source credibility was provided with the arithmetic mean of the five item scores. Thus, high scores on source credibility suggested that respondents found the source to be highly credible. Scores on source credibility were relatively low. Even in the low ERP condition, respondents did not rate higher than 5, on average.

Results of a mean comparison for Source Credibility showed that there was a significant score difference between conditions (see table 2.8). Overall, Source Credibility seemed to decrease when ERP increases. On average, participants rated higher scores on Source Credibility in the low ERP condition than in any other (see table 2.7). This result was consistent with what we would have expected. However, there were no significant differences between the high and moderate ERP conditions. We would have expected that respondents found the high ERP condition to be exaggerated, and, thus, rated lower scores. Using the framework of the Assimilation-Contrast theory, Lichtenstein et al. (1991) suggested that shifts in the internal reference price would be accompanied by similar shifts in evaluations of source credibility. Results demonstrated that, despite this perception of low credibility, most of them revised their IRP in

accordance with the new price information they were provided with. These contradictory findings (decrease in source credibility while there is still a significant increase in consumers' IRP) underline the difficulty in understanding price information effects.

Table 2.7

Homogeneous Subsets: Source Credibility

		Subset for alpha = .05	
ERP level	*N*	1	2
Low	39	4.61	
Moderate	39		3.73
High	38		3.43
Sig.		1.000	.679

Regarding the four other dependent variables included in the study, it had been suggested that subjects would revise their IRP in accordance with the ERP, and then, evaluate the sale price. Given that respondents provided with higher IRP change in the high ERP condition, it would have been normal to expect higher means for price satisfaction and attractiveness in the high ERP condition. As well, we would have expected purchase likelihood to be higher and search intention to be lower in the high ERP condition.

However, and as shown in table 2.8, none of the tests done for these variables has shown significant differences in respondents' answers between any of the three conditions. Even a great revision in people's IRP did not result in greater evaluative responses. Results did not translate the expected process. Respondents rated, on average,

6.36 on the likelihood to buy the product; 5.79 on the satisfaction with the purchase price; 5.65 on its attractiveness; and 7.72 on the likelihood to search for a better price.

Table 2.8

Results of a mean comparison for the other dependent variables

Dependent variables	ERP level	*N*	Mean	*SD*	*F*	Sig.
	Low	39	6.77	3.43		
Purchase intention	Moderate	39	5.44	3.35	2.314	.103
	High	39	6.87	3.07		
	Low	39	6.21	2.95		
Price Satisfaction	Moderate	40	5.13	3.10	1.521	.223
	High	38	6.08	2.98		
	Low	39	5.77	3.17		
Price attractiveness	Moderate	40	5.18	3.16	.727	.486
	High	39	6.03	3.33		
	Low	39	8.33	2.42		
Search intention	Moderate	40	7.63	3.51	1.328	.269
	High	39	7.21	3.23		
	Low	39	4.61	1.45		
Source credibility	Moderate	39	3.73	1.61	6.707	.002
	High	38	3.43	1.36		

2.5. Individual differences

The second research question considered the role of individual differences on the effectiveness of an ERP at influencing consumers' beliefs and evaluations. This section provides with the results of a comparison of groups of consumers who differed in need

for cognition (NFC), value consciousness (VC), and coupon proneness (CP). The results that are presented in this part concerned the 118 subjects of Study 1.

2.5.a) Reliability analysis

Cronbach's alpha coefficient for internal consistency of the nine NFC items equaled .8681, which is a satisfying value. The final scores on NFC were determined with the arithmetic mean of the nine rating scores. Thus, high scores on NFC suggested that respondents were high in need for cognition, whereas low scores suggested that they were low in this dimension.

Cronbach's alpha coefficient for VC and CP equalled .4864 and .7806, respectively. While alpha for CP was an acceptable result and CP scale was considered as a reliable measure, .4864 was relatively low. A closer look at the SPSS outputs lead to think that there was a problem with the fifth VC item (see table 2.9). According to Hair et al. (1995), an item is considered to have an acceptable level of internal consistency if its corrected item total (IT) correlation is equal or greater than 0.33. The fifth VC item had an unacceptable IT (.1489). Based on that criterion, this item was dropped from further analyses. Its omission resulted in an alpha that equalled .7806. Thus, the arithmetic means of 6 items for CP, and only 6 ones for VC (VC5 has been disregarded) were calculated. High scores on VC and CP suggested that respondents had a great concern for paying low prices (subject to some quality constraints, Lichtenstein et al., 1990) and were prone to the use of coupons because of the form of the coupon.

Table 2.9

Reliability analysis for Value Consciousness

Item	Scale mean if item deleted	Scale Var. if item deleted	Corrected Item-Total correlation	Squared Multiple correlation	Alpha if item deleted
VC1	40.53	116.48	.4062	.3063	.4126
VC2	43.39	112.85	.3427	.2971	.4142
VC3	39.98	122.89	.3637	.3226	.4388
VC4	39.40	127.93	.3317	.3319	.4584
VC5	39.65	60.87	.1489	.0436	.7806
VC6	40.57	115.46	.5031	.4442	.3975
VC7	40.82	113.09	.4905	.4743	.3893

Reliability coefficients (7 items) Number of cases = 116

Alpha = .4864 Standardized item alpha = .7598

2.5.b) Major tests for individual difference variables

The second research question suggested that individual difference variables would have the ability to moderate the assimilation of an external reference price. Each individual difference variable was analyzed separately for mean comparisons between respondents who differed in their score on each dimension. This procedure allowed for testing hypothesis 2. In order to differentiate people who had high scores on each of the three personality variables from those who had low scores, the median split method was used. Basically, median for each variable was calculated. Then, the sample was split into two groups. Respondents who had a lower score than the median were attributed a 0 and were considered as low on the dimension, whereas those who had a higher score were attributed a 1 and considered as high on the dimension. Medians for NFC, VC, and CP

were 5.56, 6.75, and 3.08, respectively. Regarding NFC, this median split enabled for comparisons of two groups, one that was high in NFC versus one that was low, on their assimilation of an external reference price.

Results have shown that no significant differences in change in IRP were found for individuals who differed in either VC or CP (see appendix 3). As a result, hypothesis 2.2 was not supported. For NFC, the differences were significant (at 10%) only in the high ERP condition, and only for Fair and Low IRP. As a result, hypothesis 2.1 was partially supported.

Table 2.10

Results of a mean change in IRP comparison between NFC type – High ERP condition

Dependent variables	NFC type	*N*	Mean	*SD*	*F*	Sig.
Change in Expect IRP	Low	19	231.32	324.57	.785	.381
	High	20	144.45	287.47		
	Total	39	186.77	305.21		
Change in Fair IRP	Low	19	206.05	245.01	3.790	.059
	High	20	72.95	178.40		
	Total	39	137.79	221.11		
Change in Low IRP	Low	19	79.74	98.59	2.872	.099
	High	20	37.00	53.44		
	Total	39	57.82	80.63		

As presented in table 2.10, results showed that, in general, high NFC people were more skeptical to the claim. Even though they tended to be influenced by the high, implausible ERP, they were less influenced than low NFC people. These results are

significant at 10% for Fair and Low IRP, but not significant for Expect IRP, partially supporting hypothesis 2.1.

A Univariate analysis of variance was also conducted to check for interactions between the level of ERP and any of the three personality variables. Only ERP had a significant effect on change in IRP (see table 2.11). With regard to the F-values and levels of significance, it seemed that NFC would have been more likely to have an effect on change in IRP than VC or CP.

