NOTE TO USERS

University of Alberta

DO YOU HEAR WHAT I HEAR?
The SESER Framework of Sales Communication: Listening Skills and Sales Success

by

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for the degree of Doctor of Philosophy in Marketing

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Dedication

This work is dedicated to my parents, Dorothy and Ross Saber.

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I would also like to thank my parents, Ross and Dorothy, for their unwavering love and support through this process. I have been truly blessed by such loving parents, and wonderful family: Joan, Ron, Jackie, James, Liam and Alexandra Jewitt. Thank you all for your support.

I wish for all of you the same level of success that you have helped me to create.

God Bless.

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CHAPTER 1 INTRODUCTION, CONTRIBUTIONS AND OUTLINE

1.1 SUMMARY

This research empirically tests the relationships between salesperson communication skills (estimating, sensing, evaluating and reacting: the SESER framework), customer messages (verbal and paralanguage components of varying strength and valence), and a number of measures hypothesized to relate to communication skills: sales success (SF), SOCO and ADAPTS scores. Data is collected from real estate agents using two computerized experiments. Results and implications of the findings are discussed.

1.2 FOUNDATION OF RESEARCH AND OVERVIEW

This research presents a sales communication framework, the SESER Model of Sales Communication, (Salesperson Estimates, Senses, Evaluates and Reacts), and tests a number of aspects of the model. In the general model, information comes from a communication source that encodes the message and transmits it to the receiver. Thereafter, the receiver perceives (*senses*) the message, decodes it (*evaluates*), and may *react* to that message. Noise may impact sensing the message. This model also includes message ambiguities arising from message strength and valence, multiple message components (verbal and paralanguage) and the motivation, skill, confidence, certainty and prior expectations of receivers and transmitters. The general model is then applied to the sales context, as follows.

In the sales context, the salesperson meets a potential customer, and prior to any communication, makes a judgment about how likely it is that the customer will purchase a product: *estimating* a prior customer purchase probability, (CPP prior). Once communication ensues, that customer encodes and transmits messages about his or her likeliness of purchasing a product to a salesperson. The message includes verbal and paralanguage content of varying strengths and valences. Valences are positive to negative and strengths range from strong to neutral.

Once the message is transmitted, the salesperson may *sense* the message. If the message is sensed, the salesperson will *evaluate* its content, and, as a result, may update his or her customer purchase probability (CPP posterior). Alternatively, if the salesperson ascertains that the customer message contains no information which impacts the customer purchase probability, the customer purchase probability may not be updated. In addition, after the mental processing of the message and possible updating of the customer purchase probability, the salesperson will *react* to the customer by continuing to listen, responding to the customer's message, trying to close the sale, or ending the transaction. This pattern iterates until the customer leaves the transaction or purchases the product.

Previous literature has suggested that sales success is likely related to the salesperson's ability to listen to a customer, (e.g. ADAPTS: Saxe and Weitz, 1982; SOCO: Weitz, Sujan and Sujan 1986; Spiro and Weitz 1990; Lambert, Marmorstein and Sharma, 1900; Ramsey and Sohi, 1997; Castleberry, Shepherd and Ridnour, 1999). The literature further suggests that effective listening is comprised of three components: sensing, evaluating and responding, (Ramsey and Sohi, 1997). This research adds another

component, *estimating*, and empirically tests the relationship between these four components, customer cues, and three salesperson indices: a standardized sales success factor score and SOCO and ADAPTS scores.

Estimating is tested by having the participants provide a customer purchase probability estimate, prior to experimental manipulations. *Sensing* is tested by examining participant's ability to discriminate between relevant and irrelevant customer statements (as derived from signal detection theory). *Evaluating* is tested by examining the updated CPP estimates, once participants have been exposed to customer cues. *Reacting* is tested by providing four reaction choices (respond, close, end or listen) to the participants, and asking them to select one of them after each cue. These data are then related to the experimental manipulations and measures of sales success (SF), customer orientation, (SOCO) and adaptability (ADAPTS).

1.3 Contributions of the Dissertation

This research makes a number of contributions to the marketing and sales literatures. First, the research proposes a framework of communication, (Salesperson Estimates, Senses, Evaluates and Reacts: SESER) and describes listening from the salesperson's perspective as a four step process: *estimating* initial customer purchase probabilities, *sensing* the message, *evaluating* the cues and *reacting* to the cues. Second, this framework includes a number of factors that have not been included in current sales communications models: message ambiguities arising from message strength and valence, multiple components of messages, (verbal and paralanguage), message inconsistencies, and the motivation, skill, confidence, certainty and prior expectations of

receivers and transmitters, Third, this research tests the relationships between sales success (SF) , customer orientation (SOCO) and adaptability (ADAPTS), customer cues, and listening skill. Fourth, this research develops a new computer mediated tool to test communication behaviors, the Perceptual Chronograph. Finally, there are managerial implications that arise from these findings.

1.4 Outline of the Dissertation

Chapter Two reviews literature relevant to the dissertation. Topics included are the general model of communication, the SESER Framework of Sales Communication, and a summary of propositions that are derived from the literature. Chapter Three presents the specific hypotheses that will be tested in this research. Chapter Four describes the preliminary protocols and experimental procedures. Chapter Five presents the results of the data analyses. Chapter Six provides discussions, implications limitations, and future research directions.

CHAPTER 2 LITERATURE REVIEW

2.1 INTRODUCTION AND MOTIVATION FOR RESEARCH

For over a century, the issue of salesperson effectiveness has been studied by both practitioners and academics, (e.g. Oshrin, 1918; see also Churchill et al., 1985). From an organizational perspective, this interest may be partially explained by two factors. First, sales skills such as the ability to listen to the customer and effectively ascertaining customer needs tend to have a positive impact on organizational performance, (e.g. Muczyk and Gable, 1987; Churchill et al., 1985; Morris, Davis and Allen, 1991; Ingram and LaForge, 1992). Second, under some conditions, these skills may positively impact customer loyalty, which may also increase store level outcomes, such as word of mouth, share of purchases and competitive resistance, (e.g. Grewal and Sharma, 1991; Goff, Bellenger and Stojack, 1997; Reynolds and Arnold, 2000).

Aware of these potential impacts, many organizations invest in salesperson training, (e.g. Churchill et al., 1985). For example, in 1995, in the United States alone, 55.3 billion dollars was spent on sales training, with 60% of reporting companies expecting increases in these expenditures for three years forward from the time of the survey, (Bassi and Van Buren, 1998). Salesperson training may be even more important in today's marketplace because of growing market competitiveness, (e.g. Plank and Reid, 1994), relative homogeneity of many products and services, (e.g. Reynolds and Arnold, 2000), rising customer expectations, globalization, and increased competitiveness due to new technologies, (e.g. Anderson, 1996). Thus, the identification of salesperson performance determinants and ways to increase this performance continue to be

potentially profitable areas of interest for organizations.

Academics have also extensively considered the effectiveness of salespeople in an effort to determine causality and / or explain sales success, (see Churchill et al., 1985 for a meta-analysis; Weitz, 1978; Roth and Alexander, 1995; Hopkins, 1998; Tsalikis et al., 1991). Among other things, research topics have included identifying and testing factors leading to sales success, (e.g. ADAPTS: see Weitz, Sujan and Sujan, 1986; Spiro and Weitz, 1990, SOCO: Saxe and Weitz, 1982), formulating models of the sales process, (e.g. ISTEA: Weitz, 1978, Personal Selling Process: Dubinsky, 1980; Hite and Bellizzi, 1985), and identifying specific measures of performance, (see Rich, et al., 1999 for a meta-analysis).

In a preponderance of research, sales communication performance was seen as a function of the salesperson as the *presenter* of information to customers, (e.g. Grewal and Sharma, 1991; Goff, Bellenger and Stojack, 1997; Manning, Reece and MacKenzie, 2001), as well as *how* this information should be presented, rather than a consideration of sales effectiveness from the perspective of the salesperson 'listening' to a customer's message.

Conceptualizations regarding the importance of the responsiveness of salespeople to customer information inputs have also been developed. This research has manifested itself into two general streams: research concerning the ability of salespeople to 'listen' to their customers, (hereinafter, the "listening research"), and the SOCO and ADAPTS scales, (Saxe and Weitz, 1982; Spiro and Weitz, 1990), which relate the responsiveness of salespeople to customer messages to sales success. Both of these areas of research will be described further.

Although these studies have made significant inroads into understanding the relationship between sales success and responsiveness to customer messages, some issues remain to be addressed. First, although there have been a number of studies that relate effective listening to sales success, (e.g. Castleberry and Shepherd, 1993; Ramsey and Sohi, 1997), none of these studies empirically test listening skills: results are, at best, gathered through self report. This research will empirically test these skills and relate the findings to three indices: a sales success factor score (SF), a SOCO score, and an ADAPTS score. Salespeople that have higher scores on these indices will be referred to as 'high score' participants, and conversely.

Second, this research provides a generalized framework of communication, which includes consideration of issues that may lead to communication sub-optimization. This framework is then applied to the sales communication context, in order to test predictions that successful salespeople are "better listeners". Finally, this research examines the managerial implications that arise from these findings. This chapter will be divided into three main sections:

I. General Model of Communication

II. Application of Model to Sales Transactions: The SESER Model of Communication.

III. Propositions from Literature Review

In Section I, a general framework of communication is developed using the propositions that message transmission and reception are often sub-optimal, due to imprecision in the message and specific characteristics of the communication

participants. In Section II, the nature of the sales transaction is reviewed and specific reasons for sub-optimizations in that context are explored. The SESER framework is presented. Section III summarizes the propositions that arise from the literature review. These sections, together, form the foundations for the hypotheses and experimental procedures used in this research.

I. General Model of Communication

2.2 Basic Model

Communication starts with the information source, (or transmitter) attempting to communicate information to a receiver, (Shannon and Weaver, 1949). Once the content of the message is formed, the transmitter encodes the message, uses a channel or communication medium, and transmits the message to the receiver. The receiver senses the message, evaluates the contents, and may react to that message if the communication system is iterative, (Castleberry and Shepherd, 1993, Steil et al, 1983).

In an optimal communication system, the transmitter communicates the message content with absolute clarity, there is no interference in the transmission of that message, and the receiver senses, evaluates and reacts to the message in a manner completely reflective of the intentions of the transmitter. An example of an optimized system would be computer communication. Here, the 'vocabulary' of the message is binary code, which, assuming accuracy is unequivocal. Further, the same 'communication system' (the programs) are found in both the receiver and transmitter. Thus, because the message is exact, and the programs which transmit and receive the data are identical, this

communication system should be optimized.

However, even in this highly accurate electronic communication system, sub-optimal communication can occur. Noise in the transmission channel, such as poor electronic transmission, high network use causing signal deterioration, or a number of other factors can interfere with the transmission of the signal. In this context of interference, the ability of the transmitter to sense, evaluate and react to messages may be impaired. In addition, there are a variety of other factors that can create sub-optimized communications in this context[1].

Specifically, communication may be sub-optimized because the message sent is simply difficult to evaluate. In particular, the transmitter may use inconclusive language which could cause the message meaning to be vague. Second, in verbal communications, the signal will be comprised of verbal, paralanguage, and possibly visual cues. These cues may be inconsistent within the context of a complete communication event[2]. For example, transmitters may say that they are not interested in purchasing a product, but handle the product extensively, and appear happy or eager while handling the product, which could indicate interest in purchase. These inconsistencies may lead to reduced signal strength and resulting sub-optimized communications. Further, both of these situations could be impacted, (or even originate), from the transmitter's motivation, certainty, skill, or prior information about the communication context. These issues will be discussed below.

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[1] Social constructivism analyzes discourse in a way which emphasizes the inseparability of transmitters and receivers, e.g. Berger and Luckmann, 1967; Blumer, 1979; Eisenberg, 1984. In this literature, ambiguity of messages is understood as a relational variable, understood only in the "dialogic interplay of self, others, their relationship and context", (Markham, 1996). This interplay will be further addressed in this research.

[2] A conversation would be one example of a communication event.

Second, sub-optimized communication may also arise due to message reception issues. Specifically, even if the signal or message was completely explicit, the transmitter's motivation, confidence, skill and prior information could reduce the accurate sensing, evaluation and reaction to the transmitter's message. These issues will also be specifically addressed in subsequent sections of this chapter. A review of the issues pertaining to message encoding is as follows.

2.3 SUB-OPTIMIZED COMMUNICATION: SIGNAL STRENGTH OF MESSAGES

When communicating with a receiver, the transmitter chooses certain words to communicate his or her message. These words could be very conclusive and precise, in terms of communicating a specific meaning, (a strong signal) or they could be somewhat more vague, (a weaker signal)[3]. An example is illustrative. When talking about a new house that a transmitter was thinking of purchasing, he or she could state: "I love that house" (strong signal), "I like that house" (moderate signal), "I think I like certain aspects of that house, sort of..." (weak signal), and so on. All of the statements indicate some level of positive opinion about the house, but there is a clearly a difference in the conviction of the opinion. In essence, the message strength varies on a continuum, ranging from strong to neutral. Depending on where the message is on this continuum, message evaluation may be more or less difficult for the receiver. Under conditions of increasing vagueness or uncertainty (increasingly weak messages), the evaluation skills of the receiver will be progressively more important in the accurate understanding of the message.

[3] In this research, strong signal strength is defined as signals that are semantically unambiguous whereas weaker signals are defined as signals that are more ambiguous.

In addition, transmitters may send messages that are not relevant to the main topic of the communication at all. For example, in the 'house conversation' above, the transmitter also could talk about the weather, a holiday, a baseball game, or a variety of other topics that are irrelevant to the transmitter's opinion of the house. These cues are extraneous to the main topic of communication, but because they are contained within the same conversation, they may distract the receiver from sensing, evaluating and reacting to the relevant message. Again, under these conditions, the skills of the receiver will be increasingly important in the optimization of communications.

2.4 Sub-optimized Communication: Multiple Components of Messages

Human communication is even more complex because message content is transmitted through multiple message channels, (e.g. Birdwhistle, 1970; Mehrabian and Ferris, 1967; Mehrabian, 1972b, Edinger and Patterson, 1983). With the exception of written words, all human communications are composed of multiple components: verbal, paralanguage and visual[4]. Marketing research in this area has been relatively limited, (e.g. Hulbert and Capon, 1972; Bonoma and Felder, 1977; Haley, Richardson and Baldwin, 1984; Lehman and Lehman, 1989; Catchings-Castello, 2000), although the importance of the study has been acknowledged, and addressed in other fields[5].

The academic literature suggests that over half of informational content sent in interpersonal communications is through paralanguage or nonverbal cues, (e.g. Birdwhistle, 1970; Mehrabian and Ferris, 1967; Mehrabian, 1972b, Edinger and

[4] Visual channels also convey message content, but will not be addressed here.
[5] Including psychology, (e.g. Duncan, 1967; DePaulo and DePaulo, 1989), organizational behavior, (e.g. Graham, Unruh and Jennings, 1991; Forbes and Jackson, 1980; Golen, 1990; Rasmussen, 1984; Parsons and Liden, 1984; De Meuse, 1987) and jury decision making, (e.g. Halverson, et al., 1997).

Patterson, 1983). Mehrabian, (1972) suggests that only seven percent of message content is carried by verbal cues, whereas thirty eight percent comes from paralanguage cues (e.g. Poyatos, 1993) and fifty five percent from nonverbal cues such as facial expressions. However, since in most cases[6] paralanguage cues cannot transmit information by themselves, but must be associated with spoken words to have meaning, paralanguage cues will likely not contribute to message understanding when they are received in isolation from words, (e.g. DePaulo and DePaulo, 1989).

Components of messages may include: the vocabulary message content, (hereinafter, verbal cues), the manner in which the words are spoken, including word stresses, pitch, hesitations, speech disfluencies, or other vocal patterns including coughing, laughing and other verbalizations, (hereinafter, paralanguage cues), and body positioning and movements, such as kinesics or proxemics, (hereinafter, nonverbal cues), (e.g. Key, 1975; Hartley, 1999). In addition, factors such as the appearance of communicators, sex, accents, style of speech, context, and other variables may also significantly impact the message transmission and reception, (e.g. Kendon, 1981; Knapp and Miller, 1994; Peterson et al., 1995; Tsalikis et al., 1991; Littlejohn, 1983; Hartley, 1999; Manning, Reece and MacKenzie, 2001).

Going back to the 'house purchase' example, the transmitter is again communicating her interest in the house. If the phrase "I like that house" is used, the meaning can be significantly changed by word stresses, hesitations, tone of voice, and so on, as follows:

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[6] In rare cases, a cough, or a non-word verbalization may be an unambiguous message, with prior understanding or agreement of the communicating parties. This research will not consider this situation.

Question: So, did you like the house?
Possible Answers: (stressed words in bold)

1. (happily) I **like** that **house**!
Message: buyer definitely likes the house **(strong positive signal)**

2. (sarcastically) **I** like **that** house?
Message: buyer does not like the house **(moderate negative signal)**

3. (uncertain) (pause) I...ummm...like...that house **(weak positive signal)**
Message: buyer may like the house, but there she may have some hesitations about purchasing it.

Clearly, the meaning of the phrase is moderated by the paralanguage cues used in conjunction with the verbal cues, even to the extent of changing the actual *valence* (positive or negative) of the message, (see DePaulo, Lassiter and Stone, 1985; Kohnken, 1989, Zuckerman et al., 1981; Zuckerman and Driver, 1985 for meta-analyses). Thus, imprecision in transmitted messages can occur because verbal and paralanguage cues within the same conversation may conflict[7]. Verbal-nonverbal congruency in marketing has been considered in the context of music and message copy, where it was found that congruent messages have higher levels of recall and recognition (Kellaris, Cox and Cox, 1993). The effects of music may be similar to those of paralanguage, but this issue has not been tested, nor have verbal and non-verbal congruencies been examined specifically in the context of sales transactions.

Second, because communication is typically a whole conversation, rather than simply one statement, even 'same channel' cues sent by the transmitter may conflict[8]. Specifically, verbal cues at one part of a conversation may vary in strength or even valence from cues found at another part of the same conversation, (e.g. Vrij, Semin and

[7] Paralanguage may be associated with affect as information, (e.g. Olsen and Pracejus, 2004), and will be addressed in future research.
[8] E.g. verbal cues contradicting other verbal cues in the same conversation.

Bull, 1996). For example, in the first part of a sales transaction, the customer may state: "I am interested in buying a 32 inch Sony television set", which would indicate a readiness and willingness to purchase (a positively valenced cue). Perhaps, later in the conversation, the customer might state, "Well, I think that the Sony set is over-priced...", indicating a lack of readiness and willingness to purchase, (a negatively valenced cue). In this example, the customer may have become less committed to purchase during the course of the conversation. The message has changed over time. The apparent change in opinion may also be a negotiation strategy, as will be discussed further.

In these situations, the receiver would have to be able to discern, in real time, what the intended message of the transmitter was: should the transmitter rely on the first statements, the latter statements, or perhaps somehow mathematically combine the content of both positive and negative statements to come out with some sort of an 'average' assessment[9]? Under these circumstances, deciding which of the conflicting statements represent the true intentions of the transmitter most accurately may be difficult. As a result, sub-optimal communications is possible.

Similarly, paralanguage cues may also be inconsistent within a transaction: transmitters could start speaking faster, indicating excitement and increased positive affect or enthusiasm for the message content, while at the same time, showing increased speech disfluencies, (umms and ahs, for example), which could indicate decreased positive affect or enthusiasm, (e.g. DePaulo and DePaulo, 1989). These inconsistencies may also make the actual meaning of the transmitter's message less apparent.

Thus, because of the imprecision that may arise in the message, due to the

[9] The receiver could also use some type of choice heuristic to combine the messages, (Robertson and Kassarjian, 1998). The choice heuristics used by receivers in sales communications will be addressed in future research.

operation of multiple message channels and inconsistencies within a message, the effective receiver must be able to determine which of the components are diagnostic of the actual message meaning of the transmitter. The receiver must therefore either share a similar communication and evaluation framework as the transmitter or have the skill to be able to adapt his or her framework to parallel that of the transmitter.

Not only can message strength and multiple message issues reduce the likelihood of optimized message transmission and reception, but there also are transmitter characteristics that further decrease the likelihood of optimized communications, as follows.

2.5 Motivation, Certainty, Skill and Prior Information of the Transmitter

The motivation of the transmitter may impact the optimization of communication. First, the transmitter may send a vague or imprecise message if he or she is attempting obfuscation or deception, (e.g. Vrij, Semin and Bull, 1996; Anolli and Ciceri, 1997; Vrij et al, 2000; DePaulo and DePaulo, 1989). Under these conditions, message strength will likely be reduced, and, as a result, message evaluation will also be impaired. Second, in the case of face-to-face or other verbal communication, typically the transmitter formulates his or her message in real time. If the transmitter has not pre-formulated the message, the message may be inconsistent or non-linear, resulting in a reduced signal strength which again may decrease the accurate evaluation of the message. Third, the transmitter may simply be unmotivated to communicate clearly for a variety of reasons. These reasons will be elaborated on specifically with respect to the sales context.

Fourth, in order to optimize communications, as implied earlier, the transmitter and the receiver would have to have very similar 'communication frameworks', which could include factors such as communication style, word usage and word interpretation. The English language tends to be rather imprecise: for example, a transmitter, in describing purchase patterns, may say: "I often purchase that product". For the transmitter, 'often' could mean once a month, whereas the receiver may interpret 'often' to be once a week. There are many other examples of similarly imprecise words or vague quantifiers, (Pracejus, Olsen and Brown, 2004, Budescu and Wallsten, 1985)[10]. If the communication styles, word usage and word interpretations of the transmitter and receiver diverge, the transmission and reception of the message will likely be sub-optimal.

Fifth, from the transmitter's perspective, the communication context may impact the type of message sent, (Park et al, 1981). Specifically, contextual variables may either allow for the transmission of the true intentions of the message or require the transmitter to 'translate' his or her true intentions into a style that fits the transmission context. For example, while describing problems at work to a friend, the transmitter may use a high signal strength, and convey 'disgust' with another co-worker. However, when talking to his or her employer, this communication may be 'couched' in terms more appropriate to that context: "I am disappointed, (surprised, amazed) ...with that co-worker": a lower signal strength, (e.g. Barker, 1993). The role of contextual variables on communication[11] will be addressed in the application and analysis of the sales context.

Finally, depending on his or her prior expectations about the receiver, the

[10] For example, many, few, always, any, best, every, less, more, much, possible, and so on, (, 2003).
[11] For example, analysis of the roles of corporate culture, and its effects on communications can be found in research such as Mumby, 1988.

transmitter may send different messages to different receivers. For example, the transmitter may categorize receivers based on perceived personality (Horton, 1979), communication and bargaining style (Soldow and Thomas, 1984; Angelmar and Stren, 1978; Williams and Sprio, 1985, Williams Spiro and Fine, 1990), and motivation for communication (Wakefield and Blodgett, 1999; Weinberg and Gottwald, 1982). Even perceived demographic characteristics, such as age, sex, income, and others, may impact the type of message sent, (e.g. Capon and Davis, 1984). A message sent to a child, for example, may not be the same as one sent to an adult[12]. Thus, for the transmitter, schemas which categorize receivers may impact message composition and the resulting level of optimization of the communication system, (e.g. Loewenstein, 1988b; Stayman, Alden and Smith, 1992; Meyers-Levy and Tybout, 1989 for schema use in marketing).