Table 2.11

Test of between-subjects effects

		Expect IRP		Fair IRP		Low IRP	
Source	*df*	*F*	Sig.	*F*	Sig.	*F*	Sig.
Corrected Model	5	4.564	.001	2.475	.036	1.073	.379
Intercept	1	7.490	.007	5.026	.027	7.006	.009
NFC	1	2.275	.134	1.155	.285	2.149	.145
VC	1	1.827	.179	.821	.367	.000	.998
CP	1	.346	.558	.184	.669	.038	.847
ERP level	2	8.978	.000	4.950	.009	1.123	.329
Error	112						
Total	118						

Note: for Fair IRP, $df_{\text{Total}} = 116$

2.6. Discussion

In general, the results support the idea that consumers' internal reference price can change in response to an external reference price. The amount of change in internal reference price is influenced by the size of the discrepancy between the external reference price and consumer's initial internal reference price. A major implication of the findings, as well as those of previous research on reference prices, is that deceptive advertising has the potential to influence consumers. Even though some consumers tend to be able to protect themselves against exaggerated claims by being skeptical and discounting these claims, others, and this might be especially true for certain product categories with which they are less familiar, are likely to be strongly influenced.

Three individual difference variables were expected to moderate consumers' assimilation of an external reference price. The findings did not allow for making such conclusions. Results suggested that individuals who differ in their level of need for cognition might be differently influenced by, or might assimilate differently an exaggerated external reference price. In particular, it seemed that low NFC consumers tended to be more easily influenced by exaggerated claims. However, whereas it has been found that VC and CP were two psychological constructs that affect coupon redemption behavior (Lichtenstein et al., 1993), effects of VC and CP on consumers' assimilation of an external reference price could not be found. The non-significance of most of the results may be partially explained by the fact that the sample was composed of students. Indeed, students may not differ sufficiently in terms of personality. A direct implication

for marketers who plan to include individual variables in their studies is that they should conduct their surveys on larger samples composed of various ages and/or backgrounds. Finally, the study of individual difference was just exploratory. Regarding NFC, results were found using only a simplified scale. Future research, whose main focus would be on the potential moderating effects of individual difference variables, should be conducted more carefully.

3. Study 2 - Methodology

The third research question was dealing with the effects of savings information on consumers' internal reference price. A second study was designed to test the related hypotheses. In Study 2, four experimental conditions were created in order to differentiate the effects of two savings presentation formats (absolute, 'Save $__; and relative, 'Save __%') for two categories of products (low and high price levels). This 2x2 experimental design seemed appropriate to test the hypotheses stated in Chapter I (p.39).

Table 2.12

Experimental design for Study 2

Format	Low price level product	High price level product
%	μ_{11}	μ_{21}
$	μ_{12}	μ_{22}

The dependent variables were, as for Study 1, initial and final IRP; μ_{11} represents the mean change in IRP.

3.1. Product selection

The design of Study 2 required the selection of two products, which differed in terms of price levels. As for Study 1, the decision to create a way to stabilize initial IRP estimations below the proposed sale price lead to the selection of two unfamiliar products. As a high price level product, the Startouch 2000 telescope, which was selected in Study 1, was used again. As a result, the scenario introducing the product and the average market price information was kept unchanged, fixed at $250. Its sale price was fixed at $299.99. As for the low price level product, a telescope lens-cleaner was selected. It was given the name of LENSPENS and the related scenario was slightly modified to match the product. Its average market price was set at $8; its sale price was fixed at $10.99.

3.2. ERP and format determination

The study was designed to compare two changes in IRP, the one related to a relative savings presentation format and the other to an absolute format. In order to see different changes, it seemed preferable to use a moderate ERP level, where the change in IRP was supposed to be the highest. Thus, for both products, the selected discount level

was 60%-off. The equivalent in dollar terms was $450 for the STARTOUCH 2000 and $16 for the LENSPENS.

3.3. Questionnaire design

For a question of homogeneity between studies in the research, the design of the questionnaire as well as the measures used remained the same for Study 1 and 2.

4. Study 2 - Results

The third research question was concerned with the effects of savings information on consumers' change in IRP. Hypotheses 3-a and 3-b proposed that relative and absolute savings presentation formats would generate greater changes in internal reference price for low and high price level products, respectively.

As done in Study 1, the database was, first, prepared for the analyses. There were no missing values for any IRP. A few outlying, or extreme values were identified with SPSS. All of them were checked separately, and the researcher judged that some questionnaires were unacceptable due to IRP answers. In the low and high price level product conditions, respectively two and three respondents provided with too high initial internal reference prices. It seemed that these respondents did not pay enough attention to the scenario and guessed the average market price, even though they were provided with information about it. As a result, all five were dropped from the database.

4.1. Sample

In this study, participants were all undergraduate students at Concordia University attending either marketing research or basic marketing management classes. The sample was made up of 105 students (see table 2.13 for the distribution of participants across experimental cells). The modal respondent was a single, 22 years old student. 42% of the respondents were men. This sample presented the same characteristics as the one for Study 1.

Table 2.13.a

Distribution of subjects across experimental cells

Format	Low Price Product	High Price Product	Total
%	25	25	50
$	26	29	55
Total	51	54	105

Table 2.13.b

Sample description: Age and Income

		Age	Income
N	Valid	104	83
	Missing	1	22
Mean		21.89	59,131.33
Std Deviation		3.62	58,196.64
Variance		13.12	3.4E+09
Minimum		19	1,000
Maximum		46	250,000

Table 2.13.c

Sample description: Gender and Status

Demographic variables		Frequency	Valid Percent
Gender	Male	44	42.3
	Female	60	57.7
	Total	104	100
	Single	96	92.3
Status	Married or living together	8	7.7
	Separated or Divorced	0	0
	Widowed	0	0
	Total	104	100

4.2. Data check

As for Study 1, this part consisted in basic analyses for the data related to initial IRP answers, with a view to checking if the design of the questionnaire was appropriate for the study. First, initial IRP responses were checked with a T-test (for initial IRP = $250 and initial IRP = $8, for each product). These tests were followed by a comparison of initial IRP means between the two different format conditions, in order to assess the homogeneity of the initial responses. Results for these tests are presented in table 2.14. For the high price level product, mean Expect IRP, mean Fair IRP, and mean Low IRP equaled $239, $222, and $194, respectively. For the low price level product, the means were $8.74, $8.37, and $6.62. The results of the mean comparisons demonstrated that these three measures were significantly homogeneous between conditions. In addition,

Paired T-tests demonstrated significant changes in IRP. Thus, results showed that all three IRP measures could be used for further analyses. As discussed in Study 1, Most IRP was disregarded.

Table 2.14.a

Results of a mean comparison for homogeneity in participants' initial IRP responses

Dependent Variables	*N*	Mean	*SD*	*F*	Sig.
High Price Product					
Initial Expect IRP	54	238.70	32.17	1.476	.230
Initial Fair IRP	54	222.31	44.29	.104	.748
Initial Low IRP	54	194.02	29.89	.322	.573
Low Price Product					
Initial Expect IRP	51	8.74	1.03	.001	.975
Initial Fair IRP	51	8.37	1.49	.185	.669
Initial Low IRP	51	6.63	1.17	.175	.677

Table 2.14.b

Results of Paired T-tests for significant change in IRP

Pairs	Paired differences		*t*	*df*	Sig (2-tailed)
	Mean	*SD*			
High Price Product					
(Final – Initial) Expect IRP	42.15	72.43	4.276	53	.000
(Final – Initial) Fair IRP	48.04	74.25	4.754	53	.000
(Final – Initial) Low IRP	21.19	43.32	3.593	53	.001
Low Price Product					
(Final – Initial) Expect IRP	.78	1.56	3.599	50	.001
(Final – Initial) Fair IRP	.75	1.48	3.648	50	.001
(Final – Initial) Low IRP	.59	1.34	3.125	50	.003

4.3. Absolute and relative savings presentation formats effects

A comparison of mean change in IRP was conducted to evaluate which of the two selected presentation formats would be more efficient. Unfortunately, results of comparisons of mean change in IRP generally showed that there were no significant differences between the selected presentation formats. Hypothesis 3a stated that, for a low price level product, the relative format would generate a higher change in IRP. Mean change in IRP was about the same for the low price product, either with the relative or the absolute format. Hypothesis 3a was not supported. Hypothesis 3b stated that, for a high price level product, mean change in IRP would be higher in the absolute presentation format, as compared to the relative one. As shown in table 2.15, for the high price product, mean change in IRP was higher with a relative format that even tended to contradict Hypothesis 3b.