2.6 Motivation, Confidence, Skill, and Prior Information of Receiver

The reception of the message similarly depends on the motivation, confidence and skill of the receiver. First, with respect to motivation, the receiver may derive some positive outcome from appearing to either not perceive or not 'correctly interpret' a message, (Campbell, 1996; Rommetveit, 1983; Markham, 1996). For example, if a mother tells a child that she cannot eat candy, and the child chooses to selectively interpret that message as applying only to a certain type of candy, then the child may feel at least partially justified in eating other candies.

Second, level of communication confidence may also impact message evaluation.

[12] The communications may actually be *more* optimal if the transmitter tries to formulate his or her message with regard to receiver characteristics, assuming that the transmitter can accurately predict those characteristics. This issue may be addressed in future research.

If the receiver has little prior experience with a specific communication context, he or she may not be confident in his or her ability to evaluate the message. As such, and given conditions of high motivation, (Petty, Cacioppo and Schumann, 1983), it is possible that this novice receiver will attend to all the message cues in an elaborative manner, presumably using a systematic processing strategy (Bettmann and Sujan, 1987; Petty and Cacioppo, 1981, 1993; Meyers-Levy and Maheswaran, 1991; Meyers-Levy and Malaviya, 1999).

An elaborative processing strategy may not be effective in real-time communications: the receiver not only has to sense and evaluate the transmitter's message, but also in many cases, react to the message. Given these time limitations, a heuristic processing strategy may be more efficient. Experts at communication, who would be more certain about their abilities to sense and evaluate communications likely use a heuristic or peripheral approach, (Glaser, 1990; Klein, 1998). Alternatively, since the cost of acquiring information is likely lower for these receivers, due to their more highly developed conceptual structures, (e.g. Jacoby et al, 1986; Alba and Hutchinson, 1987), information processing of messages could simply be more efficient. Thus, expertise in message reception may impact the optimization levels of the communication system. This issue is further addressed in sections 2.15 and 2.19.

Third, as described thus far, the listening skill of the receiver has three parts: the ability to *sense, evaluate* and respond *(react)* to the message, (Ramsey and Sohi, 1997). Level of skill of each of these components will also impact the optimization of the communication, as will be further discussed.

Fourth, from the receiver's perspective, sensing, evaluating and reacting to a

message may also be affected by the situational context and prior expectations about the transmitter. Assuming the receiver has some prior experience or knowledge about the communication context, the receiver may have developed context schemas through which the message is filtered. For example, a statement by an employer in a social context (e.g. 'you are just lazy') may be interpreted quite differently compared to the same statement in a work context. Thus, in some cases, context schemas will moderate message evaluation.

The receiver may also have prior categorization schemas about the transmitters as well. For example, in an upscale clothing store, a transmitter, (the customer), who dresses poorly or is unkempt would likely get less sales attention and service, since the salesperson might assume this customer would not be able to afford to purchase 'upscale' products. In this example, the initial customer purchase probability estimate is based on visual cues alone[13]. These social perception schemas which impact the optimization of communication are relatively common and have been documented in the sales literature as categorization of customers into typologies or 'interpretation schemas', (e.g. stereotyping: Reynold and Beatty, 1999; Grossbart et al, 1990; Westbrook and Black, 1985; Lovas, 1993, Saxe and Weitz, 1982, Weitz, Sujan and Sujan, 1986). In other words, the receiver may 'segment' or categorize the transmitter as a 'type' of communicator and use pre-existing schemas as a filter in interpreting the message of the transmitter. The process of predicting communication content, based on prior knowledge or schemas, will be referred to as *estimation.*

[13] Assuming no organizational direction to the contrary.

2.7 General Model of Communication

Based on a consideration of the issues describe above, the proposed general model of communication forwarded by this research is as follows. Transmitter processes are indicated by shading and moderators are indicated by dashed lines:

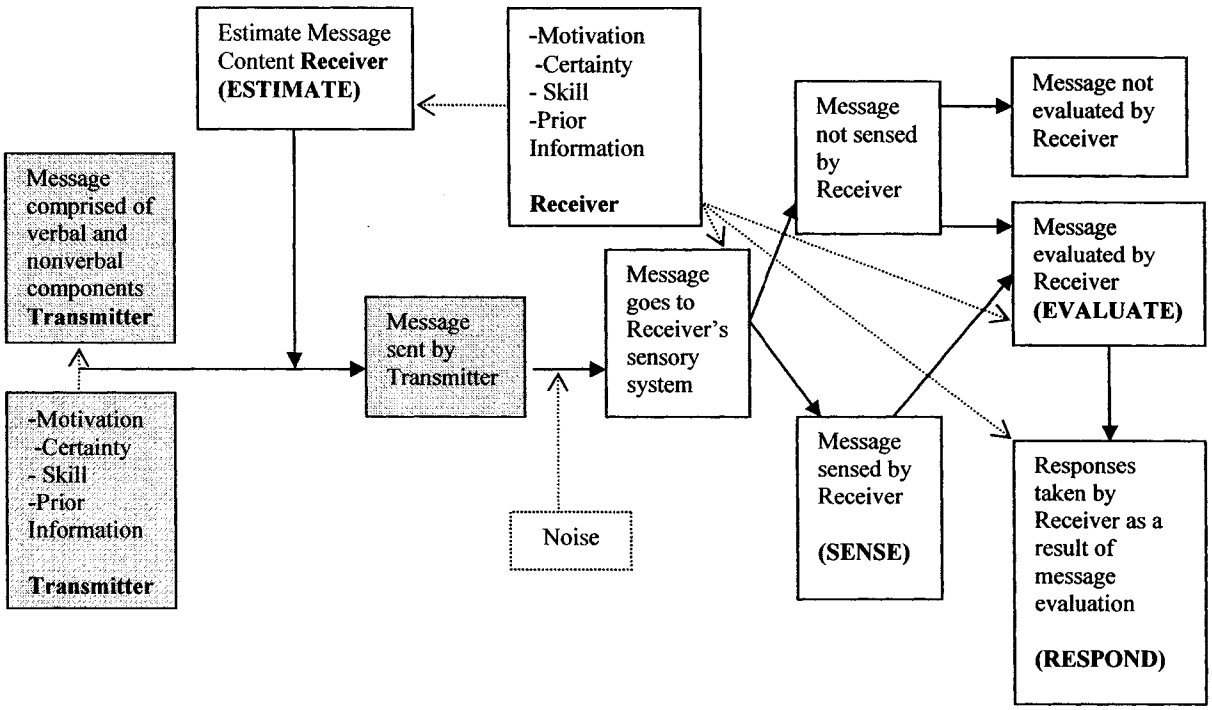

Figure 2-1 General Model of Communication

This model will now be applied to the sales context, as follows.

II. Application of Proposed Model of Communication to the Sales Context

2.8 Sales Transactions and Communication: General Description

As described earlier, although a preponderance of research identifies the salesperson as the transmitter of messages, (e.g. Grewal and Sharma, 1991; Goff,

Bellenger and Stojack, 1997; Manning, Reece and MacKenzie, 2001), this research takes the perspective of the salesperson as the receiver of customer information. In essence, the salesperson's role is to effectively communicate with the customer, and decide whether or not the customer will purchase a product. If purchase is likely, he or she should take steps to ensure that purchase. While the communication is taking place, the salesperson should be attempting to increase the probability of purchase, with his or her responses to customer statements: salespeople should react to objections or barriers to purchase and encourage and / or confirm positive statements transmitted by the customer. Further, if purchase is not likely, the salesperson could terminate the communication[14].

Specifically, the encounter begins when a customer approaches a salesperson. Before any communication, the salesperson observes the customer, and may make use of his or her sales context and / or customer schemas, (Reynold and Beatty, 1999; Grossbart et al, 1990; Westbrook and Black, 1985; Lovas, 1993) to determine a purchase probability for that customer: **estimation**, (CPPP)[15]. Similarly, the customer is cognizant of the sales context, observes the salesperson, and may classify him or her based on pre-existing salesperson schemas, (Babin, Boles and Darden, 1995). Next, communication between the salesperson and the customer begins. Throughout the conversation, the salesperson must listen to what the customer is saying: some of the phrases may indicate that the customer *is* interested in purchase; some of the phrases may indicate that the customer *is not* interested in purchase. Based on what he or she hears (**senses**) throughout the complete conversation, the salesperson will make a diagnosis of how likely it is the customer will purchase. The change in customer purchase probability

[14] The relationship between CPP estimates and reactions will be analyzed in future research.
[15] CPPP is the estimated customer purchase probability prior to the communication.

after listening to the customer messages will be referred to as **evaluation**: (ΔCPP).

During the communication, the salesperson will typically **react** to the phrases of the customer in some manner. There are four choices. First, if the customer appears to want to continue talking, and / or the salesperson does not know what to say, the salesperson could simply continue to listen to the customer. Second, if, in the opinion of the salesperson, the phrase of the customer appears to warrant a response, (as in the case of customer objections, or positive statements that would perhaps be further solidified if confirmed), he or she may respond to the customer. Third, if the customer seems very interested in purchase, the salesperson may try to close the sale. Fourth, if the customer seems very disinterested in purchase, the salesperson may end the transaction. The transmission of messages and the response of the salesperson will continue iteratively, until the customer either purchases the product, or leaves the communication transaction. The **SESER** framework of Sales Communication, (Salesperson estimates, senses, evaluates and reacts), which incorporates the propositions developed in the previous sections is as follows:

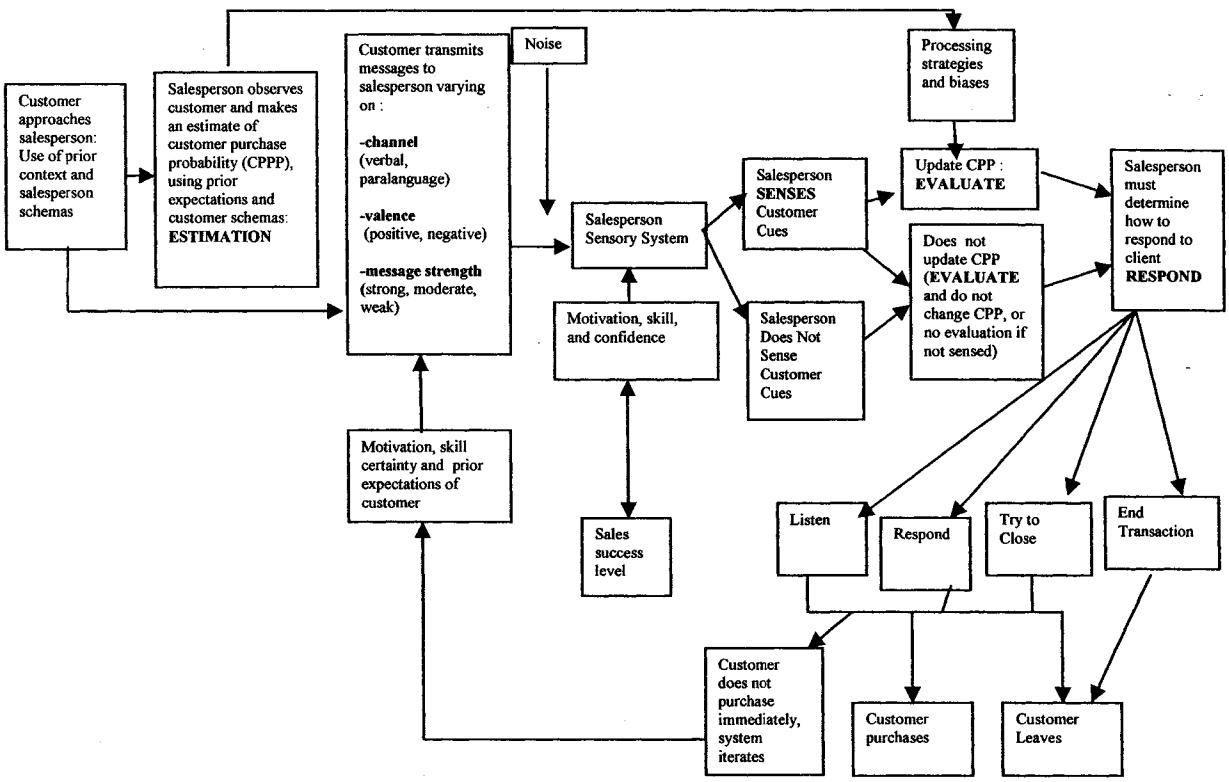

Figure 2-2 SESER FRAMEWORK OF SALES COMMUNICATION

The sales transaction communication may be impacted by the operation of the factors set out in the SESER framework proposed above. Specifically, there are many reasons that sales communications may be suboptimal, as follows.

2.9 NOISE IN THE SALES ENVIRONMENT

First, sub-optimal communications in the sales context will likely occur because in most face- to- face transactions, there is noise in the communication. This noise may detract from the optimal transmission and reception of the message. Specifically, sales often occur in a distracting environment: there may be other people, a visually complex environment, phones ringing, music playing, and so on. As indicated previously, noise

may reduce the strength of the message transmitted, and thus impair the receiver's ability to perceive and react to the signal. The effect of noise in the sales transaction will not be specifically tested here, although research indicates that noise, at certain levels, results in reduced signal sensing, (Warner and Heimstra, 1972; Koelega and Brinkman, 1986; Eroglu and Machleit, 1990).

2.10 Transmitter Characteristics Affecting Communication in the Sales Context

The characteristics of the transmitter (hereinafter, "the customer") also may create sub-optimal communications in the sales context. First, under certain circumstances, the customer may be motivated to communicate imprecisely. In particular, the sales transaction may be seen as a negotiation, (DePaulo and DePaulo, 1989). Specifically, DePaulo, (1988) and Allerheiligen et al., (1985) have suggested that in bargaining situations, such as in buyer- seller interactions[16], attempts to hide true intentions by participants are common and seen as 'part of the game' of sales communications. Customers may be reluctant to seem 'too eager' to purchase: message obfuscation or deception may be used to acquire better terms of purchase.

Further, in a sales situation, customers may have the prior expectation that the salesperson will be 'pushy' and 'aggressive' in the communication, a "typical used car salesman" stereotype[17], (Babin, Boles and Darden, 1995). As such, the customer may be reluctant to express too much interest in a product, for fear of being overwhelmed by "the

[16]Particularly in the case of negotiable and / or readily available products
[17] This was referred to as a 'receiver schema' in Section 2.7.

sales pitch". Negotiation strategies and stereotypes may lead to the transmission of imprecise messages in the sales transaction.

In addition, the customer may not be certain that he or she wishes to purchase a product, and messages may be indefinite as a result. The customer can have a variety of goals and motivations in approaching the salesman: a customer may be just browsing or collecting information about a product, rather than actually intending to purchase. Similarly, the customer may be unsure of which specific product he or she wants, and, again, is simply collecting information. If this is the case, the customer may transmit some moderate or weak positive interest about the product, but no particularly strong positive purchasing signals. It is important for the salesman to recognize these differing certainty states, and their related motivations, because if salesmen assume that all customers are 'immediate purchasing' prospects, they may try to close a sale when the customer is not ready to purchase. In this case, the customer is likely to feel pressured or uncomfortable, and may be less likely to return to that selling organization in the future, (e.g. Ramsey and Sohi, 1997). On the other hand, if the customer is simply unsure of which specific product choice he or she will make, but is certain that he or she will purchase an item from the product category, the effective salesperson must realize this, and make appropriate product suggestions to increase customer purchase probability of one of the products.

Finally, there is also a possibility that cultural differences, educational differences, or a variety of other personal characteristics may reduce the skill by which the customer transmits his or her message. For example, it may be difficult for a non-English speaker to communicate his or her interest or lack of interest in a product. This

situation would require high levels of listening skill of the receiver for optimized communication.

Thus, motivation, prior expectations, certainty, and skill of the customer can impact the communications in the sales context. The multiple components of messages may also lead to sub-optimal communications in the sales context, as follows.

2.11 Multiple Components of Customer Messages Affecting Sales Communications

Even if the customer is not just browsing or trying to be deceptive, messages may still be imprecise. For example, the message could be communicated with weaker signal strength: instead of saying "I love this product, and I am going to purchase it right now", the customer might say "I think I like this product, but I still see some problems with the color (financing, delivery options, etc.)". Second, the customer could include paralanguage signals which could moderate the strength of his or her verbal messages: for example, if the customer hesitates or sounds unhappy, bored, or angry, this could reduce the definitiveness of an otherwise strongly positive verbal cue, and conversely.

The literature has outlined what types of customer messages are positive and negative in the sales transaction. Positive valence verbal cues have been identified by practitioner and academic literatures, although there has been no empirical testing of these cues, (e.g. Hopkins, 1998; LeBoeuf, 1988; Roth and Alexander, 1995; Manning, Reece and MacKenzie, 2001). Manning, Reece and MacKenzie, (2001) outline three categories of positive verbal signals: *questions*, *recognition*, and *requirements*. *Questions* include: asking pointed questions, asking the salesman to repeat some point, a technical

question where the client does not need to know the answer unless he /she owns the product, asking to see the product again, questions about delivery dates, financing options on the product, what it would be like to own the product, asking about add-ons, price, and final procedures, as well as other bargaining behaviors. *Recognitions* are any positive statements concerning the product or some product factor such as financing, or delivery dates, and include clients making positive comments, verbal assents, agreeing on a series of minor sales points, *Requirements* are conditions that customers outline that must be met before they buy. Requirements include shipment and delivery dates, financing, and training, for example.

Customers can also communicate that they are interested in currently purchasing through positive valence paralanguage cues. Although not specifically addressed in the sales literature, positively valenced paralanguage cues that are likely to indicate positive current purchasing intentions include warmer and friendlier tone of voice, (Roth and Alexander, 1995), possibly including laughter, (Poyatos, 1993), an increase in speech rates, (Hopkins,1998; Berman,1989), decreased response latencies and speech disfluencies, (Vrij et al., 2000), and higher pitch, (DePaulo, Stone and Lassiter, 1985). Paralanguage is important in situations where participants of the communication may not be completely open about their communication motivations and goals, or in situations of deception or negotiation, which may be the case in sales settings.

2.12 Objections

Customers may use negatively valenced cues to signal that they are not interested in currently purchasing the product. The difficulty with the concept of a 'negatively

valenced cue', however, is that there is no real consensus as to what this term means: there is no empirical research which specifies these cues, and there is a diversity of opinions as to whether these negatively valenced cues lead to desirable (sale) or undesirable (no sale) outcomes in the transaction.

The practitioner literature identifies negatively valenced cues as 'objections' and although there is no supporting empirical data, there are a number of frameworks that have been proposed to classify these cues, (e.g. Prus, 1989, Kennedy, 1999; Futrell, 1994). For example, Prus (1989) suggests they fall into the categories of skepticism with the product or vendor, price concerns, existing loyalties (e.g., to a brand name or to currently owned products), and desires to continue comparison shopping. Futrell, (1994) suggests that objections can be categorized as a request for more information, a condition of purchase, a hopeless objection, or a true objection, and they may be major, minor, practical, and psychological. Pell (1990) suggests that there are three types of objections: road signs, insufficient information and minefields. Gard (1976) suggests that objections include the stall, the trivial objection, the prejudiced objection, the hopeless objection and the genuine objection.

Some authors, (e.g. Brooksbank, 1993; Lapp, 1985; Bencin, 1987; Elnes, 1990) suggest that these objections, or 'resistances to buying', are not actually negative at all, but instead, indicate customer interest in the product. Quotations like "successful sales presentations, which result in a sale, have 58% more objections than those presentations which do not result in a sale", (Pell, 1990): "the first and most important step in handling objections successfully is to recognize them for what they usually are-signs of real interest", (Archie, 1984), "an objection indicates the prospects' attention is being held",

thereby implying that objections are not really negative indications of purchase probabilities at all.

Other authors, however, take an opposite approach. For example, Hockenhull (1997) suggests:

> Most salesmen worry about handling objections. Indeed, many sales training programs teach 'objection handling" as a selling skill. They go as far as to suggest that objections are a good thing since they show that the client is interest in buying. I really wonder where this line of thinking comes from. It is nonsense. Objections do not denote interest in the seller's products. They demonstrate a resistance to buy because the salesman hasn't sold effectively.

Unfortunately, because these frameworks and conflicting opinions have not been supported by empirical data, the impact of negatively valenced cues on the salesperson's estimates of customer purchase probabilities remains uncertain. For the purposes of this research, negative valence cues will be defined to include denying interest in the product, criticizing the product and any product features, including price, delivery, financing, business or salesman, deferring decision making to another time or another person, or any other unfavorable comments such as any negative comparisons to other products or businesses, (e.g. Manning, Reece and MacKenzie, 2001). As a result of these conflicting opinions and the lack of empirical research, pretesting the cues used in the experimental design was necessary and will be addressed further.

Negative paralanguage cues in a sales transaction similarly have not specifically been addressed in either the academic or practitioner literature. The communications literature does, however, suggest that negative valence paralanguage cues are likely to include increased speech disturbances, higher pitch, slow speech, longer response

latencies, less friendly tone of voice, and lower pitch, (e.g. Roth and Alexander, 1995; Hopkins, 1998; Vrij et al., 2000, DePaulo, Stone and Lassiter 1985; DePaulo, 1992; Vrij, Edward, Roberts and Bull, 2000). These cues are also pretested.

Thus, even without deliberate obfuscation or deception attempts, it is possible, as noted earlier, that because of customer motivation, certainty levels or lack of skill, salespeople will likely be confronted with imprecise verbal and paralanguage messages from customers. The salesperson's characteristics may also impact the nature of the sales communication, as follows.

2.13 Salesperson Characteristics Affecting Sales Communications

The motivation, confidence, prior expectations and skill of a salesperson may also impact the optimization of communications. First, the motivation of the salesperson will be considered. In the preponderance of circumstances, salespeople will be motivated to receive the customer communications effectively. This is because effective reception may lead to a sale, and positive organizational and personal outcomes such as increased firm sales and profitability, increased sales commissions, (if the salesperson is compensated on that basis), public recognition for sales success, job security and so on, (e.g. Muczyk and Gable, 1987; Churchill et al., 1995; Morris, Davis and Allen, 1991; Ingram and LaForge, 1992).

Further, in cases of commercial sales, (where the salesperson has no personal interest in the product), the salesperson is likely definite that he or she wishes to sell the product, in contrast to a situation where an individual may have a personal interest in a product and is reluctant or hesitant to sell. For example, an individual seller has an

antique car that he or she has painstakingly restored. As a result, he or she is very attached to the car, and may not really want to sell it. In this example, issues of hesitance or reluctance to sell may lead to deliberately reduced reception on the seller's part, which in turn, may lead to sub-optimal communications. For the most part, this issue is not likely to arise when the receivers are professional salespeople, selling products on behalf of a company. Because of this, and because this research tests only professional salespeople, positive motivation to comprehend customer messages will be assumed[18].

Second, as previously described, confidence in evaluation may also impact the optimization of communication. If the salesperson is a novice, he or she may not be confident in his or her ability to understand the message. As such, the novice may be reluctant to take 'extreme responses' in the communication, such as trying to close a sale or ending a transaction without very strong messages from the customer. Novice salespeople may not maximize their opportunities for selling as a result.

Further, since novices will likely process the message in an elaborative manner, as described earlier, (Bettman, 1973; Petty and Cacioppo, 1981, 1983; Meyers-Levy and Maheswaran, 1991; Meyers-Levy and Malaviya, 1999), the novice may try to interpret all customer statements, (whether relevant or not), or pay attention to other cues that more experienced salespeople know do not impact customer purchase probability. More experienced salespeople will likely use a more heuristic strategy, as previously discussed. Because of these processing strategy differences, it is possible that sensing, evaluating and reacting will differ for successful and less successful salespeople.

[18] This is not to say that there are never times when the salesperson is not motivated to sell: any number of factors, such as fatigue, emotional distress, boredom, illness, stress and so on, may reduce the motivation of the salesperson, (Manning and Reece, 2002). This situation may be considered in future research.

2.14 Measures of Skill in Sales Communications

As will be further described, some of the literature suggests that skill in listening consists of three parts: skill in sensing, evaluating, and responding, (Ramsey and Sohi, 1997). Other literature describes skill in listening in only two parts, "information acquisition, and response", (Saxe and Weitz, 1982, Weitz, Sujan and Sujan, 1986). In contrast, this dissertation proposes that communication skill has four components: estimating, sensing, evaluating and reacting.

Despite the differences in definition of listening skill, the current literature either explicitly or implicitly proposes that successful salespeople will be better at communicating than less successful salespeople. In order to understand this relationship, a preliminary issue that must be addressed is the definition of sales success, as follows.

2.15 Measures of Sales Success

Sales success is a multi-faceted concept that has been measured and interpreted in many ways. A large number of studies have addressed this concept, in an effort to determine what performance measures would be appropriate in evaluating sales success. A review of two meta-analysis studies is helpful in defining this variable.

Churchill et al. (1985) examined 116 articles that reported associations between performance and the determinants of performance. Factors investigated for sales success included role variables, skill, motivation, personal factors, aptitude, and organizational / environmental factors. When these variables were ordered according to variation not

attributable to sampling error, personal factors, skill and role variables showed the greatest predictive usefulness. None of the predictors accounted for much of the sales performance differences, therefore, the authors conclude that sales success should be measured by multiple factors, rather than a reliance on one factor.

Another meta-analysis considered the relationship between objective and subjective measures of salesperson performance, (Rich et al, 1999). Here, 21 studies were analyzed and it was determined that subjective and objective measures of salesperson performance were correlated at only at .447, indicating only 20% of the variance was shared by the two measures. The implications of this study are that objective and subjective measures of sales success are not interchangeable, and each by themselves, do not give a full picture of sales success. Thus, both objective and subjective measures should be used in research.

These studies and others (Heneman, 1986; Bommer et al, 1995) suggest that the appropriate measure of sales success or performance is an elusive concept. What is clear, however, is that both objective and subjective measures should be used. Further, since it is unknown whether or not managerial ratings and self- report data converge (for example, with respect to ADAPTS: self- reported performance was correlated to ADAPTS scores, but managerial ratings were not, Weitz, Sujan and Sujan, 1986), both of these ratings should be used. In this research, success will be defined by a self report of sales success, a managerial rating of sales success, and income[19]. These measures are combined to create a standardized factor score, SF, which will be used as one of the between subjects covariates in this research.

[19]Where income is derived strictly by sales commissions.

2.16 Communication Skill, Sales Success (SF), SOCO and ADAPTS

The relationship between communication skill and sales success is based on the untested proposition that because levels of sales are higher for successful salespeople, these salespeople must be better listeners. This proposition is found in the preponderance of the practitioner and academic literature in this field, but has not been empirically tested. The SESER framework has proposed that effective communication in the sales context has four parts: estimating, sensing, evaluating, and reacting. Each of these components and their relationships to success will be tested in this research.

Based on this proposed relationship between success and effective communication, other related predictive measures have been developed such as the SOCO and ADAPTS scales, as found below. However, because the original assumption of a relationship between success and communication skill was not empirically tested, the relationship between this skill and these other related measures may also need re-examination.

It may be that success, SOCO and ADAPTS scores and the components of listening are related: higher score salespeople may actually be 'better' at estimating, sensing, evaluating and reacting. Or, it may be that higher score salespeople estimate, sense, evaluate and react to customer messages *differently* than lower score salespeople, but not in a more 'appropriate' way (where 'appropriate' is operationalized later in this dissertation). Alternatively, it may be that there is no difference in communication skills of salespeople at all; perhaps these scores are driven by some other factors[20]. These competing possibilities will be theoretically developed below, and empirically tested in

[20] Other factors will be identified in future research.

this research. A review of the sales literature on communication skill, and its relationship to sales success, SOCO and ADAPTS is as follows.

2.17 Communication Skills, Success (SF), SOCO and ADAPTS Literatures

Communication skills, and their importance in the sales transaction of salesmen has been recognized in the literature, (e.g. Nichols and Stevens, 1957; Albaum, 1964; Duncan, 1969; Weitz, 1978; Moore, Eckrich and Carlson, 1986). According to this literature, not all salespeople have the same level of listening skill. In particular, there have been a number of published articles that have linked listening skills, sales success and other measures, although most of these are conceptual and / or do not empirically test communication skill, *per se*. A review of this research is as follows.

An article that attempted to measure salespeople's perceptions of their customers was written by Lambert, Marmorstein and Sharma, (1990). Here, questionnaires were distributed to customers and to salesmen to determine whether or not salesmen accurately perceived importance weights and performance levels expected by customers. It was found that salesforce estimates of expected performance levels were not accurate, and varied widely among salesmen. Total sales experience and training contributed to perceptual accuracy. Although this study was not definitive in terms of which of the factors of 'understanding the customer communications' or 'knowing product lines and benefits that customers would likely find important' contributed to perceptual accuracy, this study implies that successful salespeople were superior in evaluating their customer needs, as compared to less successful salespeople. This research will empirically test this hypothesized relationship.

Castleberry and Shepherd, (1993) also considered the relationship between sales success and effective listening. In this conceptual article, the authors propose a model of interpersonal listening which includes the 'cognitive process of actively sensing, interpreting, evaluating and responding to the verbal and nonverbal messages of present or potential customers', (Castleberry and Shepherd, 1993), based on the model proposed by Steil, Barker and Watson, (1993). Research pertaining to effective listening was reviewed, and a number of propositions for research were forwarded, including the possibility of links between listening and ADAPTS, but there was no empirical testing of any of these propositions in this work. A later study, (Ramsey and Sohi, 1997), using structural equation modeling supported the notion that listening is composed of three first order factors: sensing, evaluating and responding, (χ^2=187.75, p <0.001, NNFI=.96), with reliabilities ranging from .80 to .97. Although this study investigated the model proposed by Castleberry and Shepherd, (1993), it did not empirically test salesperson sensing, evaluating or responding to customer messages or the relationship of these factors to sales success.

Comer and Drollinger (1999) considered the links between selling success and listening in the sales context. They reviewed the literature in the area, and related effective listening to empathy and the personal selling process. They implied that sales success is positively related to effective listening, and although the authors proposed areas for further research, there was no empirical testing of any of the propositions in this paper.

Finally, Castleberry, Shepherd and Ridnour (1999) developed a paper and pencil self- report measure of interpersonal listening in the sales context. Here, a 14 item scale

was developed from questionnaires, with acceptable reliability, (Cronbach alpha=.8622) and some evidence of face, convergent and nomological validity. This study found a significant correlation (all significant at $p < .001$) between the scale, which they suggested measured ability and effectiveness at listening and salesperson performance, their measures of sales success, (including closing sales, handling objections overall performance, overall dollar sales, quality of presentations and converting prospects). The results of this study suggest that listening and sales success are positively related. This dissertation, in contrast, specifically tests the relationship between sales success and 'listening' by tracking actual estimating, sensing, evaluation and reaction data, rather than relying on self-report measures[21].

Another group of scales that also suggest the relationship between sales success and listening skills are the SOCO and ADAPTS scales. The SOCO (selling- orientation, customer-orientation) scale measures the self-assessed customer orientation of salespeople, (Saxe and Weitz, 1982). The SOCO scale indicates that successful salespeople take a customer oriented approach to selling, and perceive their role as to 'help customers make purchase decisions that will satisfy customer needs...and avoid behaviors which might result in customer dissatisfaction", (Saxe and Weitz, 1982). Empirical results of testing on this scale indicate a positive relationship between self-reported customer-orientation measures and sales success, (e.g. Michaels and Day, 1985; Brown, Widing and Coulter, 1991; 1995; Williams and Attaway, 1996; Thomas, Soutar and Ryan, 2001).

[21] SOCO, ADAPTS and SF were chosen for this research, since they are widely accepted measures in the sales literature.

Further, the widely used ADAPTS scale, (e.g. Weitz, Sujan and Sujan, 1986; Spiro and Weitz, 1990; Weilbaker, 1991; Goolsby, Lagace and Boorom, 1992; Blackshear, 1992; Vink and Verbeke, 1993; Goff, Bellenger and Stojack, 1994; Marks, Vorhies and Badovick, 1996; Spiro and Weitz, 1990), suggests that there is a relationship between sales success and adapting to customers. This scale implies that salespeople are engaged in adaptive selling when they use different sales presentations across various sales encounters and when they make adjustments during these encounters: "the practice of adaptive selling is defined as the altering of sales behaviors during a customer interaction or across customer interactions based on perceived information about the nature of the selling situation", (Weitz, Sujan and Sujan, 1986 at 173). Tests of this scale indicate a significant relationship between scale items and self-assessed performance, but not between ADAPTS and managerial ratings of salesperson performance.

The implications of this research are as follows. SOCO suggests that successful salespeople take a customer oriented approach. A customer oriented approach means that salespeople are identifying customer needs, and providing specific solutions for those needs. By definition, in order to determine needs and provide solutions, the salesperson would have to ascertain customer needs by listening to what the customer states: the 'information acquisition' aspect described in the SOCO research. If the salesperson does not listen effectively, he or she cannot ascertain needs, and, as a result, would not be able to take a customer oriented approach. Thus, higher SOCO scores should be positively related to better listening.

Similarly, the ADAPTS scale suggests that successful salespeople are adaptable to customers: they change their sales presentations, provide different solutions, and so on,

for each customer[22]. Why would salespeople adapt? Salespeople would adapt because they have sensed and evaluated relevant customer messages. How do they know when to adapt? Salespeople know when to adapt because they have 'listened', acquired and evaluated customer information. Thus, a precursor to adaptive behaviors *must* be listening; otherwise needs identification would be very limited[23]. Salespeople with higher ADAPTS scores should therefore also be better 'listeners'.

The SOCO and ADAPTS scales appear to be dividing 'listening' into only two categories of activity: information acquisition and reaction. Other literature (Castleberry and Shepherd, 1993; Ramsey and Sohi, 1997), suggests that the information acquisition component is actually comprised of two parts: sensing and evaluation. This research goes further by suggesting prior estimation of customer purchase probability is also a critical factor in the optimization of sales communication. All four components will be tested for relationships with sales success,(SF), customer orientation (SOCO) and adaptability (ADAPTS).

2.18 Prior Expectations

In addition, the salesperson's prior expectations of selling frequency and customer message meaning may also have an impact on communication optimization in the sales transaction. Specifically, there may be differences in initial estimates of customer purchase probabilities, (CPPP), as well as different evaluations and responses taken by

[22] This proposition was supported by surveys sent out to salespeople, (Sujan and Weitz, 1988).
[23] An adaptive salesperson might more likely estimate CPP based on the actual customer message content, rather than the estimated CPPP. This issue will not be explored here, but may be addressed in future research.

salespeople of varying success levels. Each of these issues will be considered, as follows.

2.19 Prior Expectations and Estimating

Prior to the initiation of communication between the salesperson and the customer, according to the SESER framework, the salesperson 'sizes up the customer', using pre-existing stereotypes or customer schemas[24], and makes a prior estimate of that customer's probability of purchase, (CPPP). This is the first step in sales communication: *estimation.* Information processing and decision making theory, coupled with the propositions found in practitioner literature gives rise to predictions about these prior estimates for successful salespeople.

In particular, successful salespeople, by definition, have higher levels of sales than less successful salespeople. Successful salespeople, therefore, may have higher expectations of selling, and as a result, may also have higher CPPP estimates. This prediction is based on the operation of the availability heuristic, (Tversky and Kahneman, 1974), where "decision makers assess the frequency or a probability of an event by the ease with which instances or occurrences can be brought to mind.", (Plous, 1991). In addition, this result may occur due to a general tendency to remember events that support the desired result[25]. Successful salespeople may selectively remember success, (as compared to failures), and will, by definition, have more successes to think about. Further, the stronger and more numerous these selling successes are, the more successful salespeople may think a sale is likely, (Koriate, Lichtenstein and Fischhoff, 1980).

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[24] See discussion page 17.
[25] Confirmation bias, which will be further discussed.

Practitioner literature also confirms this prediction: successful salespeople are expected to be more optimistic about their estimates of CPPP, (Kennedy, 1999; Pell, 1990). This prediction regarding the relationship between estimation and sales success will be tested in this research. Prior expectations may also have an effect on the sensing portion of communication, as follows.

2.20 Prior Expectations and Sensing

In this research, sensing is the ability to discriminate between a relevant and an irrelevant customer message pertaining to purchase probabilities. In order to test sensing, methods from signal detection theory can be used, as follows.

2.21 Testing of Sensing: Methods from Signal Detection Theory

Signal Detection Theory (SDT) is a model which tests how 'signals' are detected (sensed) by a system or detector in a background of interference, ('noise'), in experimental trials. SDT assumes that performance on detections can be explained in terms of two underlying distributions of mutually exclusive states: the presence or absence of a signal. SDT further assumes that there is an overlap between the distributions of signal and noise, so that any particular observation may have come from either distribution. The detector has to decide which distribution the observation has come from, and based on this, will decide whether to accept or reject the event as a signal. Subjects can exhibit four states when exposed to such trials: **hit**: (H) subjects correctly identify that there is a signal, when there actually has been a signal,: P (Signal |

signal), **false alarm**: (FA) subjects identify that there is a signal, when there was no actual signal: P (Signal | no signal), **correct rejection**: subjects identify that there was no signal, when there was no actual signal: P (No signal | no signal), and **miss**: subjects identify that there was no signal, when there actually was one: P (No signal | signal). There are only two independent probabilities thus the data can be shown on a two dimensional space as points in a plot of P (Signal | signal) versus P (Signal | no signal). If diagnostic accuracy is perfect, the hit rate will be 1, and the false alarm rate will be 0, (MacMillan and Creelman, 1991).

SDT splits the variability in the data into two independent components: perceptual and decisional. The perceptual index, d', is a measure of how well the system or detector discriminates between the noise and the signal distributions. This measure is similar to discrimination using Luce's Choice theory, (Luce, 1963a), where α is found by[26]:

$$\alpha = \{[H\,(1\text{-}FA)] / [(1\text{-}H)\,FA]\}^{1/2}$$

In the case of the d' index, hit or false alarm rates are converted to z scores. However, because d' does not take into account information about the standard deviation of the signal plus noise distribution, d_a, which uses the square root of the mean of the noise and signal plus noise variances, will be used in this analysis, (Simpson and Fitter, 1973):

$$d_a = z\,(H)\text{-}z\,(FA)$$

The decision index, β, is the quantified decision rule used by the detector to arrive at the discriminations. Bias is the tendency to favour one response over another, disentangled from sensitivity. This rule could be conservative, where a low false alarm

[26] Most frequently, the natural logarithm of α is used: $d' = 0.5 \ln \{[H(1\text{-}FA)] / [(1\text{-}H)FA]\}$. From MacMillan and Creelman, 1991).

and hit probability would result, or lenient, which would generate very high false alarm and hit probabilities. Increases in β decrease Type I error risk, and decreases in β decrease Type II error risk. Bias, for yes-no (Information – No Information)choice experiments such as the one that is used in this research is calculated as follows, (Swets and Pickett, 1982):

$$\beta = -0.5\ \{[z(H) + z(FA)]$$

Luce Choice theory calculations for bias is as follows[27]:

$$B = \{[1\text{-}FA)(1\text{-}H)] / [(H)(FA)]\}^{1/2}$$

Bias depends on the costs and values associated with making discrimination errors, as well as prior probabilities of the signal (estimations), which, as previously discussed, may be related to sales success, (Swets and Pickett, 1982). An example of how bias might change in the sales transaction is as follows. When salespeople think the customer is ready to purchase, (high CPP), they will likely try to close the sale. If the customer is not ready to buy, (low CPP) and the salesperson tries to close anyhow, the customer may feel that the salesperson is 'pushy and aggressive', a concept that will be described as the "Close Under All Circumstances" proposition. Under these conditions, the customer may become angry, unhappy, or feel otherwise negatively toward the salesperson, and /or the selling organization. This negativity may lead to customer dissatisfaction, and may reduce the probability of the customer returning to the salesperson or company, (e.g. Sharma, 1997), This may be an important issue if there is a significant possibility of repeat or referral business from the customer, such as in the case of relationship selling, (Manning and Reece, 2003). Under these conditions, bias is likely

[27] Again, usually a log of this function is used. The formula, corrected for the possibility of β reaching infinity is $\beta = .5(\ln\{[1\text{-}FA)(1\text{-}H)] / [(H)(FA)]\})$.

to be conservative: salespeople won't 'push' to sell unless there are strong indications that the customer wants to purchase. However, if the salesperson will never see the customer again and will not get referrals from that customer, the cost of trying to close when the customer is not ready to purchase is reduced. A more liberal bias score is likely under these circumstances.

Both d_a and β calculations are calculated in Systat procedures, but only d_a will be specifically analyzed in this research. Specifically, d_a is examined to determine if salespeople of varying success levels differ in their ability to discriminate between relevant and irrelevant customer cues.

2.22 Predictions of Sensing: Sales Success, SOCO and ADAPTS

Predictions from the sales literature, and in particular, the hypothesized relationship between effective listening and sales success imply that compared to lower score salespeople, higher score salespeople are 'better listeners'. Thus, high score salespeople should be able to more accurately discriminate (sense) which parts of the customer message contain information relevant to the updating of CPP estimates, (relevant cues) and which do not, (irrelevant cues). In other words, high score salespeople should be better 'sensors'. The next component, *evaluation*, will now be addressed.

2.23 Predictions of Evaluating: Sales Indices and Alternative Explanations.

In the SESER framework, evaluation occurs when salespeople update their prior customer purchase probabilities, (ΔCPP). Since it has been suggested that higher score

salespeople are better listeners, this implies that these salespeople are generally more sensitive to customer message content, and update their estimated purchase probabilities 'appropriately', according to the strength and valence of the customer message. In other words, when the message is positive, CPP should be updated in a positive direction, when the message is negative, CPP updating should be negative, when the message is neutral, or noise, no updating should occur. Further, when the message is strong, change in CPP should be greater than when the message is weaker. This is equivalent to an equal weight averaging model of decision making the final updating of CPP should approximate a mathematical average of the customer messages , (e.g. Anderson, 1965, 1981). This effect, graphically, is represented as follows:

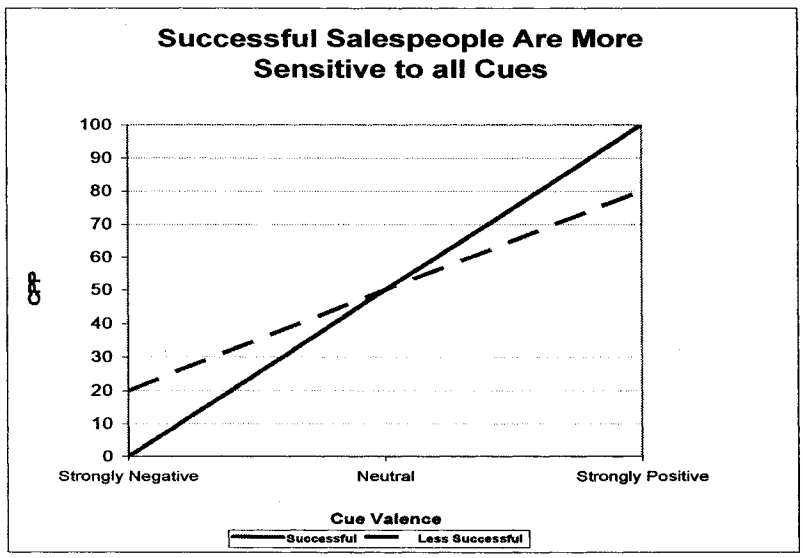

Figure 2-3 Successful Salespeople are More Sensitive to All Cues

However, consideration of other information processing and decision making literature gives rise to conflicting predictions of CPP updating. Successful (SF) salespeople may update CPP more consistently with the predictions of the positivity

confirmation bias, which suggests that "when testing an existing belief, decision makers search for evidence which confirms that belief, rather than evidence which disconfirms it", (e.g. Jones and Sugden, 2001; Klapper, 1960; Fazio, 1986)[28]. In particular, successful salespeople may have higher expectations of selling. They may, therefore, pay more attention to the cues that confirm their beliefs that they will sell: positive cues. In addition, successful salespeople are likely more aware that the sales transaction is often a negotiation, and that, as a result, moderate or weak negative customer cues are often simply tactics to obtain better purchase terms, (DePaulo, 1988). As a result, successful salespeople may also be more inclined underweight weaker negative cues as compared to less successful salespeople. Strongly negative cues will likely not be ignored, as will be discussed in section 2.24 below. Successful salespeople may actively seek and selectively attend to customer messages which confirm a high probability of purchase, and discount messages which decrease customer probability of purchase.

These predictions have been repeatedly described in practitioner journals, (e.g. Prus, 1989, Kennedy, 1999; Archie, 1984):

> "the saleswoman who couldn't hear a no shouted in her ear, but could hear a whispered yes from 50 paces. That is the right approach, simply ignore the word no...don't let it stop you", (Kennedy, 1999).