Table 2.15.a

Results of mean comparisons – Change in Expect IRP

Product	Code	*N*	Mean	*SD*	*F*	Sig.
Low Price	%	25	.76	1.81		
	$	26	.85	1.41	.036	.850
	Total	51	.80	1.60		
High Price	%	25	54.84	72.22		
	$	29	30.52	72.63	1.514	.224
	Total	54	41.78	72.79		

Table 2.15.b

Results of mean comparisons – Change in Fair IRP

Product	Code	*N*	Mean	*SD*	*F*	Sig.
Low Price	%	25	.68	1.70		
	$	26	.85	1.26	.158	.692
	Total	51	.76	1.48		
High Price	%	25	52.56	60.76		
	$	29	44.14	85.06	.170	.682
	Total	54	48.04	74.25		

Table 2.15.c

Results of mean comparisons – Change in Low IRP

Product	Code	*N*	Mean	*SD*	*F*	Sig.
Low Price	%	25	.32	1.28		
	$	26	.88	1.45	2.162	.148
	Total	51	.61	1.39		
High Price	%	25	27.36	42.96		
	$	29	15.86	43.67	.945	.336
	Total	54	21.19	43.32		

Table 2.16 presents the results of a Univariate analysis of variance that was further conducted. The dependent variable was change in IRP, whereas the fixed factors were the presentation format ($ or %) and the product. Neither the format nor the interaction between the format and the product had any significant effect on changes in any of the three IRP measures. Thus, we can conclude that the two selected formats did not cause any significant difference in change in IRP.

Table 2.16.a

Test of between-subjects effects - Expect IRP

Source	*df*	Mean Square	*F*	Sig.
Corrected Model	3	17,325.615	6.410	.001
Intercept	1	49,446.970	18.293	.000
PRODUCT	1	45,861.433	16.966	.000
FORMAT	1	3,840.699	1.421	.236
PRODUCT*FORMAT	1	3,895.503	1.441	.233
Error	101	2,703.075		
Total	105			

Table 2.16.b

Test of between-subjects effects - Fair IRP

Source	*df*	Mean Square	*F*	Sig.
Corrected Model	3	19,854.986	6.884	.000
Intercept	1	63,081.599	21.870	.000
PRODUCT	1	59,222.000	20.532	.000
FORMAT	1	445.653	.155	.695
PRODUCT*FORMAT	1	482.251	.167	.683
Error	101	2,884.400		
Total	105			

Table 2.16.c

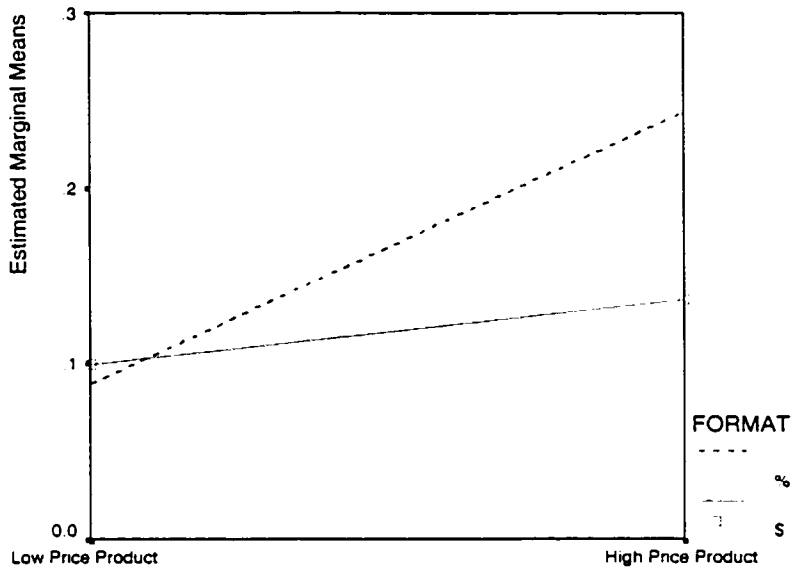
Test of between-subjects effects - Low IRP

Source	*df*	Mean Square	*F*	Sig.
Corrected Model	3	4,294.963	4.436	.006
Intercept	1	12,904.896	13.328	.000
PRODUCT	1	11,543.199	11.922	.001
FORMAT	1	781,575	.807	.371
PRODUCT*FORMAT	1	951.360	.983	.324
Error	101	968.251		
Total	105			

Figure 2.2 illustrates the results obtained in Study 2 for change in Expect IRP. For each product and format, the change in IRP has been expressed in percentage as follows: (change in IRP / initial IRP). This allowed to comparing relative changes in IRP between products. The tendency for relative change in IRP to be greater with a % savings presentation format is well illustrated.

Figure 2.2

Estimated Marginal Means of Percentage of Change in Expect IRP



As a conclusion, results did not support the hypotheses that were made regarding the effects of two savings presentation formats on consumers' change in IRP. From this research, it seemed impossible to conclude in the preference of either absolute or relative savings presentation format.

4.4. Other Dependent Variables

The analysis of Study 2 was extended to study the effects of savings presentation format on the five other dependent variables. First are discussed the results for source credibility, and then, those for the other ones.

The method used were the same as for Study 1. Reliability for the scale was checked with Cronbach's alpha coefficient, which equaled .7751 for the low price product conditions, and .7011 for the high price product conditions (fortunately, these results were very similar to the result found in Study 1). Mean scores on source credibility were between 5 and 5.5. As a result, there were non-significant differences between conditions

As there were no significant differences in IRP revision between the two format conditions, it was not expected to see differences for the other dependent variables. Mean comparisons for each of the other dependent variables were conducted, nevertheless. Results were non-significant for all of the variables (as shown in appendix 4). Respondents rated, on average, on the likelihood to buy the product, the satisfaction with the sale price, its attractiveness, and likelihood to search for a better price, respectively, 5.42, 5.05, 4.93, 8.67 for the high price product, and 7.76, 6.98, 6.49, 5.87 for the low price product.

4.5. Discussion

The findings of Study 2 suggested that the savings presentation format did not generate different changes in IRP for either product. This suggestion proved to be true at least for the presentation format and discount levels studied in the present research. If the

stated hypotheses were to be supported, it would probably be with products that would have a lower price than the $10.99 sale price for the lens cleaner, and a higher price than the $299.99 sale price for the telescope. This suggests that savings presentation format effects would occur in only extreme situations. Thus, only for products with a sale price below $10, such as food cans for example, would the relative format be more effective. On the opposite, only for products with a sale price way higher than $300, such as computers, or cars for example, would the absolute format have a greater effect on the assimilation of an external reference price.

These results were not consistent with previous research (Barnes, 1975; Berkowitz and Walton, 1980) that demonstrated that consumers' perceptions and evaluations could be influenced by semantic cues. However, the results tended to support the idea that there might not be any reason to expect different responses related to the absolute versus relative presentation format, consistent with the results found by Della Bitta and his associates (1981). A direct implication is the need for future research to manipulate the independent variables more strongly. Such research could focus mainly on the manipulation of several discount levels and on the way this information is presented. This manipulation could be done for several products that would differ in terms of price levels. In sum, research is needed in order to give new insights for this conflicting body of research, such as determining where a crossover, all the possible situations where absolute and relative formats are equally effective, may occur.

Chapter III: GENERAL DISCUSSION

Study 2 did not show any differences in change in internal reference price between the two selected savings presentation formats and for the selected products. However, Study 1 demonstrated that an external reference price positively affects consumers' internal reference price. Concerning the effects of an exaggerated external reference price, it seems that different individuals assimilate it in different ways. Discussion and research on this topic still has to be made. The first point deals with the limitations to the research.

1. Limitations

Before extending the discussion on consumer's assimilation of an external reference price, a few limitations to the current research have to be addressed. These limitations are a result of the particular sample, products and design that were chosen.

1.1. Sample

Although students are also consumers, generalization of the results to other populations should be done cautiously. Because students often rely on parental funding, they might not possess the same degree of price consciousness as other consumer groups (Alford and Engelland, 2000). Also, one particularity of Concordia University is the diversity of its students. While the number of Canadian resident studying in this

university is still large, we have to know that a lot of the remaining students are coming from various countries in Europe, Asia, Africa and the rest of America. This cultural effect was not controlled for in the study and might have an importance in the perception process.

Due to budgetary and time constraints, the number of participants in the study was limited. While 40 subjects per experimental cell in Study 1 was an acceptable size, it was slightly insufficient to create large median splits, as it was done for the study of individual difference variables.

1.2. Price manipulations and measures

There has been a lot of discussion in price perception literature on the issue of the measure of internal reference price. Some research gave interesting insights on how to measure IRP. For instance, it has been recognized that IRP is a multi-dimensional concept (Chandrashekaram and Harsharanjeet, 1996; Klein and Oglethorpe, 1987); internal reference price is seen as a memory-based concept and as a function of a consumer's accessibility of relevant information in memory and the extent to which this information is diagnostic for the evaluation of prices (Briesch et al., 1997). However research is still needed to understand all the bases for the measurement of this concept.

The current study compared the effect of different reference prices and also the percentage off versus dollar off presentation format using the wording: "Regular Price ____; Sale Price ____; Save ____". Marketers commonly use more elaborated messages to appeal consumers such as "Total value ___ ; You just pay ___; Incredible: Save ____"

that may also have an influence on consumer responses. However, it was necessary to control for these other factors in order to examine more closely the effect of ERP and savings on IRP. Many other factors can also play an important role in the market place, but they had to be controlled for. The most obvious example might be the prices of competitors or different prices for similar products that provide an objective reference scale of prices and might alter how much people rely on the external reference price of interest.

1.3. Product category

Study 2 included two products that differed in terms of price level. As a result, the lens cleaner was considered as a low price level product, and the telescope as a high price one. Such perception may be influenced by factors such as income level or knowledge of prices. These factors were not controlled for in the study, and that is a limitation to the study. However, respondents were all students from similar classes and their knowledge of prices are probably similar.

Past research involving multiple brands or product categories have shown important brand or category differences in promotional responses (Compeau and Grewal, 1998). The lesson is that available research can illustrate different approaches and issues to be considered, but the actionable answer for a marketer must come from research involving the marketers' brands and its competitors.

The next section discusses and proposes several directions for future research about several issues on price promotion research and on price promotion.

2. General discussion

While results in Study 2 were found to be non-significant and did not allow to making extensive recommendations on what would be a more efficient way to frame the savings, the unexpected results found in Study 1 were demanding for an extension of the analysis in order to explain the phenomenon. Thus, the study was extended to cover three important issues in reference price research. First, a discussion on the measures of internal reference price is made. Second, the findings are related to existing knowledge about the assimilation of an exaggerated external reference price. Third, some issues about the potential moderating effects of price familiarity are discussed.

2.1. Measuring change in internal reference price

The present research contributes to existing literature on price promotion in that it is one of the few that measured changes in price beliefs. Where most of previous research only focused on measuring evaluative-based responses, such as perceived savings and perceived value of the offer, and on comparing their means between experimental groups, the present research attempted to manage the difficult task of measuring cognitive-based responses, namely changes in consumers' internal reference price.

2.1.a) Measures of IRP

Internal reference price was conceptualized as the price a consumer expects to pay and was directly measured with Expect IRP. From the definition, internal reference price

belongs to a range of expected prices that one can reasonably observe on the market. It has been recently discussed that current pricing theory needs to be updated in order to consider the influence of the range of evoked price as well as the internal reference price (Janiszewski and Lichtenstein, 1999; Niedrich et al., 2001). As multiple measures of internal reference price were recommended, a lower and higher internal price standards were selected as indirect measures (Lichtenstein et al., 1991).

Low IRP was measuring the lower limit of the range of expected prices, that is, the lowest price an individual would expect to observe on the market (Lichtenstein and Bearden, 1989). To a certain point, consumers expect not to pay much more than the lowest price they expect to see. Both internal price standards are probably highly correlated. Thus, Low IRP was considered as an appropriate indirect measure of IRP. The upper limit of this range is the highest price an individual would reasonably expect to observe. However, this point of reference is more a believability threshold than the upper limit of the internal reference price and must be significantly higher than the actual internal reference price. A lower internal price standard may be the highest price an individual would be willing to pay (Lichtenstein and Bearden, 1989; Urbany et al., 1988). Indeed, only a few people may be willing to pay more than the highest price they accept as reasonable. Most IRP measures this standard and was selected as an indirect measure of internal reference price.

Yet, it happened sometimes that Most IRP was below Expect IRP. For example, an individual who expects to pay $299 for a TV set, or who thinks this price is fair, may not be willing to pay more than $200 because of budgetary constraints or simply because he does not have a great interest in the product (Lichtenstein et al., 1988). Most IRP is

person-specific because other personal characteristics such as income or motivation to purchase the product may influence the formation of this limit. Lichtenstein et al. (1988) argued that two individuals might have identical internal reference prices, but evaluate the same sale price differently as they differ in the most they are willing to pay. Most IRP was not an appropriate measure as it probably fluctuates independently from the internal reference price.

Other indirect measures of internal reference price may be more reliable. For example, the highest price an individual expects to have to pay would be lower than the highest price s/he would expect to observe and could be a better measure. For example, someone may expect to pay $299 for a TV set. She may also expect that she will not have to pay more than $350 and the highest price she expects to see in a few stores may be $450. Similarly, low internal price standards should also be selected with care. Indeed, if the lowest price an individual expects to see belongs to the acceptable price range, it may be close to the highest price he expects to pay (if the one he sees is judged acceptable). However, if an individual expects to see a price that is too low and judges it as unacceptable because of poor quality and, thus, poor value (Urbany et al., 1988), it may be distant from the lowest price he expects to pay.

Finally, Fair IRP was selected as another direct measure of IRP. This measure presented the same kind of results as Expect IRP. Niedrich et al. (2001) suggested that consumers compare the target price against all the prices of the range. However, it is supposed that consumers do not equally weight all these reference prices.

2.1.b) Width of range of internal price standards

It has been suggested that internal price standards are consumer-specific and may vary in their wideness. For a given consumer, the width may also vary differently with the provision of different external reference prices. Alford and Engelland (2000) observed a significant reduction in the width of consumers' price continuums as a result of the assimilation of a plausible external reference price, while no change occurred with an implausible external reference price. As this reduction was due to negative changes in internal reference price, increases in internal reference prices were more likely to generate increases in width of internal price ranges.

Because of an inappropriate measure of Most IRP, the width in respondents' internal price ranges was calculated with the difference between Expect and Low IRP. The results presented in table 3.1 demonstrated that the width decreased in the low ERP condition and increased strongly only in the exaggerated external reference price condition.