At some point, however, as will be further discussed, successful salespeople may see the customer purchase probability as extremely low, (as in the case of strong negative cues), and actually end the transaction. As such, and if positive confirmation bias accurately

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[28] This phenomena has also been described as a confirmation bias pattern of processing and filter in only attitude consistent information, (e.g. Klapper, 1960; Fazio, 1986; Kahneman and Lovallo 1993; Kahneman and Tversky, 1995).

reflects the decision making style of successful salespeople, results should approximate this function:

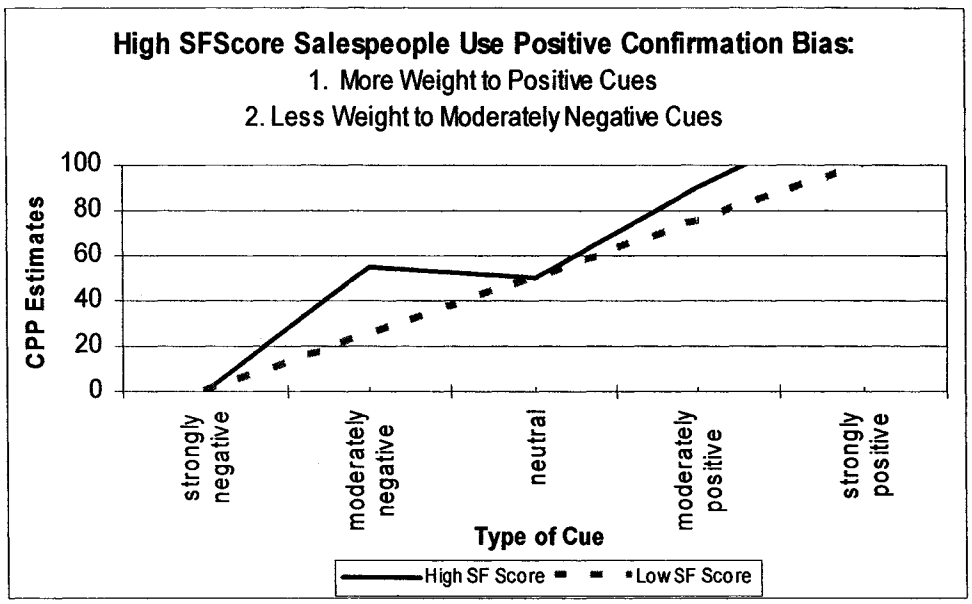

Figure 2-4 Positivity Confirmation Bias / Ignore Negative Cues Processing Predictions

Instead of the outcome graphically shown here, it may be the case that only underweighting of negative cues may occur, or only overweighting of positive cues may result (e.g. only one half of the predicted function), keeping in mind these predictions are relative to less successful salespeople. If successful salespeople do underweight negative cues, this effect would be particularly interesting, given the robust finding that people are generally more sensitive to negative information, (negativity bias), (Cacioppo and Bernston, 1994; Cacioppo, Gardner and Bernston, 1997; Ito et al., 1998; Rozin and Royzman, 2001; Baumeister et al, 2000; Kahneman and Tversky, 1979; Skowronski and Carlston, 1989).

2.24 Predictions of Reaction: Sales Success, (SF), SOCO and ADAPTS

Lastly, predictions of the relationship between reactions of salespeople and sales success, SOCO and ADAPTS scores will be addressed. After a customer transmits a message to the salesperson, the salesperson can react in one of four ways. First, if the customer appears to intend to continue talking, or if the salesperson does not know what to say in response to the customer, the salesperson may simply continue to listen. Second, if the customer statements appear to require a response, the salesperson could respond to the customer. Third, if it appears that the customer is likely to purchase, the salesperson could try to close the sale. Finally, if the salesperson perceives that there is little or no likelihood of the customer purchasing, the salesperson could end the transaction.

The reactions of salespeople as a function of customer cues have not been empirically tested; therefore the predictions of this dissertation are based on anecdotal accounts and the application of the general propositions from the literature. These sources suggest that salespeople should react in 'appropriate' ways to customer cues: if the customer appears to strongly want to purchase, salespeople should try to close. If the customer appears to strongly *not* want to purchase, salespeople should end the transaction. The literature predicts a positive relationship between increasing SF, SOCO and ADAPTS scores and appropriate listening behaviors, therefore appropriate reactions should be positively related to increasing scores.

Specifically, ending a transaction would occur when customer purchase intentions are so low that a sale is extremely unlikely. Under these circumstances, there may be an opportunity cost for the salesman to continue to interact with that customer: for example, a lost opportunity to seek out or interact with other customers that are potentially more

likely to purchase. This cost is emphasized when there are many customers in the store waiting to communicate with a salesman. Successful salespeople may be successful, in part, because of their use of the 'law of probability': the more customers that the salesman interacts with, the more likely a sale will occur. Thus, if they become aware that the probability is very low, they may decide that further interactions with a particular customer are not likely to result in a sale and will choose to end a transaction more frequently than low score salespeople. This cost may be particularly relevant to salesmen being compensated in whole, or in part, on commission, since this remuneration highlights the need to sell, rather than the need to communicate with customers. Less successful salespeople, on the other hand, may be more reluctant to end the sale because of a lower confidence in their ability to judge customer purchase probabilities, as described earlier.

Further, if cues are strongly positive, as scores increase, these salespeople will likely choose to close more frequently than lower score salespeople. Anecdotal practitioner accounts suggest that successful salespeople attempt closing more frequently than less successful salespeople, (e.g. Reagquan, 1997; Manning, Reece and Mackenzie, 2001; Blayton, 2001). This prediction is in contrast with the academic literature which suggest that successful salespeople should not try to close on neutral or negative cues, particularly in the face of increased likelihood of repeat or referral business.

There are alternative viewpoints, however; the first of which will be called the "Close Under All Circumstances" proposition, which is related to bias changes, as described on page 49. Under some conditions, salesmen may be successful because they use a non-adaptive communication style and / or a sales-orientation, and communicate

with the expectation of selling, rather than solving customer problems, (e.g. Shays, 2001). This non-adaptive style is even more likely to exist if salesmen are compensated or evaluated based on sales: the cost of *not* selling is high, and the cost of driving a customer away, due to aggressive sales tactics is minimal, unless customers complain directly to the selling organization. Even if the customers complain, the 'aggressiveness' of the salesmen is likely to be downplayed, ignored, or even valued since, at least in the short run, the main company objective is short term profit. This is particularly true when there is little possibility of repeat or referral business, there are no customer satisfaction-based incentive systems, and there are no organizational systems to track customer satisfaction, (e.g. Sharma, 1997). The lack of extrinsic incentives to 'adapt' or be 'customer oriented' may impact the responses of some salespeople. This issue will be investigated in future research.

If this viewpoint is correct, successful salespeople will likely make some type of attempt to close, no matter what type of customer message is being transmitted. If the closing attempt fails, and the customer terminates the transaction, the successful salesperson will have effectively ended the transaction by closing. And if the customer responds favorably to the closing attempt, the successful salesperson will have an opportunity to evaluate what barriers to purchase remain in the mind of the customer, and be able to refocus on handling those barriers to increase the probability of purchase. This technique has been commonly addressed in the literature, as a 'trial close' (Manning and Reece, 2002; Kennedy, 1999; Prus, 19891; Futrell, 1994).

Alternatively, there is also a possibility that the reactions taken in response to customer cues are not related to SF, SOCO and ADAPTS at all, since this relationship

has not been empirically tested to date. It may be that sales success is not related to differences in *how* the salespeople choose to react to the customer statements, but instead, it may be the actual words that salespeople use in their verbal responses to customers that lead to success. This possibility will be addressed in future research.

III. Propositions From Literature Review

In summary, applying the SESER framework of communication to the sales context suggests the following general propositions:

I. When a customer approaches a salesperson, prior to the initiation of communication, the salesperson makes a judgment about the customers' purchase probability: (estimation: CPPP). This estimate may be impacted by prior expectations of the sales context as well as characteristics of the salesperson.

II. Customer messages contain verbal and paralanguage components.

III. Customer messages may be imprecise due to varying signal strength or conflicting message content.

IV. Imprecision in customer messages may also occur because of the motivation, certainty, prior expectations and skill of the customer.

V. Irrespective of the reasons for the imprecision, the salesperson will have to sense, evaluate, and react to the customer message.

VI. The motivation, confidence, skill and prior expectations of salespeople may impact how salespeople sense, evaluate and react to customer messages.

VII. The communication will iterate until the customer purchases or leaves the transaction.

The next chapter will set out the specific research hypotheses, as follows.

CHAPTER 3 HYPOTHESES

In the previous chapter, a number of general propositions were presented, and the SESER framework was developed. The specific hypotheses and the propositions and literature that support these hypotheses are as follows.

H1: Sales success is positively related to CPPP estimates.

As a precursor to communication in the sales transaction, salespeople make an initial *estimate* of customer purchase probability, based on their pre-exiting situational and customer schemas: estimation, CPPP, as indicated in Proposition I. Based on the practitioner literature as described in Section 2.19, CPPP should be positively related to sales success (SF scores).

H2A: Sales success (SF) is positively related to discrimination levels.

H2B: SOCO is positively related to discrimination levels.

H2C: ADAPTS scores are positively related to higher discrimination levels.

The next phase of the SESER framework is sensing, which is based on Proposition V. As described in Section 2.22, as sales success (SF), customer orientation (SOCO) and adaptability (ADAPTS) increase, the ability to discriminate (sensing) between relevant and irrelevant customer cues should also increase.

H3A: Salespeople appropriately update their CPP (ΔCPP) as a function of a customer's verbal and paralanguage cues.

H3B. Appropriate updating of CPP (ΔCPP) as a function of a customer's verbal and paralanguage cues is positively related to SOCO scores.

H3C. Appropriate updating of CPP (ΔCPP) as a function of a customer's verbal and paralanguage cues is positively related to ADAPTS scores.

H3D. Appropriate updating of CPP (ΔCPP) as a function of a customer's verbal and paralanguage cues is positively related to SF scores.

H3DI: There is a negative relationship between SF scores and updating CPP (ΔCPP) when customer cues are moderately negative.

This set of hypotheses is founded on Proposition V which suggests that once customer cues are sensed, the salesperson will evaluate the meaning of the cues, (ΔCPP). As indicated in Section 2.23, the academic literature suggest that as sales success (SF), customer orientation (SOCO) and adaptability (ADAPTS) increase, salespeople will update their customer purchase probabilities in an appropriate manner which reflects the nature of the customer cues. In contrast to the academic predictions, the practitioner literature suggests that as sales success (SF) increases, salespeople will tend to underweight moderately negative customer cues.

H4. Salespeople react appropriately to the verbal and paralanguage content of customer cues.
H4A: Appropriate reaction to the verbal and paralanguage content of customer cues is positively related to sales success. (SF)

H4AI: There is a positive relationship between sales success and choosing to close.

H4B: Appropriate reaction to the verbal and paralanguage content of customer cues is positively related to customer orientation. (SOCO)

H4C: Appropriate reaction to the verbal and paralanguage content of customer cues is positively related to adaptability. (ADAPTS)

The final group of hypotheses is also based on Proposition V: once customer cues are sensed and evaluated, salespeople will react to the customer cues in some manner. Four choices, (listen, respond, end and close), are presented, and the salesperson chooses one of these reactions after exposure to each customer cue. As suggested in Section 2.24, the academic literature predicts that as sales success, (SF), customer orientation (SOCO) and adaptability (ADAPTS) increase, reactions to customer cues will be more appropriate, since higher scores are associated with better listening skills and a greater sensitivity to customer cues. "Appropriate" is operationalized as a greater likelihood of choosing to close as cues become more positive, and a greater likelihood of choosing to end the transaction as cues become more negative. In contrast, the practitioner literature predicts that as SF scores increase, there will be an increased likelihood of closing, irrespective of the nature of the customer cues.

CHAPTER 4 EXPERIMENTAL PROCEDURES

4.1 PARTICIPANT SELECTION

Real estate agents were selected to be the participants in this research for a number of reasons. First, the purchase of real estate (residential, personal use, as compared to commercial), is likely a very important decision for most customers: financial commitment is large, if the 'wrong' property is chosen, the consequences in terms of lifestyle are significant, the decision making process is extensive, due to the high risks, and customer involvement is likely very high, (Kotler, 2003, Manning and Reece, 2001). Further, if the agent does a 'good job' in his or her interactions with customers, the likelihood of repeat and referral business is also high[29]. As such, agents are likely to pay close attention to what a customer is saying, and will be motivated to ensure that they 'listen' to the customer in the most optimal way. In addition, real estate agents are professional salespeople, and will likely show no hesitation or reluctance to sell any particular house.

Finally, these participants were chosen because they are likely to practice both customer oriented and adaptive selling practices. According to the literature, (Saxe and Weitz, 1982 at 348; Sujan, Sujan and Weitz, 1986 at 176), a customer orientation and adaptive selling are likely to occur when: the customers are making significant purchase decisions, there are a variety of product offerings, the customers are engaged in complex buying tasks, the salesperson has a cooperative relationship with his or her customers,

[29] Results from depth interviews, 2001.

and repeat sales and referrals are an important source of business for the salesperson. Real estate agents and their interactions with customers display all of these factors.

As a result of this participant selection, the generalizability of these results to other purchase situations, such as commercial sales, may be limited. This issue will be investigated in future research.

4.2 Pretests and Experimental Design

Two main experiments and a number of pretests were used to address these hypotheses. The product category chosen for this research was residential, personal use houses. The experimental procedures, which will be subsequently described, required the use of house descriptions and customer cues. These factors were pretested, as follows.

4.3 Selection of House Descriptions

To ensure that each of the fifteen house descriptions did not influence CPPP estimates, twenty five house descriptions that were designed to be equivalent with respect to price, number of bedrooms and features were presented to a convenience sample of ten real estate agents, who were asked to rate the desirability of the houses from 0-100. From these twenty-five, fifteen that were approximately equivalent in rating (80-85) and had low standard deviations were selected. This procedure was designed to decrease errors in CPPP arising from house description differences[30].

[30] Please see Appendix A for house descriptions pretested.

4.4 Selection of Relevant and Irrelevant Verbal and Paralanguage Cues

Because pre-existing literatures had not empirically identified which verbal and paralanguage cues contained the various levels of signal strengths that were being tested in this research, a number of preliminary procedures were completed. Specifically, the selection of verbal and paralanguage cues and noncues was based on a series of iterative processes: the literature review, described above, depth interviews, and a series of pretests.

Depth interviews were completed with a convenience sample of five realtors who were questioned about how they knew whether or not a customer was interested in purchasing a property , the results of which are found in Appendix B. From this data, a series of pretests were developed, as follows.

In pretest one, (n=16), participants were presented with a list of verbal and paralanguage cues and rated these cues on how they impacted customer purchase probability. In this pretest, only moderate strength positive, (+), neutral, (0) and moderate strength negative (-) verbal cues were tested. Paralanguage cues of all types (+, 0,-) were also presented to the participants. The participants were asked to circle the number that represented how likely it was that a customer would purchase, given the verbal or paralanguage cue. Information on Pretest One is available in Appendices C, D and F.

The first pretest provided some interesting results. Participants were categorized based on a factor score of income and self report of success (SS). High and low score salespeople did not similarly evaluate the verbal cues: high score realtors did not evaluate moderately negative cues in the same way that low score salespeople did. The model that

was tested, using repeated measures, where verbal cues had 3 levels was: CPP Rating = V + SS. Graphical representations of the results are as follows:

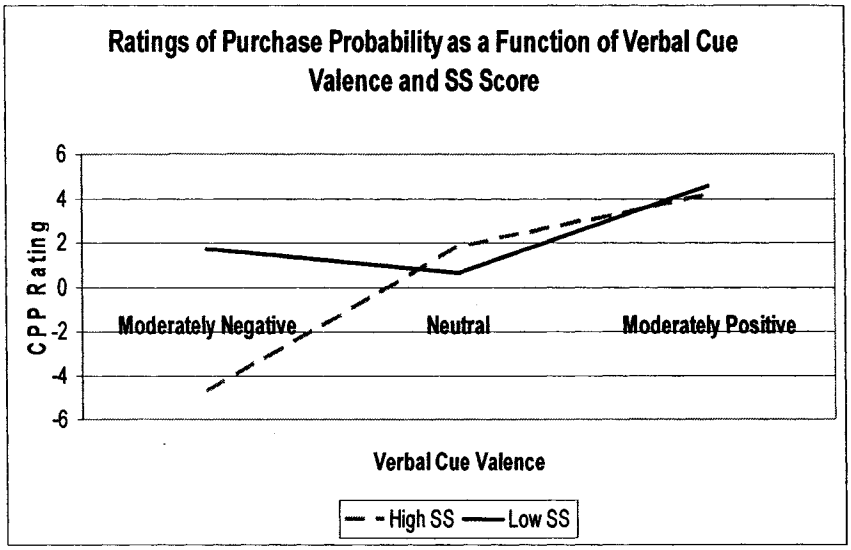

Figure 4-1 Pretest Results

Significant effects were found for verbal cue type, (+, 0, -), ($F_{1, 12} = 302.148$, p, < .01) and for Cue type x SS, $F_{1, 12} = 52.498$, $p < .01$. Follow-up tests revealed differences high and low SS salespeople with respect to the negative cues ($F_{1, 12} = 21.100$, $p < .01$)[31]. There were no other significant effects. A discussion with several real estate agents, and the practitioner literature confirmed that this pattern was to be expected.

Because high and low score salespeople evaluated cues in this varied manner and a more definite indication of the signal strength of the cues was necessary, a modified pretest procedure was utilized, as shown in Appendix E. Here, (n= 23) the participants were presented with all valences and strengths of verbal cues (strongly negative: - - , moderately negative: - , neutral: 0, moderately positive: + and strongly positive: + +), as well as the three valences of paralanguage cues, (+, 0, -). Rather than the cues being presented from a customer, the scenario was that *another real estate agent* had presented

[31] The data was dichotomized into high and low salesperson groups only for this pretest analysis.

the cues. This scenario was used to try to isolate the signal strength measurement from the signal source. When presented in this way, no significant cue type x SS score effects were evident. Thus, from these responses, the cues were chosen to reflect the 5 x 3 cue design set out in this study[32].

Once selected, the cues were recorded[33]. Cues were recorded with only one female voice to prevent confounds. This may have led to carry over effects in participant responses, however future research using a variety of voices may be completed.

These recordings were first pretested on students (n=80) to determine whether or not the paralanguage manipulations on the verbal cues had the desired signal strength effects. Please see Appendix F for a description of this procedure. Three of the cues were re-recorded, and those cues were pretested on a convenience sample of students (n=10). Next, the cues were then presented to a convenience sample of realtors (n=12), who confirmed the 5 x 3 manipulations. The realtors and students were both told that the cues had come from a customer, due to the revised wording of the cues. This issue may have led to discounting of moderately negative cues by realtors, as in the first pretest. However, since it was only the impact of the paralanguage manipulations on the verbal cues that was being tested, if those manipulations worked (e.g. when a positive verbal cue had a negative paralanguage cue attached, it was evaluated as less positive than when a neutral or positive paralanguage cue was attached to that same verbal cue), the verbal x

[32] Please see Appendix M for Scripts of chosen stimuli and scores and K for standard deviations and values of selected cues.
[33] Using Super MP3 Professional Software.

paralanguage cue was accepted for use in the experiments[34]. On the basis of these pretests, cues were identified that were used in the main experiments, as follows.

4.5 EXPERIMENT ONE

Experiment One specifically tests hypotheses one, two and three and provides the dependent variables of CPPP, discrimination, and ΔCPP. In order to collect these data, a computer data collection program was developed: the Perceptual Chronograph. Screen shots of what the participants were exposed to are available in Appendix N. The basic operations of this program are as follows:

Participants logged onto the testing website: **sales-test.com**. They were given a unique password[35] and test name[36], and signed on. They next saw a consent page which outlined the nature of the study, and if they agreed to participate, they pressed the "I have read the above and agree to participate" button and the program moved forward. If they declined, they pressed the "I decline to participate" button and the program went to a screen that said "Thank You for Your Time".

If the realtor agreed to participate, the following would occur. Participants read a cover story where a fellow real estate agent friend had to go away on a family emergency, and had asked the participant to show a house to a client on his or her behalf. Since it was an emergency, all that the friend had explained about the client was that it was the client's second visit to the house, and that if the client bought the house, the

[34] Please see Appendix K for Means and standard deviations of recorded stimuli and procedures for this pretest.
[35] Data pertaining to who actually logged on, using the unique password information, was not collected, due to issues of confidentiality and anonymity. IP addresses, however, were collected, to ensure that the subject had a complete set of data, and did not log on more than once. IP addresses were not used in any way besides this function.
[36] Test1, for experiment one.

participant would get a full commission on the sale. Thus, it was impossible for the realtor to have any prior knowledge about the customer, effectively taking away any prior person schema that the realtor may have otherwise used.

Next, the realtor read a house description. Based on the house description alone and the fact that this was the client's second visit, realtors were asked to make a customer purchase probability estimate: CPPP. Once they estimated an initial CPPP, the realtor heard comments that the 'client' made while viewing the house, (hereinafter, "the conversation"). There were 11 statements presented: the first was a male voice stating "Trial will start in three, two one", in order to prepare the participant for the start of the trial. Similarly, when all of the experimental customer cues were presented for each of the 15 trials, the same male voice stated "End of Trial, please press continue".

There were nine actual customer cues presented for each trial. Six of the statements were irrelevant to the house purchase: including for example "Hello", "My name is Ginger Smith", "It sure is beautiful outside", and so on, (noise). Three of the statements contained the experimental manipulations being investigated in this research, (hereinafter "the cues").

An example of the procedures, including complete verbal instructions, was completed prior to the actual trials, in order to familiarize the participants with the procedures. While the participants were completing this example, a full set of verbal instructions (recorded in the male voice) explained, step by step, what the participants were asked to do. In addition, the subjects were told that if they were unclear as to the experimental procedures, they should contact the researcher. Contact information was

given, however no phone calls for clarification on the experimental procedures were received.

The cues varied on their verbal and paralanguage signal strength. A 5 x 3 within subjects design was used. As indicated previously, there were five levels of verbal signal strength: strongly positive (++), moderately positive (+), neutral (0), moderately negative (-), and strongly negative (--). There were three levels of paralanguage signal strength: positive (+: customer sounds happy), neutral (0: non-expressive tone of voice with little and / or voice inflection), and negative (-: customer sounds unhappy).

While listening to the statements, the participant would click on one of two buttons that were displayed during this phase of the testing. One button was labeled "Information", the other button was labeled "No Information". Subjects were instructed, both in writing and in a recorded statement, to press "Information", if the statement they heard had message content which would help them to estimate customer purchase probability, and to press "No Information", if the statement did not help them in determining that probability. After listening to the complete conversation, participants were asked to provide another estimate of customer purchase probability: CPPA.

Once the participants submitted the CPPA information, they were presented with another house description, heard another conversation with three embedded cues, pressed the Information or No Information buttons as they listened and finally provided another estimate of CPPA. Trials were presented in groups of five and in between, demographic information, SOCO or ADAPTS information was collected to prevent participant fatigue. In total, because this experiment consisted of a 5 x 3 design, the participants were exposed to 15 different conversations: a full factorial design.

House descriptions, noise and cues were pretested, as described above. The order of presentation of the conversations (trials 1-15) was randomized after every 10th participant and the button location was reversed after approximately every 5th participant. The order of the presentation of the statements in the conversations was kept constant. Trials started with the statement "Trial will start in three, two, one". Trials ended with the statement "End of trial, please press continue". The presentation order of the conversations and the full scripts of the trials can be found in Appendix M.