Table 3.1

Width in internal price standards

	Low ERP		Moderate ERP		High ERP	
Dependent variables	Initial IRP	Final IRP	Initial IRP	Final IRP	Initial IRP	Final IRP
Expect IRP	256	274	238	293	241	428
Low IRP	202	237	187	240	194	251
Width	54	37	51	47	47	177

These findings are consistent with those of Lichtenstein and Bearden (1989) who found that a credible reference price generates a narrower range of internal price standards, whereas an exaggerated external reference price widens these standards.

2.2. Some issues about the assimilation of an exaggerated ERP

Past research presented conflicting results about the outcomes of an exaggerated external reference price. On one hand, and consistent with Adaptation-level theory, it has been suggested that an implausible ERP should have no effect on consumers' IRP. Alford and Engelland (2000) found a significant change in IRP for a plausible ERP, but not for an implausible one. However, the IRP changes found in their study were actually decreases. It would be interesting to find out whether increases in IRP occur in the same manner as decreases, On the other hand, it has also been suggested that an implausible ERP would not be totally rejected, but rather discounted. This research question was treated in previous research: "Can consumers view an ERP with scepticism and still be influenced?" (Urbany et al., 1988, p. 106). Consistent with other findings (Blair and Landon, 1981; Biswas et al., 1999), their results demonstrated that even the more sceptics could be influenced. Thus, it is proposed that an exaggerated ERP do have the capacity to mislead, but that deception is not guaranteed.

More recently, the inverted-U relationship between an ERP and consumers' change in IRP has been tested but not supported (Lichtenstein and Bearden, 1989). The researchers selected a desk as a product with which student would have a great level of knowledge. However, it seemed that students lacked of purchase experience and did not

have enough information to discriminate between an implausible and plausible ERP. As a result, an implausible ERP resulted in significant higher changes in IRP as compared with a plausible one.

The unexpected results found in Study 1 could be explained in the same way as for the research of Lichtenstein and Bearden. It was expected that the scenario would inform participants with the average market price; however, the manipulation was probably not strong enough to create confidence in price estimations. Indeed, after respondents had given their estimation of the price they would expect to pay, they were asked to rate their level of confidence with their price estimation on an 11-point question (from 1 = not at all confident to 11 = extremely confident, with 6 = somewhat confident as a mid-point; see appendix 1). Results showed that respondents' mean confidence equalled 7.40, which suggested that they were a bit more than "somewhat confident" with their estimations.

Nevertheless, these results were demanding for an extension of the analysis in order to explain the phenomenon. A closer look at the data for the high ERP condition at the individual level enabled to make additional comments. As a reminder, mean change in Expect IRP for the low, moderate, and high ERP conditions were 18.46, 55.45, and 186.77, respectively. As for the high ERP condition, eight values were identified as outlying, or extreme with SPSS. A closer look at the distribution showed that a few respondents provided with relatively high final Expect IRP answers as compared to the others (see table 3.2).

Table 3.2

Answers of the eight influenced subjects in Study 1

Expect IRP initial	Confidence in price estimation	Expect IRP final	Change in Expect IRP	NFC	VC	CP
250	6	1,000	750	5.56	5.33	1.50
250	10	1,049	799	5.67	6.83	2.00
275	7	1,100	825	6.22	5.17	1.00
275	5	1,000	725	4.67	5.50	4.83
200	10	1,000	800	5.44	7.50	2.67
200	8	800	600	3.22	7.83	6.00
200	5	1,000	800	4.89	5.33	4.67
250	8	1,050	800	2.00	6.17	4.00

A quick cluster analysis was conducted and demonstrated that these eight values formed a cluster that was significantly different from another cluster, which gathered the remaining answers. Thus, and as shown in table 3.3, mean change in Expect IRP for the cluster which contained the eight extreme values was 762, whereas the same mean for the other cluster was only 38. As noted, mean change in Expect IRP for the whole high ERP condition was 186. These results demonstrated how strong the influence of these eight responses was.

Table 3.3

Results of Quick Cluster analysis on change in Expect IRP

Cluster	*N*	Mean	*F*	Sig.
1. Skeptics	31	38	600.965	.000
2. Influenced	8	762		
Total	39	186		

These results were particularly interesting for the understanding of the possible outcomes of an exaggerated ERP. Based on the Assimilation-Contrast theory, it was hypothesized that such an ERP would have been contrasted, resulting in no, or a low, change in consumers' IRP. It was also proposed that consumers would rather discount the ERP. The findings of the research suggested that, instead of stating that subjects were influenced and just changed their Expect IRP of 186, on average, it may be more accurate to state that the two possible responses to an exaggerated ERP previously discussed appeared. First, some subjects may have been sceptics towards the claim and, even though they still tended to be influenced (showed by the significant increase in Expect IRP), the change in Expect IRP was relatively low. Mean change in Expect IRP for the large cluster was 38, which was not significantly higher than the 55 mean change found in the moderate ERP condition. Second and oppositely, some others might have been totally influenced by the claim and changed their IRP accordingly. In this case, a few respondents provided with final Expect IRP answers that were higher than $1,000. An

interesting report is that there were no 'in-between' answers, which would correspond to $500 change in Expect IRP, for example, provided by respondents who would have been sceptics, but still partially influenced. However, it might be dangerous to conclude that there were actually only two kinds of population, which would be the sceptics and the influenced, as there were only eight influenced subjects.

The same report was made with Fair IRP. Mean changes in Fair IRP for the low, moderate, and high condition were 28.84; 82.41; and 137.79, respectively. As for the high ERP condition, six values were identified as extremes by SPSS. As shown in table 3.4, the results of a Quick Cluster analysis showed that these six values formed a cluster, which mean change in Fair IRP equalled 617, and which would significantly differ from another cluster, gathering the remaining answers, and whose mean change in Fair IRP was 51. These observations could not be made for Low IRP, as no outlying, or extreme values were identified. A summary of these results can be found in appendix 5.

Table 3.4

Results of Quick Cluster analysis on change in Fair IRP

Cluster	*N*	Mean	*F*	Sig.
1. Sceptics	33	51	258.123	.000
2. Influenced	6	617		
Total	39	138		

In addition, the scores on the three personality variables of the influenced subjects were checked. Unfortunately, no conclusion could be made as for each of the three variables, half of these respondents were low, whereas the other half was, as a result, high (see table 3.2).

2.3. Some issues about the potential effects of price familiarity

It has been recognized in many research on price promotion that price familiarity may moderate the assimilation of an external reference price. Already a few decades ago, Fouihld (1960) discovered that familiarity had an effect on the width of internal price range. The problem was well discussed in a research conducted by Biswas and Blair (1991) who explained that: "The amount of change depends on ... consumers' confidence in various initial price beliefs" (p. 4). They suggested that product knowledge, brand and store familiarity, price consciousness and purchase experience could be confidence factors that would moderate the assimilation of an external reference price. Recently, Alford and Engelland (2000) considered the moderating effect of price familiarity. In their study, they used a product that was familiar to the research participants. Price familiarity was ensured through a pre-test, and tennis shoes and telephones were selected for their research. Results demonstrated that only a plausible ERP had a significant effect on IRP. They explained that: "price adjustments may not be evident with product/subject combinations having lower price familiarity" (p. 97). Familiarity may explain the lack of effect when the subject is exposed to an implausible external reference price. Indeed, a

greater level of price familiarity may provide more confidence in price estimates, thus, reducing susceptibility to an implausible ERP.

Based on the idea that for two levels of price familiarity, there could be two different responses to an exaggerated external reference price, the analysis has been extended in order to investigate the change in IRP for two different levels of confidence in price estimations. As already explained, respondents were asked to rate their level of confidence with their Expect IRP estimation. Mean confidence equalled 7.40. The variance of the responses was pretty small (4.66). Nevertheless, a median split on this measure was done in order to compare the answers of respondents who were low in confidence with those of respondents who were high in this dimension. As it was done for the personality variables, the sample was split into two. Respondents who had a lower score than the median, which equalled 8, were attributed a 0 and were considered as low in confidence, whereas those who had a higher score were attributed a 1 and considered as high in confidence. As a result, mean score for low in confidence was 5.58, whereas it was 9.02 for the other group. A mean comparison was done in order to check whether low in confidence respondents would be more influenced by an exaggerated external reference price than high in confidence respondents.

Past research suggested that price familiarity could be a moderator of the effects of an external reference price on consumers' reactions. Unfortunately, results that are presented in table 3.5 proved that there were no significant differences between the two groups.

Table 3.5

Results of a mean comparison between confidence level

Dependent variables	Confidence level	*N*	Mean	*SD*	*F*	Sig.
Change in Expect RP	Low	18	191.94	321.98	.009	.923
	High	21	182.33	298.09		
	Total	39	186.77	305.21		
Change in Fair RP	Low	18	101.67	160.59	.890	.352
	High	21	168.76	262.28		
	Total	39	137.79	221.11		
Change in Low RP	Low	18	60.83	104.47	.046	.832
	High	21	55.24	55.31		
	Total	39	57.82	80.63		

The non-significant difference between both groups that differed in confidence levels may be a result of two confidence means that were too close to each other. Blair and Landon (1981, p. 63) stated that: "External reference price effects are more likely to occur when the product is not well known and therefore difficult to compare within consumers general knowledge of prices". Product selection is critical in this kind of research and the selection of familiar products, for which familiarity was checked through pre-tests, has been advised in order to observe the hypothesized inverted-U relationship between the change in internal reference price and the discrepancy between the external reference price and the initial internal reference price. However, familiar products that were usually selected in past research generated variability in initial internal reference price answers, which were sometimes greater than the external reference price. In the present research, a non-familiar product was selected and accompanied with

information about the average market price, in order to get initial internal reference price answers that responded to criteria of stability below the external reference price. Unfortunately, the manipulation did not manage to create a level of confidence in price estimations high enough to observe the inverted-U shape.

Two directions for future research are proposed. First, in order to investigate the effects of price familiarity, future research could select some products and samples that would allow for a great variance in price familiarity or confidence in price estimation. Thus, it would be possible to compare consumers' assimilation of an external reference price for a single product, but for different levels of respondents' price familiarity or confidence in price estimations. These manipulations would probably enable to observe an inverted-U shape for the sample that would demonstrate a high level of price familiarity, whereas a monotonic relationship would be observed for the other sample. Second, in order to examine more closely the inverted-U relationship between the change in internal reference price and the discrepancy between the external reference price and the initial internal reference price, future research could select a familiar product (ensuring familiarity through pre-tests such as done by Alford and Engelland, 2000). In order to overcome the problem of variability in the answers, an interactive type of survey could be conducted. Subjects would come in a computer lab and give their initial internal reference price answers on a computer. A program would calculate the external reference price level, given the initial answers, so that every subject responds to the same discount level and so that the external reference price is always greater than the initial internal reference price. In addition, these manipulations would generate different levels of discrepancies between external reference price and initial internal reference price. For

example, an individual that would provide an initial internal reference price of $200 would respond to a $333 external reference price (60%-off) and the discrepancy would be $133. Another individual that would answer $300 would respond to a $500 external reference price (also 60%-off) and the discrepancy would be $200. To sum up, product selection and price manipulations are the critical points in this kind of research and should be carefully determined.

CONCLUSION

The purpose of the present research on price promotion was to contribute to existing knowledge of how a price promotion affects consumers' price beliefs and subsequent perceptions and evaluations. To this aim, an experiment was conducted and provided with interesting results.

The discounting hypothesis, or the way consumers revise their internal reference price even when faced to an exaggerated ERP, finds its importance as the situation of an uncertain purchase situation happens quite often. Most product categories have a considerable variety of brands and prices. Price awareness research has shown that consumers' ability to recall prices accurately varies across and within product categories (Briesch et al., 1997). Besides, there are a lot of purchase situations that are infrequent and uncertain (durable goods purchases). For such reasons, it is important not to disregard the influence of price variability and price familiarity, or uncertainty (Janiszewski and Lichtenstein, 1999).

With regards to the study on the savings presentation format, and as no differences between absolute versus relative format were found, we can still rely on the prescriptions of Heath, Chatterjee and France (1995). It still seems relevant to state what is large, and sometimes maybe, the dual format might be found as an interesting way of communicating to consumers.

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APPENDICES

Appendix 1: Experimental booklet

Instructions

We thank you for your cooperation. We value your participation in this study. We kindly ask that you complete the following questionnaire. Please read the instructions carefully.

For the purposes of this task, please assume that you are in the situation described below.

One of your best friends will be celebrating his birthday shortly, and you and a couple of other friends want to buy him a birthday present. You know that your friend is interested in astronomy and regularly observes the sky as a hobby. He has mentioned you that he is considering replacing his existing telescope with a new model: the STARTOUCH S-1050 telescope.

You and your other friends decided to buy him this product as a birthday present. Everyone agreed to contribute for the present and you volunteered to shop for this telescope. Obviously, you want to get the product at the best possible price. To educate yourself about telescope prices, you search for some information about the STARTOUCH S-1050 on Internet. **You find out that the average price for the STARTOUCH S-1050 telescope is $250 for stores in Montreal.**

Now, we would like to ask you a few questions regarding the STARTOUCH S-1050. Please answer **ALL** the questions carefully. Please note that there are no good or bad answers.

Please provide a number after each of the following questions.

What price would you expect to pay for the STARTOUCH S-1050 in a Montreal store?

$_____

Given results of the Internet price search, how confident are you that you will get the price you stated above? (Circle your answer)

1	2	3	4	5	6	7	8	9	10	11
Not at all Confident					Somewhat Confident					Extremely Confident

What do you think a fair price for the STARTOUCH S-1050 would be in a Montreal store?

$_____

What do you think is the lowest price in Montreal that you could find the STARTOUCH S-1050 selling for?

$_____

What is the most you would pay for the STARTOUCH S-1050?

$_____

Next, we would like you to respond to questions about your attitudes, opinions, and interests with respect to a variety of topics. **Please indicate to what extent each of the following statements describes you** (circle the appropriate number).

	Does not describe me at								**Describes me perfectly**
I am very concerned about low prices, but I am equally concerned about product quality.	1	2	3	4	5	6	7	8	9
Coupons have caused me to buy products I normally would not buy.	1	2	3	4	5	6	7	8	9
I have favorite brands, but most of the time I buy the brand I have a coupon for.	1	2	3	4	5	6	7	8	9
When I shop, I usually compare the "price per ounce" information for brands I normally buy.	1	2	3	4	5	6	7	8	9
When purchasing a product, I always try to maximize the quality I get for the money I spend.	1	2	3	4	5	6	7	8	9
I enjoy getting coupons regardless of the amount I save by doing so.	1	2	3	4	5	6	7	8	9
Redeeming coupons makes me feel good.	1	2	3	4	5	6	7	8	9
When I buy products, I like to be sure that I am getting my money's worth.	1	2	3	4	5	6	7	8	9
I always check prices to be sure that I get the best value for the money I spend.	1	2	3	4	5	6	7	8	9
I compare the prices of different brands to be sure that I get the best value for the money.	1	2	3	4	5	6	7	8	9
I generally shop around for lower prices on products, but they still must meet certain quality requirements before I will buy them.	1	2	3	4	5	6	7	8	9
Beyond the money I save, redeeming coupons gives me a sense of joy.	1	2	3	4	5	6	7	8	9
When I use coupons, I feel that I am getting a good deal.	1	2	3	4	5	6	7	8	9

	Does not describe me at								Describes me perfectly
I would prefer complex to simple problems.	1	2	3	4	5	6	7	8	9
I like to have the responsibility of handling a situation that requires a lot of thinking.	1	2	3	4	5	6	7	8	9
I find great satisfaction in deliberating hard and for long hours.	1	2	3	4	5	6	7	8	9
The idea of relying on thought to make my way to the top appeals to me.	1	2	3	4	5	6	7	8	9
I really enjoy a task that involves coming up with new solutions to problems.	1	2	3	4	5	6	7	8	9
I prefer my life to be filled with puzzles that I must solve.	1	2	3	4	5	6	7	8	9
The notion of thinking abstractly is appealing to me.	1	2	3	4	5	6	7	8	9
I prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.	1	2	3	4	5	6	7	8	9
I usually end up deliberating about issues even when they do not affect me personally.	1	2	3	4	5	6	7	8	9

Please turn on to next page.