Participants completed the SOCO and ADAPTS scales, and provided a variety of demographic information, including a self assessed rating (out of 100), and their income levels, (scale of 1-5). After completion, the managers of these agents were contacted, and they also assessed the agent on a success scale out of 100[37]. At the end of the test, a page thanked the participants for their time, and gave contact information. Information on CPP estimates, button clicks, and answers to SOCO, ADAPTS and demographic information were captured in an Access database that was downloaded by the researcher. A flow-chart of the experimental procedures is as follows:

[37] In the consent form at the beginning of the test, it was explained that managers were going to be contacted for this assessment.

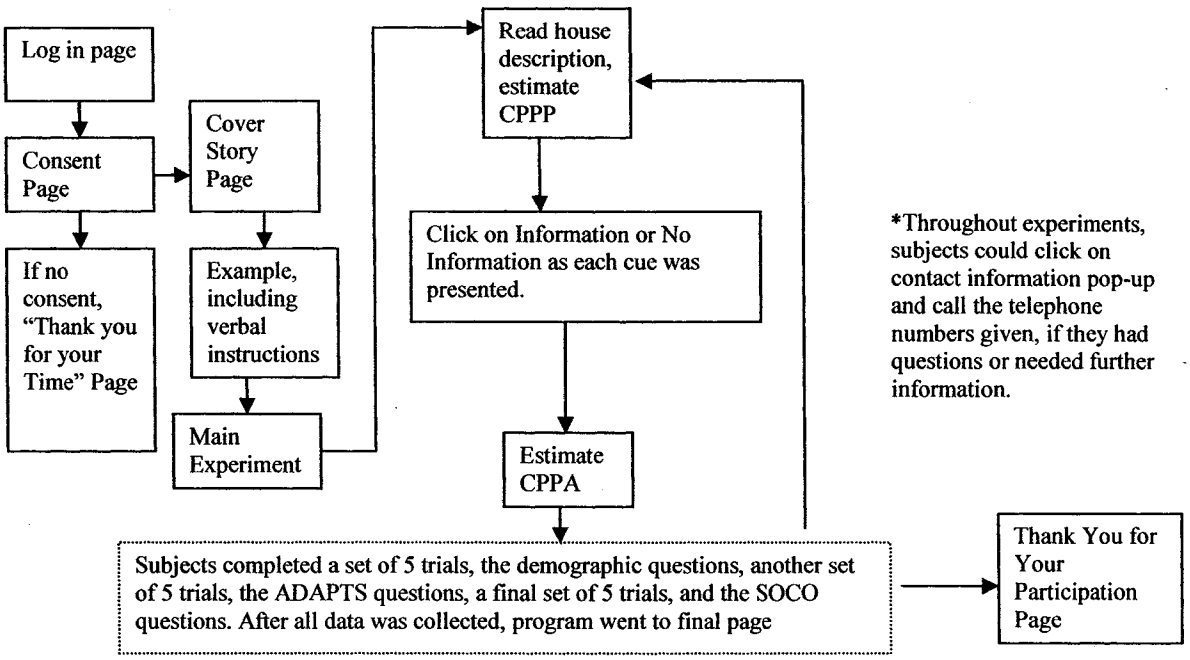

Figure 2: Experiment One Flowchart

4.6 EXPERIMENT TWO

Experiment Two tests Hypotheses One, Three and Four. Here, the experimental procedure was identical to the procedures indicated in Figure 7, except rather than clicking on Information or No Information, the participants had four buttons to choose from: Continue to Listen, Respond to Client, Try to Close, and End Transaction. The button choices were randomized after approximately every twentieth respondent. Button clicks, CPP estimates, and answers were collected in an Access database that was downloaded by the researcher. A description of the sampling considerations is as follows.

4.7 Sample, Sampling Procedures and Response Rates

The participants for Experiments One and Two were recruited from the Ottawa and surrounding area[38] real estate agents by three methods: email, posters and regular mail. Email messages were sent to a selection of agents, based on lists of agents and brokers available from the Ottawa Real Estate Board and the Multiple Listing Service (MLS) websites and personal contacts. Agent information was downloaded to a database, and systematic random sampling was employed[39]. Agents with email addresses were contacted with an announcement of the recruitment for the studies. Emails were sent over a period of twenty-four weeks, with a range of between 10-40 agents mailed per contact session[40]. After each contact session, a wait period of approximately one week was allowed to avoid website congestion, which would cause slower operation of the data collection program. Data from the first five respondents was unusable because of missing values due to web hosting issues that were resolved before the next contact session.

Initially, response rates to the email recruitments were quite low, (just over 11%), even though the topic of testing was salient to the contacted participants, (Sheehan and McMillan, 1999). This level of responses was not unexpected, however, given a number of factors including the documented low rates of responses to all types of Internet testing invitations, (Cook, Heath and Thompson, 2000), the fact that the emails were sent in the 'busy period' of real estate transactions: (spring and summer), and the fact that the test took approximately one half hour to complete, (Heberlein and Baumgartner, 1978; Steele,

[38] Ottawa-Carlton, Cornwall, Rideau- St. Lawrence, Kingston and Renfrew County areas.
[39] Population of listed agents: approximately 2950: 2790 with email addresses, 200 with no email addresses. Skip interval: 15. Skip interval chosen for oversampling, since low response rates anticipated. Random number start: 312.
[40] A contact session was a period of about two hours, where various agents would be emailed. For the first contact session, only five agents were contacted.

Schwendig and Kilpatrick, 1992; Yammarino, Skinner and Childers, 1991). It is also possible that response rates were low due to not enough time passing before calculating initial response rates. To combat this low response pattern, follow up email messages were sent to potential participants, one week after the initial contact, reminding participants about the studies.

Two other methods of recruitment were used, in order to combat possible sample frame errors arising from the fact that not all agents had email contact information. Five large area agency brokers were contacted, and they agreed to display posters for study recruitment at their agencies. In addition, copies of the email message were sent by regular mail to the addresses of any selected agents that did not display email addresses. Call backs to the brokers verified that the posters were, indeed, displayed. Similarly, telephone calls were made to all regular mail potential participants[41], two weeks after the announcements were mailed, in order to remind the participants of the study. Responses to the posters were low: in order to participate, agents would have had to call to get testing log on information. Only five calls were received.

A total of four hundred and forty five recruitment requests, (not including the posters), were sent. Posters had an exposure rate of an average of 60 agents per brokerage, for a total of 300 agents. It is likely that some of the exposures were duplications to those selected for email or mail recruitment, nevertheless, the total recruitment, assuming no duplication, was approximately seven hundred and forty five agents.

[41] Regular mail participants were derived from the Internet, phone books, and listings of the Ottawa Real Estate Board realtors. Duplicates which had email addresses were omitted.

Of the participants recruited for Experiment One a sample of n=78 was collected. Twelve data sets were omitted, due to extensively missing data. Experiment One had a usable data set of n=64. Of the participants recruited for Experiment Two, a sample of n=91 was collected, and there were 82 usable data sets. Response rates were 22.68 percent and usable data rates were 19.6 percent.

The statistical analysis and interpretation of the data will be described in the next chapter.

CHAPTER 5 DATA ANALYSIS AND INTERPRETATION

This chapter is comprised of three main sections: data procedures which support hypothesis testing, specific hypothesis findings and a summary of results. Statistical procedures were completed with SPSS, version 11.0.1 and SYSTAT Version 10.2[42]. Tables of abbreviations and the levels of verbal and paralanguage manipulations used in this research are as follows:

Table 5-1: Abbreviations

Variable	Abbreviation
Customer purchase probability estimated before stimulus exposure	CPPP
Customer purchase probability estimated after stimulus exposure	CPPA
Change in purchase probability, pre and post exposure: CPPA - CPPP	ΔCPP
Verbal cues	V
Paralanguage cues	P
Verbal x Paralanguage Interaction	V x P
Sales Success Factor Score	SF
SOCO score	SOCO
ADAPTS score	ADAPTS
Discrimination between Cues and Noise index (signal detection)	d_a
Bias (signal detection)	β

Table 5-2: Levels of Verbal and Paralanguage Manipulations

Verbal Levels	Paralanguage Levels
2: strongly positive 1: moderately positive 0: neutral -1: moderately negative -2: strongly negative	1: positive 0: neutral -1: negative

[42] Pairwise comparisons were completed using a program written by Tom Johnson, Department of Psychology, University of Alberta.

I. Data Procedures

5.1 Data Considerations

Experiment One (n=64) generated the dependent variables: CPPP (the customer purchase probability estimate prior to customer message exposure), discrimination, (d_a), bias, (β), (which are based on which of the buttons 'Information' or 'No Information' the participant clicked after each customer statement) and CPPA, (the customer purchase probability estimate after the experimental exposure). Change in customer purchase probability estimates (ΔCPP) was calculated by subtracting CPPP from CPPA.

Experiment Two (n = 82) generated the dependent variables of CPPP, reaction choice, (which of four possible responses listen, respond, end or close did the participant select after each cue was presented), as well as CPPA, and the resulting ΔCPP. All independent variables were identical for both experiments. All of the participants in both Experiment One and Experiment Two were exposed to 15 trials, the full factorial design.

CPPP and ΔCPP were examined to determine whether or not there were significant group differences in the results of the two experiments. In addition, a repeated measures MANOVA was completed with the experimental condition (Experiment One and Two) coded as a dummy variable. There were no significant between experiment differences found using either technique, and because of this, calculations and statistical procedures involving CPPP and ΔCPP estimations utilize all participant scores, (n=146), whereas analyses specific to each experiment (discrimination

and bias for Experiment One, and reaction choice for Experiment Two) are completed with the data pertaining to that particular experiment[43].

5.2 Data Screening

The data were screened for accuracy, missing values, outliers, normalcy and multicollinearity. Data for twelve research participants from Experiment One and nine from Experiment Two were removed due to extensively missing data. After removal, Experiment One had useable data for 64 research participants, and Experiment Two had 82. Cook's D and leverage values were employed to identify outliers and none were found. The data appeared normally distributed, with the exception of β, which had high levels of kurtosis. A log transformation was applied to β which reduced the kurtosis to acceptable levels[44].

Multicollinearity of variables was examined. The independent variables of SF, SOCO and ADAPTS displayed significant levels of multicollinearity: SOCO was correlated to ADAPTS at $r_{146} = .428$ $p < .001$, SOCO was correlated to SF at $r_{146} = .484$, $p < .001$, and ADAPTS was correlated to SF at $r_{146} = .488$, $p < .001$. Because of multicollinearity, as well as because of the specific hypotheses tested in this research, SF, SOCO and ADAPTS measures were analyzed in separate models.

5.3 Descriptive Statistics

Descriptive statistics are as follows:

---

[43] Experiment One n = 64, Experiment Two n = 82.

[44] This measure was not used to test any of the main hypotheses, however, an exploratory GLM procedure revealed no statistical differences between successful and less successful salespeople in terms of their bias.

Table 5-3 Means for Participants

Variable Name	mean	median	mode	range	s.d.
Own Rating	80.38	80	90	60	11.42
Confidence in Handling Objections	68.33	70	50	90	17.26
Managerial Rating	75.6	75	80	75	14.51

An ANOVA procedure was used to determine the relationship between SF, SOCO and ADAPTS and own rating, confidence and managerial rating:

Table 5-4 SF and Confidence[45]

	Source	Sum of Squares (SS)	Mean Square (MS)	F	SIG
Confidence	Intercept	681542.25	681542.25	21131.13	0.00
	SF	17588.16	17588.16	98.85	0.00
	Error	25622.07	177.93		

Table 5-5: SOCO, Own Rating, Managerial Rating and Confidence

	Source	SS	MS	F	SIG
Own Rate	Intercept	943353.55	943353.55	7917.22	0.00
	SOCO	1736.62	1736.62	14.58	0.00
	Error	17157.90	119.15		
Confidence	Intercept	681599.91	681599.91	2717.58	0.00
	SOCO	7093.32	7093.32	28.28	0.00
	Error	36116.90	250.81		
Managerial Rating	Intercept	834442.89	834442.89	5621.75	0.00
	SOCO	9146.85	9146.85	61.62	0.00
	Error	21374.11	148.43		

Table 5-6: ADAPTS, Own Rating, Confidence and Managerial Rating

	Source	SS	MS	F	SIG
Own Rate	Intercept	943368.79	943368.79	7590.27	0.00
	ADAPTS	997.25	997.25	8.02	0.01
	Error	17897.27	124.29		
Confidence	Intercept	681621.88	681621.88	2621.99	0.00
	ADAPTS	5775.59	5775.59	22.22	0.00
	Error	37434.63	259.96		
Managerial Rating	Intercept	834470.16	834470.16	5242.47	0.00
	ADAPTS	7599.77	7599.77	47.75	0.00
	Error	22921.19	159.18		

[45] Own rating, managerial rating and income have not been included here as the measure SF is partially composed of these data.

There are significant relationships between SF, SOCO and ADAPTS, and the three measures own rating, confidence and managerial rating.

With respect to the categorical variables, frequencies of the participant responses are as follows:

Table 5-7 Categorical Response Frequencies (Percentages)

Years employed	Less than one year	1-2 years	3-4 years	5-6 years	7-8 years	9-10 years	Over 10 years
	0.70	**1.40**	**2.10**	**6.20**	**26.00**	**34.20**	**29.50**
Years in sales	Less than one year	1-2 years	3-4 years	5-6 years	7-8 years	9-10 years	Over 10 years
	6.80	**11.60**	**6.80**	**21.90**	**27.40**	**17.80**	**7.50**
Years in Real Estate Sales	Less than one year	1-2 years	3-4 years	5-6 years	7-8 years	9-10 years	Over 10 years
	17.10	**15.80**	**17.80**	**16.40**	**14.40**	**12.30**	**6.20**
Amount of Sales Training	Less than one year	1-2 years	3-4 years	5-6 years	7-8 years	9-10 years	Over 10 years
	6.10	**32.90**	**4.80**	**1.40**	-	-	-
Amount of Real Estate Training	Less than one year	1-2	3-4	5-6	7-8	9-10	Over 10
	75.30	**23.30**	**1.40**	-	-	-	-
Hours worked per week	Less than 10 hours	10-20 hours	21-30 hours	31-40 hours	41-50 hours	51-60 hours	over 60 hours
	0.70	**2.10**	**9.60**	**23.30**	**35.60**	**20.50**	**8.20**
Number of Transactions per year	Less than 10	10-20	21-30	31-40	41-50	51-60	More than 60
	2.10	**18.50**	**21.90**	**20.50**	**17.80**	**14.40**	**4.80**
Average Value of Transactions	Less than $100,000	$100-150,000	$151-200,000	$201-250,000	$251-300,000	Over $300,000	
	0.70	**11.00**	**24.70**	**28.80**	**19.20**	**15.80**	-
Education	Some high school	High School	College	University	Other	-	-
	11.60	**49.30**	**31.50**	**6.80**	**0.70**	-	-
Income	unknown	Under $50,000	$50,001-100,000	$100,001-150,000	Over 150,000	-	-
	6.20	**24.00**	**21.90**	**32.20**	**15.80**	-	-
Sex	M	F	-	-	-	-	-
	42.50	**57.50**	-	-	-	-	-

The relationship between SF, SOCO and ADAPTS and the demographic variables is as follows:

Table 5-8: SF and Demographic Variables: Corrected Model

	SS	MS	F	df	p-value
Corrected Model	105.50	9.59	32.59	11.00	0.00
Intercept	23.21	23.21	78.86	1.00	0.00
Sex	0.42	0.42	1.41	1.00	0.24
Years employed	0.38	0.38	1.27	1.00	0.26
Years in Sales	1.05	1.05	3.58	1.00	0.06
Years in Real Estate Sales	3.06	3.06	10.41	1.00	0.00
Amount of Sales Training	0.37	0.37	1.26	1.00	0.26
Amount of Real Estate Training	0.00	0.00	0.01	1.00	0.95
Hours worked per week	1.53	1.53	5.21	1.00	0.02
Number of Ends	5.95	5.95	20.21	1.00	0.00
Value of Property listed or sold	0.27	0.27	0.90	1.00	0.34
Education Level	0.15	0.15	0.51	1.00	0.48
Gross yearly income (last year)	36.84	36.84	125.17	1.00	0.00
Error	39.44	0.29		134.00	
Total	144.94			146.00	
Corrected Total	144.94			145.00	

Years in real estate sales, hours worked per week, number of ends, and income had a significant relationship with SF scores.

Table 5-9: ADAPTS and Demographic Variables

	SS	MS	F	df	p-value
Corrected Model	37.79	3.44	4.30	11.00	0.00
Intercept	11.54	11.54	14.43	1.00	0.00
Sex	0.02	0.02	0.02	1.00	0.88
Years employed	0.87	0.87	1.09	1.00	0.30
Years in Sales	0.23	0.23	0.29	1.00	0.59
Years in Real Estate Sales	0.02	0.02	0.02	1.00	0.88
Amount of Sales Training	2.05	2.05	2.57	1.00	0.11
Amount of Real Estate Training	0.34	0.34	0.42	1.00	0.52
Hours worked per week	1.96	1.96	2.45	1.00	0.12
Number of Ends	1.12	1.12	1.41	1.00	0.24
Value of Property listed or sold	0.42	0.42	0.53	1.00	0.47
Education Level	0.00	0.00	0.00	1.00	0.98
Gross yearly income (last year)	13.94	13.94	17.43	1.00	0.00
Error	107.19	0.80		134.00	
Total	144.98			146.00	146.00
Corrected Total	144.98			145.00	145.00

Years employed, years in sales, years in real estate sales, amount of sales training, amount of real estate training, hours worked per week, number of ends and value of the property all showed a significant relationships with ADAPTS scores.

Table 5-10 SOCO and Demographic Variables

	SS	MS	F	df	p-value
Corrected Model	10.13	3.35	4.15	11.00	0.00
Intercept	7.59	10.13	12.55	1.00	0.00
Sex	1.39	7.59	9.41	1.00	0.00
Years employed	0.02	1.39	1.72	1.00	0.19
Years in Sales	0.47	0.02	0.02	1.00	0.89
Years in Real Estate Sales	0.01	0.47	0.58	1.00	0.45
Amount of Sales Training	1.10	0.01	0.02	1.00	0.90
Amount of Real Estate Training	3.29	1.10	1.36	1.00	0.25
Hours worked per week	1.58	3.29	4.07	1.00	0.05
Number of Ends	0.18	1.58	1.95	1.00	0.16
Value of Property listed or sold	0.10	0.18	0.23	1.00	0.64
Education Level	3.95	0.10	0.13	1.00	0.72
Gross yearly income (last year)	108.17	3.95	4.89	1.00	0.03
Error	144.99	0.81		134.00	
Total	144.99			146.00	
Corrected Total				145.00	

Sex, hours worked per week, and income had a significant relationship with SOCO scores.

Almost ninety percent of the participants in the study had been employed for over seven years, and almost fifty three percent of them had been in sales for more than seven years. This sampling distribution may have an effect on the results, and will be discussed further in Chapter Six.

II. Tests of Hypothesis

5.4 Initial Customer Probability Estimates and Sales Success: Hypothesis One

H1: Sales success is positively related to CPPP estimates.

In Section 2.19 it was hypothesized that due to availability or confirmation biases there is a positive relationship between sales success and initial estimates of customer purchase probabilities, CPPP. The Pearson product-moment correlation of SF and CPPP was used to test this hypothesis. The results confirm the hypothesis: as SF increases, CPPP estimates also increases $r_{146} = .19$, $p < .05$. A large effect size is greater than .4, a medium effect size is between .25 and .4, and a small effect size is greater than .1 but not more than .25, (Cohen, 1988). Thus, although Hypothesis One is supported, the effect size is small. A determination of which of the availability or confirmation biases contribute to this result is an area for future research.

5.5 Sensing (Discrimination) and SF, SOCO and ADAPTS scores: Hypothesis Two

In Sections 2.22 and 2.23, it was hypothesized that there is a positive relationship between the ability to discriminate between relevant and irrelevant customer cues, and sales success, (SF), SOCO and ADAPTS scores. For each of the sub-hypotheses that follow, a Pearson product-moment correlation of the score (SF, SOCO and ADAPTS) and the discrimination levels are examined to determine relationships among the variables.

H2A: Sales success (SF) is positively related to discrimination levels.

In Section 2.23, it was hypothesized that as SF increases, the ability to discriminate between relevant and irrelevant customer cues also increases, since successful salespeople are better listeners. The results indicate a positive relationship between SF scores and discrimination levels, $r_{62} = .65$, $p<.01$ (large effect, Cohen 1988). As SF levels increase, the ability to discriminate between relevant and irrelevant customer cues also increases. This supports hypothesis H2A.

H2B: SOCO is positively related to discrimination levels.

Section 2.22 suggests that as SOCO scores increase, listening abilities, including the ability to discriminate between relevant and irrelevant customer cues should also increase. This hypothesis was supported: $r_{62} = .48$, $p<.01$, (large effect, Cohen, 1988). As SOCO scores increase, discrimination between relevant and irrelevant customer cues also increases.

H2C: ADAPTS scores are positively related to higher discrimination levels.

Section 2.22 hypothesizes a positive relationship between ADAPTS scores and listening abilities, where discrimination, or 'sensing' is part of listening. This hypothesis was also supported, $r_{62} = .53$, $p<.01$ (large effect, Cohen, 1988). As ADAPTS scores increase, salespeople are increasingly better at discriminating between relevant and irrelevant customer cues.

5.6 Evaluation (CPP Updating) and SF, SOCO and ADAPTS Scores: Hypothesis Three

H3: Salespeople appropriately update their CPP estimates (ΔCPP) as a function of a customer's verbal and paralanguage cues.