Now, assume that you start visiting some retailers in downtown Montreal in order to find the STARTOUCH S-1050 for your friend's birthday. You notice the following advertisement at one such retailer:

> NOW ON PROMOTION: the STARTOUCH S-1050 telescope
>
> - Computerized star locator telescope features 563x60mm refraction
> - New on-board computer to locate over 20,000 astronomical objects
> - Innovative 'Kinematic Mount' with unique bearings improves precision
>
> Sale Price $ 299.99 Regularly sold at $ 449.99

Please respond to the following questions about this advertisement. It is important that you answer **ALL** the questions carefully. Please note that there are no good or bad answers.

First, we would like to know what you think about available prices for the STARTOUCH S-1050.

Please provide a number after each of the following questions.

What price would you expect to pay for the STARTOUCH S-1050 in a Montreal store?

$_____

How confident are you that you will get the price you stated above? (Circle your answer)

1	2	3	4	5	6	7	8	9	10	11
Not at all Confident					Somewhat Confident					Extremely Confident

What do you think a fair price for the STARTOUCH S-1050 would be in a Montreal store?

$_____

What do you think is the lowest price in Montreal that you could find the STARTOUCH S-1050 selling for?

$_____

What is the most you would pay for the STARTOUCH S-1050?

$_____

What is the highest market price for the STARTOUCH S-1050 that you would expect to see in Montreal?

$_____

If you were ***really*** in this situation, how likely would you be to buy the STARTOUCH S-1050 for **$299.99**?

1	2	3	4	5	6	7	8	9	10	11
Very Unlikely					Neutral					Very Likely

If you were ***really*** in this situation, how satisfied would you be with the purchase price of **$299.99**?

1	2	3	4	5	6	7	8	9	10	11
Extremely Dissatisfied					Neutral					Extremely Satisfied

If you were ***really*** in this situation, how attractive would the purchase price of **$299.99** be to you?

1	2	3	4	5	6	7	8	9	10	11
Unattractive					Neutral					Attractive

If you were ***really*** in this situation, how likely is it that you would search for a price better than **$299.99**?

1	2	3	4	5	6	7	8	9	10	11
Very Unlikely					Neutral					Very Likely

Next, we would like you to respond to questions regarding your reactions to the advertisement you have seen on the previous page. **Please circle the number that corresponds best to your level of agreement with it.** .

	Strongly agree								**Strongly disagree**
I think that the merchant who created the advertisement...									
...is sincere.	1	2	3	4	5	6	7	8	9
...is not credible.	1	2	3	4	5	6	7	8	9
...is honest.	1	2	3	4	5	6	7	8	9
...is not trustworthy.	1	2	3	4	5	6	7	8	9
...is dependable.	1	2	3	4	5	6	7	8	9

This is the final section of the questionnaire. Your responses to the following questions will be used for classification purposes.

1. Are you _____ Male _____ Female

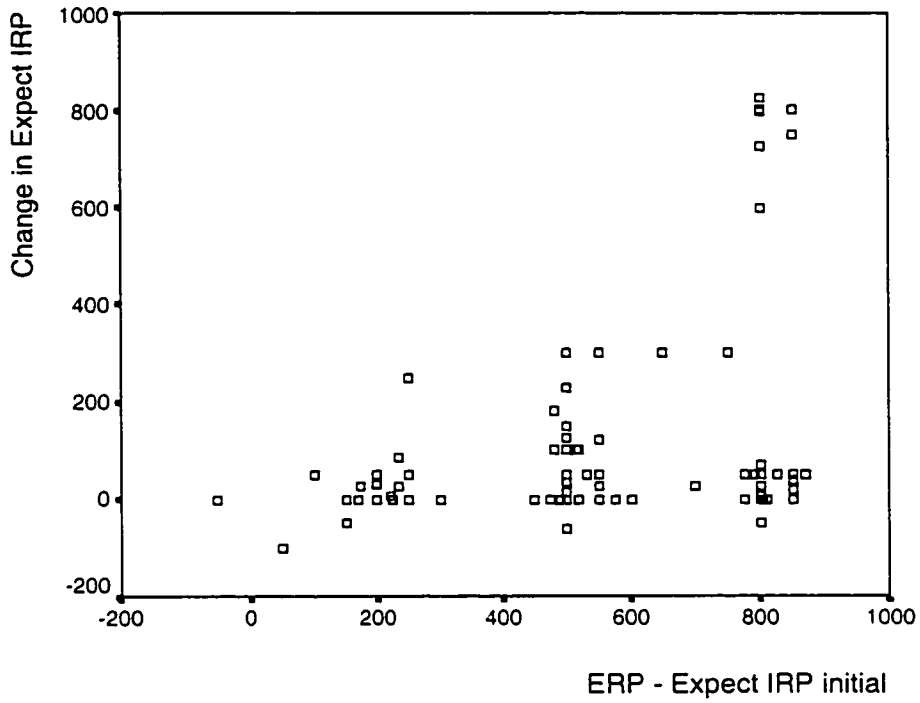
2. Are you _____ Single
   _____ Married or living together
   _____ Separated or divorced
   _____ Widowed

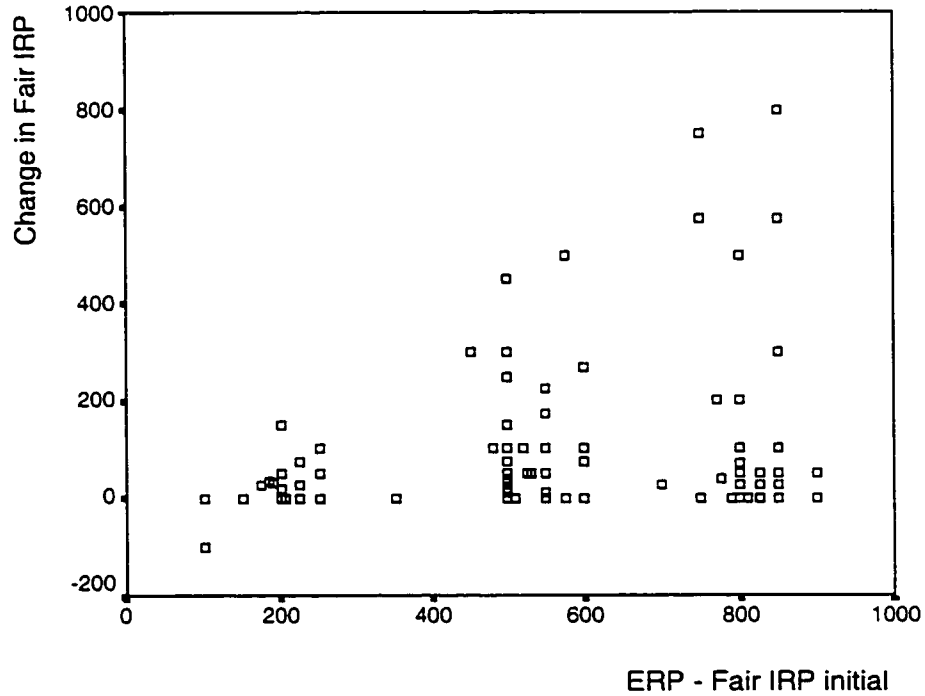
3. Please indicate your age: _____ years