This hypothesis tests whether or not salespeople appropriately update their CPP estimates as a function of customer cues. The dependent variable is ΔCPP, the factors are the five verbal and three paralanguage levels and there are no covariates. A repeated measures MANOVA was used to determine if V (5 levels), P (3 levels) and V x P interactions had an impact on ΔCPP. Next, a pairwise comparison tests on the means of each of the 15 levels of experimental manipulations, (V X P) was completed to determine if salespeople update their customer purchase probability estimates as a function of customer cues. A graph of the results is as follows:

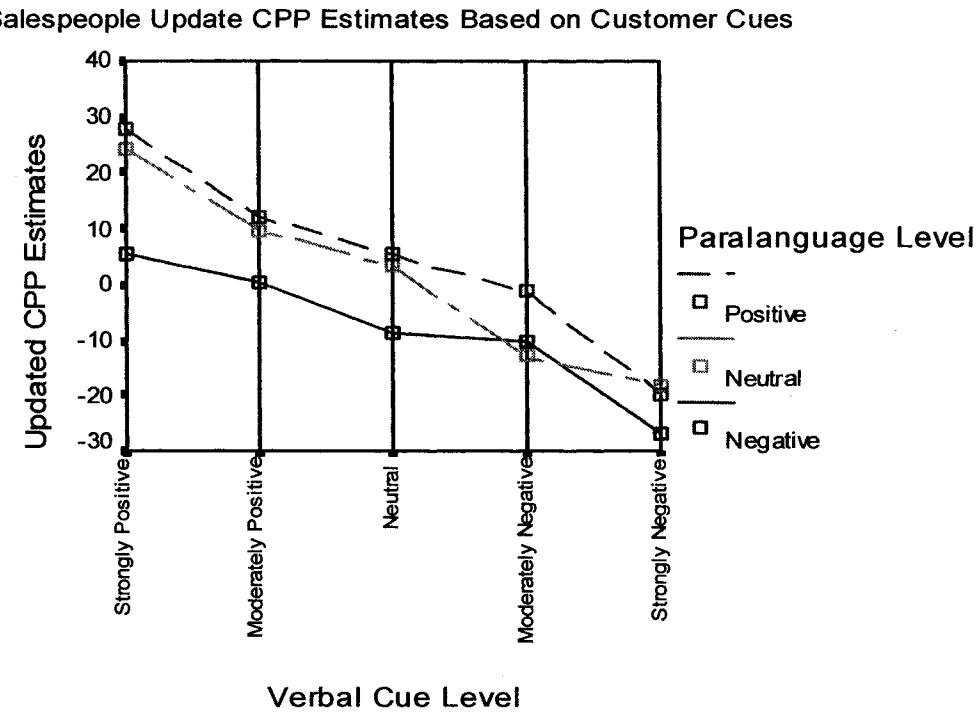

Figure 5-1 Salespeople Update CPP Estimates Based on Customer Cues

The multivariate statistics results are as follows:

Table 5-11 ΔCPP and Cues: Multivariate Effects

Effect	Wilk's Lambda	F	DF	Error DF	Sig.	Partial eta^2
V	0.11	282.54	4	142	0.00	.89
P	0.39	111.83	2	144	0.00	.61
V x P	0.60	11.31	8	138	0.00	.40

Since significant multivariate effects were found for V, P and the V X P interaction, this supports the hypothesis that customer verbal and paralanguage cues impact the salesperson's updating of CPP, (ΔCPP). Post hoc pairwise comparisons of means for each of the V X P levels results were as follows:

Table 5-12 Post Hoc Comparisons: ΔCPP and Cues

Group	V	P	Mean of ΔCPP	Std. Deviation
1	++	+	27.67	13.99
1	++	0	24.18	14.93
2	+	+	12.06	20.85
2, 3	+	0	9.59	14.28
3, 4	++	-	5.34	14.33
3, 4, 5	0	+	5.27	14.51
4, 5, 6	0	0	3.36	16.45
4, 6, 7	+	-	0.69	13.81
7	-	+	-1.30	1850
8	0	-	-8.90	18.87
8	-	-	-10.41	17.10
8	-	0	-12.95	20.87
9	- -	0	-18.29	17.21
9	- -	+	-19.73	19.34
10	- -	-	-26.92	18.81

The results are generally consistent with appropriate CPP updating. The most positive verbal cues receive the most positive ratings when paralanguage cues are neutral or positive. These two messages are not different from each other (both are in group one)

but they are significantly different from all other messages. The next group, in terms of the degree of positive updating, is represented by the moderately positive verbal cues paired with the positive and neutral paralanguage cues. The positive verbal / neutral paralanguage message stands in the middle between the more positive cues (group 2) and the more moderate cues (group 3), and does not differ from either of them. Group 3 contains moderately positive cues but also includes a strongly positive verbal cue. This strongly positive verbal cue appears to be substantially moderated by the negative paralanguage content, and thus, is no different in terms of means from the more moderate positive cues. This strongly positive verbal-negative paralanguage combination also appears in group 4, which otherwise contains neutral verbal cues combined with positive and neutral paralanguage, and a moderately positive cue combined with negative paralanguage. Here again, the negative paralanguage appears to be moderating the effect of the positive verbal statement. Group 5 contains neutral verbal cues combined with positive and neutral paralanguage. Group 6 contains neutral verbal and paralanguage cues and the positive verbal-negative paralanguage combination. Because of the moderating effect of the paralanguage, the positive verbal-negative paralanguage cue is perceived as similar to a neutral cue. Group 7 contains both positive and negative updating: because of the mixed valence of moderate verbal-negative paralanguage and moderate negative verbal – positive paralanguage, subjects do not update much with these cues because their meaning is uncertain. Group 8 contains neutral verbal-negative paralanguage, moderately negative verbal – negative paralanguage, and moderately negative verbal-neutral paralanguage cues. Salespeople are updating negatively in response to these cues, as expected. Group 9 contains strongly verbal negative cues at

neutral and positive paralanguage. Subjects decrease their estimates of customer purchase probability as a result of being exposed to these cues. Finally, strongly negative verbal combined with negative paralanguage causes the greatest decrease in responses, and is in a group by itself, again different from all other means. In summary, the results seem to reflect that salespeople update their CPP estimates in a manner appropriate with the strength and valence of the customer cues.

H3B. Appropriate updating of CPP (ΔCPP) as a function of a customer's verbal and paralanguage cues is positively related to SOCO scores.

As indicated in Section 2.23, the academic literature suggests that there is a positive relationship between SF, SOCO and ADAPTS scores and better listening. By implication, there should be a positive relationship between appropriate CPP updating (ΔCPP), and SF, SOCO and ADAPTS scores. The dependent variable in this hypothesis is ΔCPP, the factors are V (5 levels) and P (3 levels), and the covariate is the continuous, standardized SOCO score of salespeople. The multivariate results are as follows:

Table 5-13 Within Subject Effects: ΔCPP, SOCO and Cues

Effect on ΔCPP	DF	Error DF	Wilks Lambda	F	Sig.	Partial eta^2
V	4	141	0.11	280.84	0.00	.89
V x SOCO	4	141	0.95	1.95	0.11	.05
P	2	143	0.39	111.21	0.00	.61
P x SOCO	2	143	0.10	0.17	0.85	.00
V x P	8	137	0.60	11.24	0.00	.40
V x P x SOCO	8	137	0.45	0.45	0.89	.03

Table 5-14 Between Subjects Effects: ΔCPP, SOCO and Cues

Source	SOCO				
Effect on ΔCPP	SS	MS	F	SIG.	Partial eta^2
Intercept	1041.14	1041.14	1.57	0.21	.01
SOCO	15.31	15.31	0.02	0.88	.00
Error	95336.88	662.06			

There are no statistically significant main effects between SOCO scores and ΔCPP for this hypothesis. There are also no statistically significant interaction effects between SOCO and V, P or V X P. There is no relationship between increasing SOCO scores and more appropriate updating. H3B is not supported.

H3C. Appropriate updating of CPP (ΔCPP) as a function of a customer's verbal and paralanguage cues is positively related to ADAPTS scores.

As described in Section 2.11, the academic literature suggests a positive relationship between ADAPTS scores and appropriate updating. A repeated measure MANOVA was used to examine this hypothesis. The dependent variable is ΔCPP and the factors are V (5 levels) and P (3 levels). The covariate is the ADAPTS scores. The multivariate results are as follows:

Table 5-15 Within Subject Effects: ΔCPP, ADAPTS and Cues

ΔCPP			ADAPTS			
EFFECT	**DF**	**Error DF**	**Wilks Lambda**	**F**	**Sig.**	**Partial eta^2**
V	4	141	0.11	281.23	0.00	.89
V x ADAPTS	4	141	0.97	1.02	0.40	.03
P	2	143	0.39	111.21	0.00	.61
P x ADAPTS	2	143	1.00	0.10	0.91	.00
V X P	8	137	0.60	11.25	0.00	.40
V x P x ADAPTS	8	137	0.98	0.31	0.96	.02

Table 5-16 Between Subjects Effects: ΔCPP, ADAPTS and Cues

Source	ADAPTS				
EFFECT	**SS**	**MS**	**F**	**SIG.**	**Partial eta^2**
Intercept	1041.14	1041.14	1.58	0.21	.01
ADAPTS	583.70	583.70	0.89	0.35	.01
Error	94768.50	658.12			

Results reveal that there are no significant main or interaction effects involving the covariate, ADAPTS. There is no statistically significant relationship between

ADAPTS scores and ΔCPP measures, therefore Hypothesis 3C is not supported. Higher ADAPTS scores do not lead to differing evaluations of customer cues.

H3D. Appropriate updating of CPP (ΔCPP) as a function of a customer's verbal and paralanguage cues is positively related to SF scores.

In addition to the main hypothesis, an additional prediction will be tested. Specifically, the practitioner literature suggests that as sales success increases, there is a lower amount of CPP updating in relation to moderately negative cues (objections). Thus:

H3DI: There is a negative relationship between SF scores and CPP updating (ΔCPP) when customer cues are moderately negative.

As described in Sections 2.23, the academic literature implies a positive relationship between appropriate updating of customer purchase probability estimates and SF scores. In contrast, the practitioner literature suggests that when cues are moderately negative, there will be a relationship between lower ΔCPP levels and higher SF scores, as described in Section 2.23. A repeated measure MANOVA was used to test these hypotheses. The dependent variable was ΔCPP, the factors were V (5 levels), and P (3 levels) and the covariate was SF scores. The multivariate results are as follows:

Table 5-17 Within Subject Effect: ΔCPP, SF and Cues

ΔCPP				SF		
EFFECT	**DF**	**Error DF**	**Wilks Lambda**	**F**	**Sig.**	**Partial eta^2**
V	4	141	0.11	285.17	0.00	.89
V x SF	4	141	0.84	6.81	0.00	.16
P	2	143	0.39	111.35	0.00	.61
P x SF	2	143	1.00	0.19	0.83	.00
V x P	8	137	0.60	11.50	0.00	.40
V x P x SF	8	137	0.94	1.13	0.35	.06

Table 5-18 Between Subjects Effects: ΔCPP, SF and Cues

EFFECT	SS	MS	F	SIG.	Partial eta^2
Intercept	1041.14	1041.14	1.62	0.21	.01
SF	1.62	3050.83	4.76	0.03	.03
Error	92301.37	640.98			

There were significant main effects for SF, as well as a significant interaction between V and SF. There is a statistically significant relationship between ΔCPP estimates and SF. Further, as SF scores change, responses to the various levels of the verbal factors vary. In order to ascertain whether or not higher levels of SF were related to appropriate updating, follow up repeated measures MANOVA procedures were employed, as follows.

1. Positive Verbal Cues:

The dependent variable for this analysis was ΔCPP. The covariate was SF. Factors included three levels of P but only the two levels of verbal (verbal 2: strongly positive, verbal 1: moderately positive) that were positively valenced. This selection was made to determine if there was a positive relationship between ΔCPP, SF and appropriate updating for positive verbal cues. Multivariate results from this procedure are as follows:

Table 5-19: Within Subject Effect: ΔCPP, SF and Positive Verbal Cues

ΔCPP			Positive Verbal Cues			
EFFECT	DF	Error DF	Wilks Lambda	F	Sig.	Partial eta^2
V	1	144	0.61	92.59	0.00	.39
V x SF	1	144	0.96	5.46	0.02	.04
P	2	143	0.44	91.88	0.00	.56
P x SF	2	143	0.98	1.42	0.25	.02
V x P	2	143	0.85	12.18	0.00	.15
V x P x SF	2	143	0.96	2.94	0.06	.04

Table 5-20: Between Subjects Effects: ΔCPP, SF and Positive Verbal Cues

Source	Positive Verbal Cues				
EFFECT	SS	MS	F	SIG.	Partial eta^2
Intercept	153872.26	153872.26	402.07	0.00	.74
SF	2.20	2.20	0.01	0.94	.00
Error	55108.88	382.70			

There is a significant V x SF interaction, indicating that when verbal cues are positive, SF scores have a relationship with ΔCPP estimates. A further follow up repeated measures MANOVA utilizing only one level of verbal cue at a time was employed to clarify the nature of this relationship. The multivariate results of this procedure are as follows:

Table 5-21 Within Subject Effects, Positive Verbal Cues at Two Levels and SF

			Strong Positive Verbal Cues				Moderate Positive Verbal Cues			
EFFECT	DF	Error DF	Wilks Lambda	F	Sig.	Partial eta^2	Wilks Lambda	F	Sig.	Partial eta^2
P	2	143	0.49	74.77	0.00	.51	0.73	27.13	0.00	.28
P * SF	2	143	0.96	3.04	0.05	.04	0.99	0.51	0.60	.01

Table 5-22 Between Subjects Effects, Positive at Two Levels Verbal Cues and SF

Source	Strong Positive Verbal Cues					Moderate Positive Verbal Cues				
EFFECT	SS	MS	F	SIG.	Partial eta^2	SS	MS	F	SIG.	Partial eta^2
Intercept	159183.79	159183.79	373.50	0.00	.72	24263.93	24263.93	87.93	0.00	.38
SF	811.07	811.07	1.90	0.17	.01	934.80	934.80	3.39	0.07	.02
Error	61371.81	426.19				39734.61	275.94			

These results indicate that there is no significant P x SF interaction term and no main effects for SF[46] for either of the positive verbal cue levels. Thus, the appropriate updating of CPP for positive verbal cues is not related to levels of SF. Because there is no

[46]The P x SF interaction is marginally significant for strong positive verbal cues. This suggest that when verbal cues are strongly positive, different levels of paralanguage cue impact how the strongly positive verbal cue is perceived, and this varies, depending on the SF score. A follow up test on l each level of paralanguage (-1, 0, 1) at levels of paralanguage, when verbal cues are strongly positive revealed significant SF differences only when paralanguage was negative, $F_{(1, 144)} = 5.920$, $p < .05$.

relationship between SF and levels of updating for positive verbal cues, H3D is not supported with respect to positive cues.

2. Neutral Verbal Cues

In this model, there were three levels of P (-1, 0, 1) and only one level of V (0: verbal neutral) that were employed as factors. The dependent variable was ΔCPP. The covariate was SF. A repeated measures procedure yielded the following results:

Table 5-23 Within Subject Effects: Neutral Cues and SF

Effect	Wilks' Lambda	F	Hypothesis df	Error df	Sig.	Partial eta^2
P	0.70	31.36	2.00	143.00	0.00	.31
P * SF	0.99	0.80	2.00	143.00	0.45	.01

Table 5-24 Between Subjects Effects: Neutral Cues and SF

Source	SS	df	MS	F	Sig.	Partial eta^2
Intercept	3.653	1	3.65	.011	.917	.00
SF	333.640	1	333.64	1.004	.318	.01
Error	47862.707	144	332.38			

There are no significant main or interaction effects of SF, which indicates that the level of SF does not impact how salespeople update ΔCPP in response to neutral customer cues.

3. Negative Cues

In this model, the dependent variable was ΔCPP and the covariate was SF. Factors included in the repeated measures analysis were three levels of P (-1, 0, 1), and two levels of V (-2: strongly negative and -1: moderately negative). The results of the repeated measures MANOVA are as follows:

Table 5-25: Within Subject Effect: ΔCPP, SF and Negative Verbal Cues

ΔCPP			Negative Verbal Cues			
EFFECT	**DF**	**Error DF**	**Wilks Lambda**	**F**	**Sig.**	**Partial eta²**
V	1	144	0.56	114.17	0.00	.44
V x SF	1	144	0.92	13.35	0.00	.09
P	2	143	0.79	18.58	0.00	.21
P x SF	2	143	1.00	0.01	0.99	.00
VP	2	143	0.84	13.69	0.00	.16
VP x SF	2	143	1.00	0.25	0.78	.00

Table 5-26: Between Subjects Effects: ΔCPP, SF and Positive Verbal Cues

Source	Negative Verbal Cues				
EFFECT	**SS**	**MS**	**F**	**SIG.**	**Partial eta²**
Intercept	195304.11	195304.11	325.48	0.00	.69
SF	9754.99	9754.99	16.26	0.00	.10
Error	86407.56	600.05			

There was a main effect for SF and a V x SF significant interaction when only negative verbal cues were considered. This indicates that SF has a relationship with both ΔCPP and these verbal cues. In order to more clearly define this relationship, further follow up repeated measures MANOVA procedures were used, the results of which are as follows:

Table 5-27 Within Subject Effects: Negative Cues at Two Levels and SF

ΔCPP			Strong Negative Verbal Cues				Moderate Negative Verbal Cues			
EFFECT	**DF**	**Error DF**	**Wilks Lambda**	**F**	**Sig.**	**Partial eta²**	**Wilks Lambda**	**F**	**Sig.**	**Partial eta²**
P	2	143	0.88	10.11	0.00	.12	0.73	27.13	0.00	.28
P * SF	2	143	1.00	0.07	0.79	.00	0.99	0.51	0.93	.00

Table 5-28 Between Subjects Effects: Negative Cues at Two Levels and SF

Source	Strong Negative Verbal Cues					Moderate Negative Verbal Cues				
EFFECT	**SS**	**MS**	**F**	**SIG.**	**Partial eta²**	**SS**	**MS**	**F**	**SIG.**	**Partial eta²**
Intercept	205183.56	205183.56	489.12	0.00	.77	29589.04	29589.04	56.23	0.00	.28
SF	475.17	475.17	1.13	0.29	.01	13895.63	13895.63	26.40	0.00	.16
Error	60407.93	419.50				75782.00	526.26			

There was no relationship between the updating of CPP and SF for strongly negative verbal cues. However, there was a main effect difference for SF with respect to

moderately negative cues. Follow up tests on each level of paralanguage revealed that there was a relationship between SF scores and ΔCPP estimates for moderately negative verbal cues when paralanguage is positive, $F_{(1, 144)} = 17.327$, $p < .001$, when paralanguage is neutral, $F(1, 144) = 13.892$, $p < .001$, and when paralanguage is negative, $F_{(1, 144)} = 11.586$, $p < .001$.

To clarify whether higher SF scores were related to appropriate (e.g. decreased CPP values for moderately negative verbal cues) or inappropriate (e.g. increased CPP values for moderately negative cues) changes in CPP, separate regression procedures were used for each of the moderately negative cue levels (e.g. V -1, P -1: V-1, P 0: V-1 P 1). The results of this analysis are as follows:

Table 5-29: Regression Results: Parameter Estimates: SF and Moderately Negative Cues

Variable			Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
V-1 P1	Coefficients	(Constant)	-1.30	1.48		-0.88	0.38
		SF	6.19	1.49	0.33	4.16	0.00
V-1 P0	Coefficients	(Constant)	-12.95	1.36		-9.54	0.00
		SF	5.07	1.36	0.30	3.73	0.00
V-1 P-1	Coefficients	(Constant)	-10.41	1.67		-6.24	0.00
		SF	5.70	1.67	0.27	3.40	0.00

SF is related to lower levels of CPP updating when verbal cues are moderately negative at all levels of paralanguage cues, a result which is in direct contrast to the academic literature predictions. H3DI, which is based on the practitioner literature predictions, is supported.

Summary of Results for H3

SF scores are related to differences in ΔCPP estimates in the case of moderately negative cues. However, rather than the updating being more 'appropriate', which was implied by the academic literature, instead, as SF increases, CPP updating is reduced for these cues: successful salespeople underweight moderately negative cues, as compared to less successful salespeople. This pattern was predicted by the practitioner literature and confirmation bias. Only H3 and H3DI were supported. Thus, there are no significant relationships between *appropriate* updating and SOCO, ADAPTS and SF scores.

5.7 Reaction and SOCO, ADAPTS and SF Scores: Hypothesis Four

Experiment Two required participants to listen to the same stimulus set as Experiment One: each subject was exposed to 15 trials, representing the V (5 levels) and P (3 levels) experimental cues. The order of these trials was randomized after approximately each 10th respondent. Within each trial, there were 8 customer cues, 3 of which contained relevant customer information, and 5 of which were irrelevant statements. The order of the cues remained constant. While listening to the trials, participants would press one of four buttons after each customer statement. Specifically, subjects were asked to press a button which indicated how they would react to each customer statement: would they *continue to listen* to the customer, *respond* to the customer, *try to close the sale*, or *end the transaction.* The button text position was randomized after approximately each 20th respondent.

As discussed in section 2.24, although the academic literature does not specifically predict the reaction of salespeople to customer cues, the literature does suggest that there

is a positive relationship between 'better listening' and sales success, customer orientation and adaptability: salespeople who are more successful and / or have higher SOCO and ADAPTS scores are hypothesized to be better listeners (e.g. more sensitive to customer cues). Thus, when cues become increasingly positive, salespeople with higher SF, SOCO and ADAPTS scores should know that the customer is increasingly likely to purchase, and should therefore attempt to close the sale. Similarly, when cues are increasingly negative, higher score salespeople may increasingly end the transaction with the customer. These response patterns will be referred to as 'appropriate reactions' in this research. There should be a positive relationship between appropriate reactions and SF, SOCO and ADAPTS scores.

The data were analyzed using logistic regression procedures, with the choice category, listen, as the base case. A number of control variables, such as the order in which the cues were presented (cue position 1-8 in each trial) whether or not the customer statement was a relevant or irrelevant cue, order of presentation of trials, button and text position, subject heterogeneity, and other factors were expected to be potential confounds in the results. A sequential logistic fitting procedure[47], as found in Appendix O was used to determine the usefulness of inclusion of these terms in the models. In the following sections, results that pertain specifically to the hypotheses tested are reported, and full model results are available in Appendix P. All stated relationships are made with respect to the logit of the reference category, "listen". Upper and lower bounds of confidence intervals of odds ratios are at 95%. Changes in likelihood refer to changes of

[47] This procedure added main, interaction and quadratic terms, including the context variables, one by one and examining the model fit. If the term improved model fit beyond the critical χ^2 value, it was included.

slope of the estimated logit functions. Additional abbreviations used in the following analyses are as follows:

Table 5-30: Additional Abbreviations in H4

Variable Description	Variable Name
Choice: which of the four buttons chosen after each statement: - choice 1: continue to listen: (base case) - choice 2: respond to the client - choice 3: try to close - choice 4: end the transaction	Choice
Subject number used to control for heterogeneity in model	Subject number
Order of presentation of trials:1-15	Order
Position of each statement: 1-8	Cue position
Location of choice text: 1-4 orders	Button
Indication if the cue was relevant or irrelevant	Signal

H4. Salespeople react appropriately to the verbal and paralanguage content of customer cues.

Logit models are estimated in the form:

$$\text{Choice} = f(\text{ID} + \text{Cue} + \text{Cue}^2 + \text{Order} + \text{Signal} + \text{Cue x Signal} + \text{V} + \text{P} + \text{V}^2 + \text{V x P})$$

Log Likelihood = 1819.977 with 30 df Chi-sq p-value = 0.000
McFadden's Rho-Squared = 0.165[48]

The results that are relevant to this hypothesis are as follows:

1. Close

Table 5-31: Relevant Results for Estimated Logit of Close: No Covariates

Parameter	Estimate	S.E.	t-ratio	p-value	Odds Ratio	Upper	Lower
V	0.87	0.08	10.71	0.00	2.38	2.77	2.04
P	0.40	0.14	2.94	0.00	1.49	1.94	1.14
V^2	0.32	0.06	5.17	0.00	1.37	1.55	1.22
V*P	0.49	0.09	5.22	0.00	1.62	1.95	1.35

The significant results for verbal indicate that as verbal cues become more positive, 'closing' increases in likelihood, (increased slope) as compared to 'listening'.

[48] The McFadden Rho Squared is the most conservative of the strength of association for a model estimates, and may tend to underestimate the model, (Tabachnick and Fidell, 2001). Values over .2 are considered highly satisfactory.

The significant V x P interaction suggests that as paralanguage becomes more positive, the likelihood of choosing to close at more positive verbal cues also increases (e.g. at each increasing level of paralanguage, the estimated logit function becomes steeper as verbal cues become more positive). The literature predicts that as the positivity of cues increase, the likelihood of closing will also increase. H4 is supported.

2. End

Table 5-32: Relevant Results for Estimated Logit of End: No Covariates

Parameter	Estimate	S.E.	t-ratio	p-value	Odds Ratio	Upper	Lower
V	-0.35	0.11	-3.33	0.00	0.70	0.86	0.58
P	-0.13	0.19	-0.65	0.51	0.88	1.28	0.60
V^2	0.47	0.08	5.71	0.00	1.61	1.89	1.36
V*P	0.46	0.12	3.93	0.00	1.62	1.95	1.35

As verbal cues become more positive, the likelihood of ending the transaction decreases: (a downward sloping logit function). There is a significant quadratic effect for V, indicating that the estimated logit function is non-linear (e.g. slope of function increases as verbal cues become more extreme). The significant V x P interaction indicates that as paralanguage becomes more negative, the likelihood of ending at more negative verbal cues increases. This supports H4.

Summary of H4:

The results for end and close indicate that salespeople are appropriately updating as a function of verbal and paralanguage cues. H4 is supported.

H4A: Appropriate reaction to the verbal and paralanguage content of customer cues is positively related to sales success. (SF)

In addition to H4A, another hypothesis will also be forwarded because the practitioner literature specifically predicts a positive relationship between SF and closing. This hypothesis will be tested in the same logit procedure as H4A, however, the following hypothesis requires significant results for only for closing for support. Thus:

H4AI: There is a positive relationship between sales success and choosing to close.

The logit model specified for H4A and H4AI was as follows:

Choice = f(SF + ID + Order + Cue position + Signal + V + P + V^2+ Cue position^2 + V x SF + P x SF + Cue x Signal + V x P)

Log Likelihood = 2000.27 with 39df Chi-sq p-value =0.000
McFadden's Rho-Squared = 0.181

The logit results for the category, close, are as follows:

1. Close

Table 5-33: Relevant Results for Estimated Logit of Close: SF Covariate

Parameter	Estimate	S.E.	t-ratio	p-value	Odds Ratio	Upper	Lower
SF	0.67	0.08	8.67	0.00	1.96	2.29	1.69
V*SF	-0.14	0.07	-1.93	0.05	0.87	1.00	0.76
P*SF	0.01	0.13	0.07	0.95	1.01	1.29	0.79
V	0.87	0.08	10.71	0.00	-0.14	0.07	-1.93
P	0.45	0.14	3.13	0.00	0.01	0.13	0.07
V^2	0.35	0.06	5.62	0.00	1.42	1.61	1.26
V*P	0.49	0.10	5.19	0.00	1.63	1.97	1.36

As SF scores increase, the likelihood of choosing to close as compared to listen also increases. This supports H4AI. The significant V x SF interaction indicates that as verbal cues and success scores both become more positive, the likelihood of choosing to close decreases (decreasing slope of logit function as verbal and SF scores increase). A

decreasing slope of the logit is indicative that, as SF increases, participants are less sensitive to verbal cues. Thus, this result does not support H4A.

2. End

Table 5-34: Estimated Results for Logit of End: SF Covariate

Parameter	Estimate	S.E.	t-ratio	p-value	Odds Ratio	Upper	Lower
SF	0.03	0.13	0.25	0.80	2.39	2.80	2.04
V*SF	-0.29	0.09	-3.40	0.00	0.75	0.88	0.63
P*SF	0.11	0.14	0.78	0.44	1.11	1.45	0.85
V	-0.36	0.11	-3.38	0.00	0.70	0.86	0.56
P	-0.14	0.19	-0.71	0.49	0.87	1.27	0.60
V^2	0.47	0.08	5.62	0.00	1.61	1.89	1.36
V*P	0.45	0.12	3.82	0.00	1.58	1.99	1.25

The significant V x SF interaction indicates that as verbal cues and success scores both become more positive, the likelihood of choosing to end decreases. The P x SF interaction suggests that as SF and paralanguage cues become more positive, the likelihood of ending increases, which is in direct conflict with the hypothesis. Although the P x SF relationship does not support H4, the SF and V x SF interaction are consistent with the hypothesis. This hypothesis has partial support.

Summary of H4A and H4AI:

H4AI is supported: as SF scores increase, the likelihood of choosing to close, as compared to listen, increases. H4 was not supported for the choice category, close, and was partially supported with the results from the choice category, end.

H4B: Appropriate reaction to the verbal and paralanguage content of customer cues is positively related to customer orientation. (SOCO)

The logistic model for this test was specified:

Choice = f(SOCO + ID + Order + Cue position + Signal + V + P + V^2+ Cue position^2 + V x SOCO + P x SOCO + Cue x Signal + V x P)

Log Likelihood = 1932.44 with 39 df Chi-sq p-value = 0.000
McFadden's Rho-Squared = 0.175

The results for the category, close, compared to listen, are as follows.

1. Close

Table 5-35: Relevant Results for Estimated Logit of Close: SOCO Covariate

Parameter	Estimate	S.E.	t-ratio	p-value	Odds Ratio	Upper	Lower
SOCO	0.47	0.07	6.42	0.00	1.61	1.86	1.39
V*SOCO	0.04	0.07	0.54	0.59	1.04	1.19	0.90
P*SOCO	-0.14	0.13	-1.12	0.26	0.87	1.11	0.68
V	0.86	0.08	10.91	0.00	2.36	2.76	2.03
P	0.43	0.14	3.07	0.00	1.53	2.01	1.17
V^2	0.33	0.06	5.39	0.00	1.40	1.58	1.24
V*P	0.50	0.09	5.35	0.00	1.65	1.98	1.37

There is a significant main effect for SOCO, indicating that likelihood of choosing to close, as compared to listen, increase as SOCO scores increase. There are no other significant terms relevant to the hypothesis. This suggests that higher SOCO scores are not associated with more appropriate reactions, thus H4B is not supported for the choice category, close.

2. End

Table 5-36: Relevant Results for Estimated Logit of End: SOCO Covariate

Parameter	Estimate	S.E.	t-ratio	p-value	Odds Ratio	Upper	Lower
SOCO	-0.15	0.12	-1.25	0.21	0.86	1.09	0.67
V*SOCO	-0.29	0.09	-3.36	0.00	0.75	0.89	0.63
P*SOCO	-0.12	0.14	-0.84	0.40	0.89	1.17	0.68
V	-0.44	0.12	-3.79	0.00	0.64	0.81	0.51
P	-0.17	0.20	-0.85	0.40	0.85	1.25	0.58
V^2	0.44	0.09	5.13	0.00	1.55	1.83	1.31
V*P	0.44	0.12	3.67	0.00	1.55	1.97	1.23

As SOCO scores increase, the likelihood of ending compared to listening decreases. As verbal cues and SF scores become more positive, there is a reduced likelihood of choosing to end. H4B is supported for the choice category, end.

Summary of H4B:

The results for the choice category, close, do not support H4B. The results for the choice category, end, support H4B. Thus, H4B is partially supported.

H4C: Appropriate reaction to the verbal and paralanguage content of customer cues is positively related to adaptability. (ADAPTS)

The logit model was specified as follows:

Choice = f(ADAPTS + ID + Order + Cue position + Signal + V + P + V^2+ Cue position^2 + V x ADAPTS + P x ADAPTS + Cue x Signal + V x P)

Log Likelihood = 2330.44 with 39 df Chi-sq p-value = 0.000
McFadden's Rho-Squared = 0.211

1. Close

Table 5-37: Relevant Results for Estimated Logit of Close: ADAPTS Covariate

Parameter	Estimate	S.E.	t-ratio	p-value	Odds Ratio	Upper	Lower
ADAPTS	1.41	0.09	16.17	0.00	4.08	4.84	3.44
V*ADAPTS	-0.23	0.08	-2.77	0.01	0.80	0.94	0.68
P*ADAPTS	0.02	0.14	0.12	0.90	1.02	1.34	0.77
V	0.98	0.09	10.80	0.00	2.66	3.18	2.23
P	0.54	0.16	3.42	0.00	1.72	2.34	1.26
V^2	0.38	0.07	5.87	0.00	1.46	1.66	1.29
V*P	0.52	0.10	5.26	0.00	1.68	2.04	1.38

As ADAPTS scores increase, there is an increased likelihood of choosing to close, compared to listen. The V x ADAPTS interaction indicates that as paralanguage cues and ADAPTS scores increase, the likelihood of choosing to close is reduced. H4C is not supported for the choice category, close.

2. End

Table 5-38: Relevant Results of Estimated Logit of End: ADAPTS Covariate

Parameter	Estimate	S.E.	t-ratio	p-value	Odds Ratio	Upper	Lower
ADAPTS	0.03	0.14	0.22	0.83	1.03	1.35	0.79
V*ADAPTS	0.19	0.13	1.49	0.14	0.78	0.94	0.65
P*ADAPTS	-0.25	0.10	-2.64	0.01	1.15	1.53	0.87
V	-0.39	0.11	-3.59	0.00	0.68	0.84	0.54
P	-0.12	0.19	-0.60	0.55	0.89	1.30	0.61
V^2	0.47	0.08	5.65	0.00	1.61	1.89	1.36
V*P	0.45	0.12	3.79	0.00	1.57	1.98	1.24

There is a significant interaction for P x ADAPTS, indicating that as both verbal cues and ADAPTS scores increase, the likelihood of choosing to end a transaction increases. These results support H4C.

5.8 Summary of Hypotheses Results and Literature Implications

H1: Sales success is positively related to CPPP estimates.

This hypothesis was supported: as SF scores increased, initial estimates of customer purchase probabilities also increased. The practitioner literature predicts that as sales success increases, CPPP estimates will also increase. The results of this hypothesis support the predictions of the literature.

H2A: Sales success (SF) is positively related to discrimination levels.

This hypothesis was supported. As SF scores increased, the ability to discriminate between relevant and irrelevant customer cues also increased. The academic literature suggests that as sales success increases, listening skills, which include the ability to discriminate between relevant and irrelevant cues (sensing) improves. These results support the predictions of the academic literature.

H2B: SOCO is positively related to discrimination levels.

This hypothesis was supported. As SOCO scores increased, the ability to discriminate between relevant and irrelevant customer cues also increased. The academic literature suggests that as customer orientation increases, listening skills, which include the ability to discriminate between relevant and irrelevant cues (sensing) improve. These results support the predictions of the academic literature.

H2C: ADAPTS scores are positively related to higher discrimination levels.

This hypothesis was supported. As ADAPTS scores increased, the ability to discriminate between relevant and irrelevant customer cues also increased. The academic

literature suggests that as adaptability increases, listening skills, which include the ability to discriminate between relevant and irrelevant cues (sensing) improve. These results support the predictions of the academic literature.

H3A: Salespeople appropriately update their CPP (ΔCPP) as a function of a customer's verbal and paralanguage cues.

This hypothesis was supported: salespeople generally appropriately updated as a function of verbal and paralanguage cues. By implication, the practitioner and academic literatures predict that salespeople will listen to customer cues, and estimate customer purchase probability based on those cues. These results support the predictions of the literature.

H3B. Appropriate updating of CPP (ΔCPP) as a function of a customer's verbal and paralanguage cues is positively related to SOCO scores.

This hypothesis was not supported. There is no relationship between appropriate updating and SOCO scores. The academic literature predicts that as customer orientation increases, listening skills and by implication, CPP estimation, will be more appropriate. The results do not support the literature.

H3C. Appropriate updating of CPP (ΔCPP) as a function of a customer's verbal and paralanguage cues is positively related to ADAPTS scores.

This hypothesis was not supported. There is no relationship between appropriate updating and ADAPTS scores. The academic literature predicts that as adaptability

increases, listening skills and by implication, CPP estimation, will be more appropriate. The results do not support the literature.

H3D. Appropriate updating of CPP (ΔCPP) as a function of a customer's verbal and paralanguage cues is positively related to SF scores.

This hypothesis was not supported: there is no relationship between appropriate updating and SF scores. The academic literature predicts that as sales success increases, listening skills and by implication, CPP estimation, will be more appropriate. The results do not support the literature.

H3DI: There is a negative relationship between SF scores and updating CPP (ΔCPP) when customer cues are moderately negative.

This hypothesis was supported: as SF increases, there is less updating of CPP as a function of moderately negative cues. The practitioner literature predicts that as sales success increases, there will be a negative relationship with ΔCPP estimates for moderately negative cues (objections). The results support the literature.

H4. Salespeople react appropriately to the verbal and paralanguage content of customer cues.

This hypothesis was supported: for both the choice categories close and end, verbal and the interaction of cues verbal and paralanguage cues have a significant impact on appropriate choice. The literature predicts that salespeople will react appropriately to customer cues. The results support the literature.

H4A: Appropriate reaction to the verbal and paralanguage content of customer cues is positively related to sales success. (SF)

This hypothesis was supported for the choice category, end, but was not supported for the choice category, close. For the choice category, close, as verbal cues and SF scores increased, the slope of the estimated logit function decreased, indicating a reduced sensitivity to cues. The academic literature predicts a greater sensitivity to cues as sales success increases. The results partially support the literature.

H4AI: There is a positive relationship between sales success and choosing to close.

This hypothesis only considers the choice category, close. This hypothesis was supported: as SF scores increased, the slope of the estimated logit function increased. The practitioner literature predicts that as sales success increases, closing will increase. The results support the practitioner literature.

H4B: Appropriate reaction to the verbal and paralanguage content of customer cues is positively related to customer orientation. (SOCO)

This hypothesis was not supported for close as there were no V x SOCO or P x SOCO significant interactions. Instead, there was a main effect for SOCO, indicating that as SOCO scores increase, the likelihood of choosing to close increase. This pattern is more consistent with the 'Close Under Any Circumstances' proposition and is similar to the results predicted in H4AI. The results for end support the hypothesis. The academic literature predicts greater sensitivity to customer cues as SOCO scores increase. The results partially support H4B and the academic literature.

H4C: Appropriate reaction to the verbal and paralanguage content of customer cues is positively related to adaptability. (ADAPTS)

For close, there was a significant main effect for ADAPTS, indicating that the likelihood of choosing to close increased as ADAPTS scores increase. This is consistent with the 'Close Under All Circumstances' proposition and is similar to the results obtained for H4AI. The significant V x ADAPTS interaction indicates that as ADAPTS scores increase and verbal valence becomes more positive, the slope of the logit decreases. This indicates that higher ADAPTS scores are associated with less sensitivity to customer cues. This result does not support H4C.

For end, there was a significant P x ADAPTS interaction, indicating an increased slope of the logit function as ADAPTS and P scores increase. This implies that higher ADAPTS scores are associated with increased sensitivity to paralanguage cues. Thus, H4C was not supported for close, but was supported for end.

CHAPTER 6 DISCUSSIONS AND CONCLUSIONS

6.1 INTRODUCTION

This research proposes a framework of sales communication, the SESER Model of Sales Communication, and empirically tests certain aspects of the model. This model was based on a review of the communication literature, which suggests that a number of factors impact communication optimization. These factors include message strength, message consistency and other transmitter and receiver characteristics. The literature also suggests partitioning of 'listening' into four separate processes: estimating, sensing, evaluating and reacting. The SESER framework which addressed these factors was applied to the sales context and two experiments tested specific aspects of the model, as follows.

6.2 EXPERIMENTAL RESULTS

This research empirically tested the general marketing literature proposition that successful salespeople are better listeners. In particular, the literature set out a positive relationship between sales success (SF) and effective listening. In addition, the SOCO and ADAPTS literatures suggest that successful salespeople are customer-oriented and adaptive to customers. In order to adapt or be customer oriented, the salesperson would have to first accurately acquire information from the customer. By implication, as sales success, customer orientation and adaptability increase, the ability to 'estimate, sense, evaluate and react' should be better.

The empirical results show mixed support for these propositions. First, with respect to estimation, initial judgments of customer purchase probability were tested for their relationship with sales success. Here, it was found that successful (SF) salespeople estimate a higher customer purchase probability (CPPP): they think a sale is more likely. This effect may be as a result of the operations of an availability and / or positive confirmation bias. This effect was predicted by the practitioner literature.

Second, the relationship between SF, SOCO and ADAPTS scores and the ability to discriminate between relevant and irrelevant customer cues was tested (sensing). The result show that as SF, SOCO and ADAPTS scores increase, the discrimination was better. This result is consistent with the predictions from the literature.

Third, the relationship between SF, SOCO and ADAPTS scores and the appropriate updating of customer purchase probability estimates as a function of customer cues was tested (evaluation). There were no relationships between SOCO and ADAPTS scores and evaluation skill. However, with respect to SF scores, it was found that as SF increased, evaluation was not more appropriate, but instead, in the case of moderately negative verbal cues, successful salespeople underweighted these cues as compared to less successful salespeople. These results are consistent with the predictions of the practitioner literature. Successful salespeople are not more appropriate 'evaluators'.

Fourth, the proposition that increased SF, SOCO and ADAPTS scores were positive related to appropriate reactions as a function of customer cues was tested. Salespeople could choose from four reaction choices: listen, respond, end and close. The literature predicted that there would be more 'appropriate' responses for the categories of

end and close: higher score salespeople would close more when verbal and paralanguage cues increased in valence, and end more when verbal and paralanguage cues decreased in valence. Although appropriate reactions were supported for ending, when SF, SOCO and ADAPTS scores were used as covariates, an interesting pattern occurred with respect to the choice category, close. No matter which of the covariates was used, as scores increased, the likeliness of choosing to close increased, irrespective of the nature of the cues. This result was predicted by the practitioner literature for SF but was not anticipated for SOCO or ADAPTS measures. As SF, SOCO and ADAPTS scores increase, salespeople appear to use a 'Close Under All Circumstances' approach to reaction. This result is contrary to the predictions of the academic literature.

The strategy of "Closing Under All Circumstances" may, in fact, be a way to elicit more information from a potential purchaser. If the salesperson is unsure whether or not the customer is ready to purchase, attempting a 'trial close' will likely either garner agreement to purchase, or further objections to be addressed. Alternatively, if the customer has no intention of purchase, it is likely the customer will indicate this when the 'trial close' is attempted. Under the conditions of the trial close, the salesperson will either achieve purchase, more information about objections, or an effective ending of the transaction by the customer. One way or the other, the salesperson will become more certain of the customer purchase probability and will be more able to determine which further reactions are most appropriate, given this new information. "Closing Under All Conditions", therefore, appears to be an efficient strategy under most circumstances, and the data show that higher score salespeople tend to use this technique more often than lower score salespeople.

6.3 IMPLICATIONS OF FINDINGS

There are a number of limitations, validity issues and boundary conditions that may impact the results of this study, as will be addressed below. However, if the findings of these experiments accurately reflect the reality of sales communications, there are a number of implications that arise from the results, as follows.

I. SESER Framework of Communication.

First, it has been shown that in the sales context, salesperson listening is comprised of four parts: estimate, sense, evaluate and react. The SESER framework explicitly recognizes these steps, and also includes considerations of signal strength, multiple message components, and the specific characteristics of the transmitters and receivers, in order to accurately portray the variables that impact the optimization of communication. Because of these modifications, the SESER framework may provide a more specific and testable model which can be used to study aspects salesperson listening abilities.

II. Implications of Hypothesis Findings

The current literature on listening in the sales context proposes that there is a positive relationship between sales success, (SF), SOCO and ADAPTS and effective communication. Once sales communication is partitioned into estimate, sense, evaluate and react, this relationship is not as clear. In particular, although higher scores are related

to more effective discrimination between relevant and irrelevant cues, there are mixed results for relationships between higher scores and the evaluation and reaction components of listening. More specifically, with respect to appropriate evaluations, as sales success (SF) increases, those salespeople underweight objections: they "don't take no for an answer", as suggested by the practitioner literature. There are no other differences evident for evaluations: higher SF, SOCO and ADAPTS scores are not associated with more appropriate evaluations. With respect to reactions to customer cues, although higher SF and SOCO scores are associated with more appropriate transaction ending, higher SF, SOCO and ADAPTS scores are also associated with the 'Closing Under all Circumstances' proposition, irrespective of the nature of the customer cues.

The results for evaluation may be partially explained by a number of factors. Reconsidering the demographic data collected from the participants, one of the questions asked was how confident the salesperson was in terms of being able to deal with customer objections or moderately negative cues. As SF, SOCO and ADAPTS scores increased, salespeople significantly differed in their responses to this question: salespeople with higher scores were more confident that they could overcome customer objections. It may be that as a result of this confidence, **not** decreasing CPP estimates seems reasonable and justifiable. This issue will researched in the next experiment by asking for confidence ratings after each customer cue.

The limited support for the relationship between SF, SOCO and ADAPTS and appropriate reactions is more difficult to explain. Although the literature predicts that as scores increase reactions should be more appropriate there was mixed support for this prediction in these results. There may be several reasons for these results. First, because

participants were exposed to an artificial communication setting, they may have reacting in a way that does not represent what they would do in a real communication situation. It may also be that because there was no possibility of repeat or referral business with the computerized 'customer', participants simply did not choose to be adaptive or customer oriented. In particular, the SOCO and ADAPTS literature, as described earlier, suggests that when the probabilities of repeat or referral business is high, customer oriented and adaptive behaviors are more likely.

Alternatively, all of the results may be influenced by an unrepresentative sample. In particular, the participants generally had relatively high incomes: the lower income participants may have been under-represented, and this may have impacted the results. Further, the average house value reported by the typical respondent was 250,000 – 300,000, whereas the Canadian Real Estate Association estimate was 200,000- 250,000[49]. Participants who dealt with lower priced properties may have been under-represented and this factor may have impacted the results. There may also have been self-selection of participants: perhaps those realtors who completed the tasks had some common personal characteristic such as motivation or curiosity which was not measured in this research. Finally, the sample may have been unrepresentative of lower success levels, since no testing was done of agents who had actually left the real estate business. If, however, the results were not impacted by these types of experimental artifacts, it may be that, with the exception of sensing, the academic literature does not sufficiently predict the relationships between estimating, evaluation and reactions and increasing SF, SOCO and ADAPTS scores. Specifically, the results of these experiments have implications for the current literature, as follows.

[49] Http://www.crea.ca

Next, the implications for academic predictions of listening and sales success will be addressed. A summary of the results for sales success is as follows: as sales success (SF) increases, estimations of initial purchase probabilities are higher, discrimination (sensing) between relevant and irrelevant customer cues is better, there is an underweighting of moderately negative cues when updating purchase probabilities (evaluation), there is less of a likelihood of ending a transaction, and more of a likelihood of closing under all circumstances, (reaction). Do these results imply 'better listening' as sales success increases? If the definition of 'better listening' is a bona fide attempt by the salesperson to determine exactly what the customer is trying to communicate as a function of his or her cue content, and updating and reacting in a manner that is only reflective of these cues, (the academic definition of better listening), then successful salespeople are not 'better listeners'. Instead, successful salespeople seem biased in their listening behaviors: they initially think sales are more likely, even though they have not heard what the customer has to say, they underweight moderately negative cues, and they close under all conditions of customer cues. The fact that successful salespeople are better able to discriminate between relevant and irrelevant cues, but still choose to underweight moderately negative cues further indicates 'listening bias'. In addition, the fact that successful salespeople they are less likely to choose to end than less successful salespeople may be due to 'better listening' or, instead, it may simply be more some form of 'sales opportunism': they will not give up on a potential sale if there is even a slight chance of success. Although the causal relationship between these 'biased' listening behaviors and a greater number of sales cannot be determined from the results of these experiments, it appears that if sales success and 'better' listening in a sales context are

hypothesized to be positively related, then 'better' listening should be redefined as 'listening which leads to sales success", (the alternative definition), rather than the academic definition of 'better' employed in the literature.