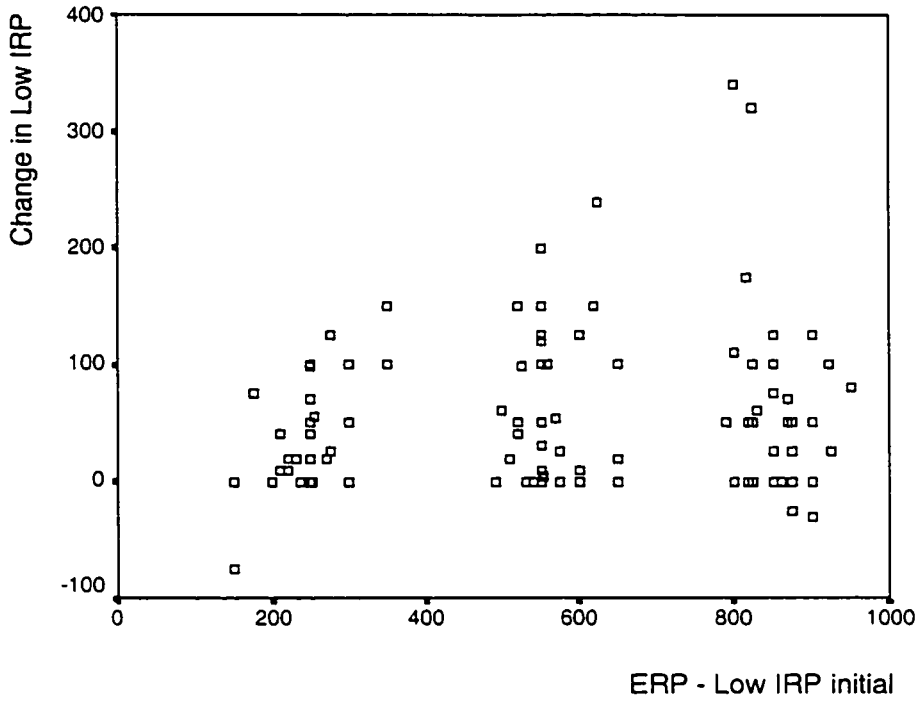
4. Please indicate your annual household income: $ _____ per year

Thank you very much for your cooperation.

Appendix 2: Study 1 - Scatter Plots






Change in Low IRP
400
300
200
100
0
-100
0
200
400
600
800
1000
ERP - Low IRP initial

Appendix 3a

Results of a mean change in IRP comparison between NFC type – Moderate ERP

Dependent variables	NFC type	*N*	Mean	*SD*	*F*	Sig.
Change in Expect IRP	Low	20	46.90	77.17	.423	.519
	High	20	64.00	88.62		
	Total	40	55.45	82.48		
Change in Fair IRP	Low	20	77.95	112.33	.055	.816
	High	19	87.11	130.87		
	Total	39	82.41	120.18		
Change in Low IRP	Low	20	45.70	59.00	.501	.483
	High	20	60.45	72.08		
	Total	40	53.08	65.44		

Appendix 3b

Results of a mean change in IRP comparison between VC type – Moderate ERP

Dependent variables	VC type	*N*	Mean	*SD*	*F*	Sig.
Change in Expect IRP	Low	24	53.25	85.82	.042	.839
	High	16	58.75	79.84		
	Total	40	55.45	82.48		
Change in Fair IRP	Low	23	79.09	120.61	.042	.839
	High	16	87.19	123.33		
	Total	39	82.41	120.18		
Change in Low IRP	Low	24	45.00	70.26	.911	.346
	High	16	65.19	57.49		
	Total	40	53.08	65.44		

Appendix 3c

Results of a mean change in IRP comparison between VC type – High ERP

Dependent variables	VC type	*N*	Mean	*SD*	*F*	Sig.
Change in Expect IRP	Low	20	238.00	333.08	1.162	.288
	High	19	132.84	271.24		
	Total	39	186.77	305.21		
Change in Fair IRP	Low	20	132.00	209.24	.027	.869
	High	19	143.89	238.59		
	Total	39	137.79	221.11		
Change in Low IRP	Low	20	65.50	100.35	.366	.549
	High	19	49.74	54.40		
	Total	39	57.82	80.63		

Appendix 3d

Results of a mean change in IRP comparison between CP type – Moderate ERP

Dependent variables	VC type	*N*	Mean	*SD*	*F*	Sig.
Change in Expect IRP	Low	19	57.58	95.27	.024	.879
	High	21	53.52	71.33		
	Total	40	55.45	82.48		
Change in Fair IRP	Low	18	111.06	159.28	1.947	.171
	High	21	57.86	67.11		
	Total	39	82.41	120.18		
Change in Low IRP	Low	19	68.89	76.09	2.179	.148
	High	21	38.76	51.85		
	Total	40	53.08	65.44		

Appendix 3e

Results of a mean change in IRP comparison between VC type – high ERP

Dependent variables	VC type	*N*	Mean	*SD*	*F*	Sig.
	Low	21	176.86	313.83		
Change in Expect IRP	High	18	198.33	303.47	.047	.830
	Total	39	186.77	305.21		
	Low	21	107.81	204.52		
Change in Fair IRP	High	18	172.78	240.15	.833	.367
	Total	39	137.79	221.11		
	Low	21	44.05	53.75		
Change in Low IRP	High	18	73.89	103.08	1.339	.255
	Total	39	57.82	80.63		

Appendix 4a: Study 2 – High Price Level Product

Results of a mean comparison for the other dependent variables

Dependent variables	ERP level	*N*	Mean	*SD*	*F*	Sig.
Source credibility	%	24	5.47	1.36	.455	.503
	$	28	5.74	1.48		
Price Satisfaction	%	25	5.28	2.72	.102	.751
	$	29	5.03	2.91		
Price attractiveness	%	25	5.32	2.67	1.97	.167
	$	29	4.38	2.26		
Search intention	%	24	5.00	2.43	.745	.392
	$	29	4.41	2.49		
Purchase intention	%	25	8.72	2.34	.101	.752
	$	29	8.93	2.52		

Appendix 4b: Study 2 – Low Price Level Product

Results of a mean comparison for the other dependent variables

Dependent variables	ERP level	*N*	Mean	*SD*	*F*	Sig.
Source credibility	%	25	5.08	1.39	1.245	.270
	$	24	5.52	1.40		
Price Satisfaction	%	25	7.72	2.37	.008	.930
	$	26	7.65	2.97		
Price attractiveness	%	25	6.40	2.22	1.431	.237
	$	26	7.19	2.50		
Search intention	%	25	6.16	2.27	.270	.606
	$	26	6.54	2.89		
Purchase intention	%	25	6.44	2.68	.926	.341
	$	26	5.58	3.64		

Appendix 5: Study 1: Summary of results

Dependent Variables	Low ERP	Moderate ERP	High ERP	Level of significance
Expect IRP	18	55	38	10%
			762	*1%*
Fair IRP	30	82	51	10%
			617	*1%*
Low IRP	35	53	58	NS
Buying intention	6.8	5.4	6.9	NS
			8.9	*5%*
Price Satisfaction	6.2	5.1	6.1	NS
			8	*5%*
Price Attractiveness	5.8	5.2	6	NS
			8.4	*5%*
Search Intention	8.3	7.6	7.2	NS
			4.8	*5%*
Source Credibility	4.6	3.7	3.5	5%
			3.75	*5%*

Note: In the high ERP condition, values are means for the sample without influenced.

Values in italic correspond to the means for influenced subjects.