Next, the implications for academic predictions of listening and customer orientation (SOCO) will be addressed. A summary of the results for SOCO is as follows: as SOCO scores increase, the ability to discriminate between relevant and irrelevant cues increases (sensing), the likeliness of closing increases under all conditions and the likeliness of ending when cues become increasingly positive decreases, (reaction). If the academic definition of 'better listening' is employed, the results for discrimination and ending transactions appear to support the positive relationship between SOCO and better listening. However, the increased likeliness of choosing to close under all circumstances contradict this relationship, particularly since closing when the customer is 'not ready to purchase' is contrary to how a customer oriented salesperson is likely to react: such a salesperson would not react in this way for fear of 'increased customer dissatisfaction and reduced probability of returning to the selling organization', (Saxe and Weitz, 1982; Sharma, 1997). These apparently contradictory results are more consistent with the alternative definition of 'better listening' is employed: (listening that leads to sales), even those this definition is incompatible with the SOCO research. Higher SOCO salespeople are aware of which cues are relevant to customer purchase probabilities, but choose to close more frequently, and end less as cues become more positive: behaviors which may lead to a greater number of sales. Again, although the causal relationship between greater sales and these behaviors cannot be shown from these results, the alternative definition of listening appears to be more reflective of these data.

The ADAPTS results are similar. Adaptability is the "altering of sales behaviors during a customer interaction or across customer interactions based on perceived information about the nature of the selling situation", (Weitz, Sujan and Sujan, 1986). A summary of the results for ADAPTS is as follows: as ADAPTS scores increase, discrimination between relevant and irrelevant cues is better, but high ADAPTS salespeople are less sensitive to increasing positive cues when choosing to end, and close more under all circumstances. Again, the listening behaviors of higher ADAPTS salespeople appear to be biased, in line with the alternative definition of better listening. Technically, salespeople could adapt to a customer, but still close more: they may be adapting the actual words or closing techniques used for each customer (they likely have a much more extensive and polished variety of these techniques), but do not adapt their likeliness of closing as a function of customer cues. The old adage, 'a wolf in sheep's clothing is still a wolf', may be an appropriate analogy here.

Most generally, higher levels of sales success, SOCO and ADAPTS tend to be associated with biased listening behaviors rather than 'better' listening behaviors: these salespeople act like 'sales opportunists': although recognizing the relevance of cues, they tend to react in a way that does not reflect the nature of the customer cues. Again, the causal relationship between greater sales and greater frequency of closing and reduced frequency of ending has not been empirically researched, although the practitioner literature does suggest that those salespeople who are more successful simply close more, (e.g. Prus, 1989).

Of course, there are likely many boundary conditions and limitations of the findings of this research, and significantly more studies will have to be completed to

validate these results before these findings can be proven conclusively. However, if these results are correct, there are a number of managerial implications that arise from this study, as follows.

6.4 Managerial Implications

Assuming the results found in this research are accurate, sales training programs, sales management books and textbooks must carefully consider statements about the relationship between sales success and listening skills. On one hand, these sources advise: 'the effective salesperson listens to his or her customer', (e.g. Manning and Reece, 2001, Kennedy, 1999). On the other hand, often in the same chapter, the next advice is "but don't take no for an answer". This research implies that salespeople with higher SF scores tend to underweight negative cues, as compared to lower score salespeople. But presumably, successful salespeople don't simply ignore objections. Successful salespeople may respond to moderately negative cues, but because of their confidence levels in dealing with objections, do not update CPP as a result. At the very least, training programs and manuals must continue to emphasize the importance of 'dealing with objections', and not to overemphasize 'listening to the customer' without identifying this distinction.

In addition, this research provides strong support for the fact that as SF, SOCO and ADAPTS scores increase, closing also increases. Although the practitioner advice of 'close, close, close' has often been repeated, the empirical results appear to support the anecdotal position. Again, however, care must be taken to ensure the appropriate closing techniques are used, as it is unlikely that rigidly fixed closing scripts will maximize sales.

There are also a number of other practical managerial implications of this research. First, since trial closing appears to be a method of eliciting information about objections, as described on page 104, salespeople should attempt to close more frequently. These attempts, however, must be made in a way which takes into account the nature of the sales context, including customer characteristics, purchase type, and other contextual variables. Attempting to elicit objections necessitates having some responses ready to deal with those objection: it is likely that more successful salespeople are able to react and solve the particular objections. Fixed or canned closing techniques are likely to be inappropriate under these circumstances.

Second, in addition to the use of SOCO and ADAPTS, the Perceptual Chronograph testing method could be used for salesperson training and selection. With respect to training, current lower score salespeople could undergo the testing procedures and compare their results to those of higher score salespeople. The results of the higher score salespeople could be described, and the lower score salesperson could be retrained using this tool. This process could iterate until the testing results are satisfactory. This use would require a customization of the Perceptual Chronograph, as there are likely industry or company specific customer verbal and paralanguage cues that arise in each case. For example, listening strategies in the instances of relationship selling are likely to be different than for one-time-only purchase situations. Baseline data for successful salespeople of a specific industry could be collected, and used for this training. The methodology will remain constant over all sales transactions, even if the specific cues and listening strategies vary.

Further, this testing method could provide selection information for hiring new salespeople: managers could select new hires on the basis of SOCO, ADAPTS, and the responses to the Perceptual Chronograph. A longitudinal study could be performed to see if those novice salespeople who show patterns of responses that coincide more closely with those patterns of 'successful' salespeople in the industry are generally more successful over the long run, as well as whether or not these response patterns can actually be trained for salespeople whose responses are less consistent.

Not only will this method be useful in the training of salespeople, but also will be useful in any number of communication settings where estimation, sensing, evaluation and reaction are an important part of the listening behaviors of the receiver. Applications in medical diagnostics, court proceedings, or any number of other applications are anticipated. Again, after baseline data is compiled from the 'best performers' in a particular context, other listeners can be trained or selected for similar listening patterns. Thus, the general form of the SESER model of sales communication may have widespread usage possibilities and may prove to be an important research tool in the future.

6.5 Limitations and Future Research

I. Limitations

Besides the considerations described above, there are a number of other limitations of this research. First, this research may not be generalizable for a number of reasons. First, only certain cues were selected. It may be that different cue sets would produce different results. Second, only real estate agents from a prosperous market in

Canada were included in this study. Because there was a high demand for property at that time, participants may have acted in a way that reflected the ease of selling under those conditions. These results may not be representative of behavior if market conditions were poor. Third, results for other types of salespeople may also be different. Fourth, as described earlier, the artificial experimental setting may have impacted the results. Finally, this research only addresses certain aspects of the SESER framework and thus the entire model is not supported.

II. Future Research

There are a number of directions for future work in this area. First, because successful salespeople tend to underweight moderately negative cues, a number of experiments can be anticipated. First, a number of different moderately negative cues should be tested to try to identify where the boundary conditions of this effect are. Specifically, it should be determined at what point a moderately negative cue moves from an objection that can be responded to, into an objection that would cause CPP estimates to decrease.

Second, and relatedly, rather than asking salespeople what they would do in response to a moderately negative cue, two other procedures could be used. First, after the cue presentation, rather than asking for a response, the participants could be asked how confident they were that the objection could be overcome, and then estimate an updated CPP. In this way, confidence and updating could be more closely linked. An alternative procedure would be to ask participants to type in what they would actually say

or do in response to client statements: this would alleviate the possibility that because the response choices were finite, the salespeople all responded in a similar manner. This method would also give more information about types of responses and how these vary by sales success.

This research did not consider the situation where a customer changes his or her opinion about purchase within the same transaction: all of the valences of the cues were consistent in order to get a baseline from which to proceed to further research. Changing cue valences over the course of a 'conversation' and determining the effect on final CPP is also an area for future research.

This research did not consider the relationship between verbal, paralanguage and visual cues. To start, a picture of a client could be added to the experimental manipulation. Effects of the visual cue could be measured. Then, rather than only a picture, video feed of a customer talking could be included. Care would have to be taken to pretest these cues to avoid experimental confounds. These procedures would determine which of the three channels of communication, visual, verbal and paralanguage has impact on which of the four SESER steps: it is likely that visual cues will have the largest impact on the estimation function, and that the evaluation and response phases of communication will be adjusted as against this anchor, rather than being dependent only on actual customer cues during the communication, (e.g. Hartley, 1999).

Next, the actual voice for presentation of the cue could be varied. In this set of experiments, the same voice was used for each customer. Some previous literature has shown that even the accent of the communicator impacts the evaluation of message content, (Tsalikis et al, 1991). The issue of vocal characteristics, and more generally,

source (customer) credibility should be addressed further, (e.g. Sternthal et al, 1978). Further, other aspects of customer differences could be explored: the effect of gender, accent, style of speech and other communication style differences could be manipulated. Cross-cultural and cross gender differences could be examined.

There are a number of other studies that will be completed once these baseline studies are completed. Specifically, when large items are purchased there are often other people talking in the transaction: a wife and husband, for example, come to see the house. Which does the salesperson listen to, particularly if the communication conflicts? The effect of the presence of others may also be investigated, (e.g. Dahl, Manchanda, Argo, 2001). Other studies involving the interaction of more than one customer and the salesperson can be envisioned.

In summary, this research has tested the proposed positive relationships between sales success, SOCO, ADAPTS and listening skills. Although there is support that salespeople who are higher on these scores are better at sensing customer cues, there is mixed support for salesperson differences on evaluation and reaction. If these results are reflective of reality, the literature that proposes that sales success, SOCO and ADAPTS scores are positively related to listening skills may need to be re-examined. The SESER Framework of Sales Communication provides an empirically testable place to start.

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APPENDIX A. HOUSE DESCRIPTIONS (N=10)

Procedure:

In this pretest, the researcher presented herself at local real estate agencies and asked the receptionist if there were any agents available to participate in some research she was completing for her Ph.D. at the University of Alberta.

If the receptionist indicated that there were agents available, the researcher asked the agent if they would participate in a short experimental task. The researcher explained that the task was to read some house descriptions, and rate their desirability for customers, based only on what the agent read, on a scale from 0-100, where 0 was the least desirable house and 100 was the most desirable house. The researcher also explained that the city, and address had been not properly identified, in order to ensure that only the information displayed was used to rate the desirability. The research also explained that there was some demographic information that she wanted to collect. If the agent agreed (see Appendix F), the agent completed the task, (below and Appendix C), was debriefed and thanked. The following, (without the average rating), is the task the agent completed.

Please rate the desirability of these houses, where 0 is the least desirable and 100 is the most desirable.

1. Rating out of 100: _____ Average rating: 80 (s.d. 5.27)

ADDRESS: 49 Deerlain Crescent
PRICE: 199,500
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 1, Half: 1
ZONING: Planned Lot Residential
REGION: City 12
BASEMENT: Partially finished
FEATURES: Shopping, public transit, schools nearby, landscaped, fenced

2. Rating out of 100: _____ Average rating: 82 (s.d. 4.86)

ADDRESS: 25 Aspen Drive
PRICE: 199,900
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 1, Half: 1
ZONING: Planned Lot Residential
REGION: City F
BASEMENT: Partially finished
FEATURES: Shopping, public transit, schools nearby, landscaped, fenced.

3. Rating out of 100: _____ Average rating: 80 (s.d. 3.33)

ADDRESS: 604 Greily Crescent
PRICE: 201,900
LISTING TYPE: Residential

BEDROOMS: 3
BATHROOMS: Full: 2, Half: 0
ZONING: Planned Lot Residential
REGION: City V
BASEMENT: Partially finished
FEATURES: Public transit, schools nearby, partially landscaped, fenced

4. Rating out of 100: _____ Average rating: 58 (s.d. 9.70)

ADDRESS: 99 Groverville Road
PRICE: 199,999
LISTING TYPE: Residential
BEDROOMS: 1
BATHROOMS: Full: 1
ZONING: Planned Lot Residential
REGION: City 21
BASEMENT: unfinished
FEATURES: Shopping, public transit, schools nearby.

5. Rating out of 100: _____ Average rating: 84 (s.d. 3.05)

ADDRESS: 85 Range Ridge
PRICE: 198,900
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 1, Half: 1
ZONING: Planned Lot Residential
REGION: City 7
BASEMENT: Finished
FEATURES: Schools, shopping, public transit, landscaped, fenced.

6. Rating out of 100: _____ Average rating: 80 (s.d. 3.33)

ADDRESS: 13 Jade Avenue
PRICE: 199,900
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 2, Half: 0
ZONING: Planned Lot Residential
REGION: City 20
BASEMENT: Finished
FEATURES: Shopping, public transit, schools, fenced, treed lot.

7. Rating out of 100: _____ Average rating: 80 (s.d. 2.40)

ADDRESS: 1098 Newman Downs
PRICE: 198,900
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 2, Half: 0
ZONING: Planned Lot Residential
REGION: City 3
BASEMENT: undeveloped
FEATURES: Shopping, public transit, schools nearby, extensively landscaped, fenced.

8. Rating out of 100: _____ Average rating: 80 (s.d. 2.38)

ADDRESS: 85 Holland Avenue
PRICE: 197,000
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 1, Half: 1
ZONING: Planned Lot Residential
REGION: City T
BASEMENT: Finished
FEATURES: Shopping, public transit, landscaped, fenced.

9. Rating out of 100: _____ Average rating: 81 (s.d. 1.7)

ADDRESS: 200 Excalibur Street
PRICE: 197,900
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 1, Half: 1
ZONING: Planned Lot Residential
REGION: City 4
BASEMENT: Finished
FEATURES: Shopping, public transit, fully landscaped, fenced.

10. Rating out of 100: _____ Average rating: 83 (s.d. 1.78)

ADDRESS: 18 Hawthorne Crescent
PRICE: 199,100
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 1, Half: 1
ZONING: Planned Lot Residential
REGION: City 8
BASEMENT: Finished
FEATURES: Schools nearby, fully landscaped, fenced

11. Rating out of 100: _____ Average rating: 75 (s.d. 3.33)

ADDRESS: 90 Hudson Drive
PRICE: 399,500
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 2 Half: 1
ZONING: Planned Lot Residential
REGION: City B
BASEMENT: Fully and professionally finished.
FEATURES: Shopping, public transit, schools nearby, landscaped, fenced, pool.

12. Rating out of 100: _____ Average rating: 70 (s.d. 5.27)

ADDRESS: 22 Jewitt Road
PRICE: 299,500
LISTING TYPE: Residential
BEDROOMS: 3

BATHROOMS: Full: 2, Half: 1
ZONING: Planned Lot Residential
REGION: City P
BASEMENT: Unfinished
FEATURES: Shopping, public transit.

13. Rating out of 100: _____ Average rating: 70 (s.d. 2.40)

ADDRESS: 18 Watchman Ave
PRICE: 199,500
LISTING TYPE: Residential
BEDROOMS: 2
BATHROOMS: Full: 1
ZONING: Planned Lot Residential
REGION: City 90
BASEMENT: Finished
FEATURES: Shopping, landscaped, fenced

14. Rating out of 100: _____ Average rating: 80 (s.d. 2.36)

ADDRESS: 98 Minon Avenue
PRICE: 199,500
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 2, Half: 0
ZONING: Planned Lot Residential
REGION: City E
BASEMENT: Partially finished
FEATURES: Large lot, landscaped, fenced.

15. Rating out of 100: _____ Average rating: 80 (s.d. 3.33)

ADDRESS: 6 Claric Drive
PRICE: 200,000
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 1, Half: 1
ZONING: Planned Lot Residential
REGION: City R
BASEMENT: Partially finished
FEATURES: Shopping, public transit, schools nearby, landscaped, fenced

16. Rating out of 100: _____ Average rating: 75 (s.d. 3.33)
ADDRESS: 2 Major's Road
PRICE: 179,500
LISTING TYPE: Residential
BEDROOMS: 2
BATHROOMS: Full: 1
ZONING: Planned Lot Residential
REGION: City 27
BASEMENT: Partially finished
FEATURES: Shopping, public transit, schools nearby, landscaped, fenced

17. Rating out of 100: _____ Average rating: 79 (s.d. 3.33)

ADDRESS: 18 Smith Avenue
PRICE: 240,500

LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 2
ZONING: Planned Lot Residential
REGION: City A
BASEMENT: Fully finished
FEATURES: Shopping, public transit, schools nearby, landscaped, fenced, hot tub

18. Rating out of 100: _____ Average rating: 85 (s.d. 4.99)

ADDRESS: 85 Azuralad Road
PRICE: 201,000
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 2 Half: 0
ZONING: Planned Lot Residential
REGION: City 5
BASEMENT: Finished
FEATURES: Shopping, public transit, schools nearby, landscaped.

19. Rating out of 100: _____ Average rating: 70 (s.d. 3.33)

ADDRESS: 823 Sweet Briar Crescent
PRICE: 209.000
LISTING TYPE: Residential
BEDROOMS: 2
BATHROOMS: Full: 1, Half: 1
ZONING: Planned Lot Residential
REGION: City C
BASEMENT: Unfinished
FEATURES: Shopping, public transit, schools nearby, fenced

20. Rating out of 100: _____ Average rating: 90 (s.d. 7.07)

ADDRESS: 12 Broadway Blvd.
PRICE: 159,900
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 1, Half: 1
ZONING: Planned Lot Residential
REGION: City 10
BASEMENT: Partially finished
FEATURES: schools nearby, landscaped, fenced

21. Rating out of 100: _____ Average rating: 78 (s.d. 4.22)

ADDRESS: 25 Johnson Park
PRICE: 212,500
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 2
ZONING: Planned Lot Residential
REGION: City 19
BASEMENT: Unfinished
FEATURES: Shopping, public transit, schools nearby, landscaped, fenced

22. Rating out of 100: _____ Average rating: 84 (s.d. 3.77)

ADDRESS: 9 Govenors Way
PRICE: 198,500
LISTING TYPE: Residential
BEDROOMS: 2 plus large den
BATHROOMS: Full: 1, Half: 1
ZONING: Planned Lot Residential
REGION: City 1
BASEMENT: Finished
FEATURES: Shopping, public transit, landscaped, fenced

23. Rating out of 100: _____ Average rating: 80 (s.d. 2.36)

ADDRESS: 131 Foster Road
PRICE: 197,900
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 2, Half: 0
ZONING: Planned Lot Residential
REGION: City 7
BASEMENT: Finished
FEATURES: Extensively landscaped, fenced

24. Rating out of 100: _____ Average rating: 75 (s.d. 3.33)

ADDRESS: 18 Mooney Blvd.
PRICE: 169,500
LISTING TYPE: Residential
BEDROOMS: 2
BATHROOMS: Full: 1
ZONING: Planned Lot Residential
REGION: City C
BASEMENT: Unfinished
FEATURES: Public transit unavailable

25. Rating out of 100: _____ Average rating: 80 (s.d. 2.36)

ADDRESS: 86 Ardures Road
PRICE: 197,900
LISTING TYPE: Residential
BEDROOMS: 3
BATHROOMS: Full: 2, Half: 0
ZONING: Planned Lot Residential
REGION: City 67
BASEMENT: Partially finished
FEATURES: Shopping, public transit, fully landscaped.

APPENDIX B. DEPTH INTERVIEW PROCEDURES AND TOPICS

I. Procedures

For these interviews, the researcher presented herself at area real estate agencies. The researcher introduced herself to receptionist, and described project:

> Hello. My name is Jane Saber. I am working on my Ph.D. research at the University of Alberta. I am doing research on how real estate agents react to their customers. I was wondering if there were any agents available whom I could talk to about this issue.

If the receptionist found an agent who was willing to speak with me, the agent and I went to their office, and the dialogue from that point went as follows.

> Thank you for agreeing to talk with me. My name is Jane Saber, and I am working on my Ph.D. at the University of Alberta. I am researching how real estate agents react to their customers, and in particular, am interested in knowing what things a customer might say to you that would make you think the customer either is or is not interested in purchasing a property. Would you mind if I asked you a few questions?

If the realtor agreed to the interview, (See Appendix F), the questions that were asked were as follows. Summaries of the answers for the interviews are included after each question.

1. When you are showing a property to a client, what kinds of things that they say or do to make you think they are interested in purchasing?

-they say they like the house
-they notice / ask about specific features about the house
-they agree about the positive aspects of the house
-they ask about property taxes, utilities or other specific details that only would matter if they owned the house
-they ask about terms of possession
-they ask about financing
-they ask if there are any upcoming offers
-ask to see some house feature again
-reads, and re-reads listing sheet
-tell you they are going to make an offer
-they sound excited
-all of a sudden, they start talking faster
-they look around very thoroughly
-they try out the windows, doors, taps, toilets

-they start measuring dimensions
-they sound enthusiastic
-they try out the garage door openers
-they look through the house over and over
-opening all the closets and or cupboards
-carefully examining features of the house
-commenting about some feature of the house
-asking about appliances, curtains, garage door openers, or anything else that might go with the house purchase.
-looking for small details about the house

3. Are there any occasions when a client tells you positive things about a property, or acts in a positive way, but does not actually purchase the property. If so, what kinds of things do they do or say?

-vague positive comments about the neighborhood
-positive comments about one or two features of a house
-saying, I like the house, but have to check with someone else
-commenting on some really small detail about the house in a positive way

4. On the other hand, when you are showing a property, are there things that a client might say or do that make you think they are NOT interested in a property?

-I don't like this house
-demeaning house features
-commenting on bad things about the house over and over
-saying that other family members won't like the house
-saying negative things about the house, like overpriced, repetitively
-looking really quickly through house, and then leaving
-not saying anything at all that is relevant, when looking through house
-not checking house details, like cupboards, windows, etc.
-talking negatively about neighborhood over and over
-talking negatively about unfixable features of house
-telling you they hate the house
-telling you they are interested in something else
-telling you they need to see a different kind of property
-sounding angry
-sounding frustrated
-sounding unhappy

6. Are there any occasions, when a client tells you negative things about a property, or acts in a negative way, but does purchase the property? If so, what kinds of things do they do or say.

-if the client talks about things that can be fixed in a house in a negative manner, they are just negotiating price, probably
-usually their tone of voice really indicates whether or not they are interested
-if the client only objects to something once, and not very strenuously, then it is probably an objection that can be overcome, unless it is a really serious issue that is wrong with the house.

7. What kinds of things do clients talk about that really don't impact your sensing about how they feel about a property?

-weather
-some detail about the listing sheets or realtor: dress, briefcase, computer, etc
-how long they have lived in the city
-comments about their days, what they are doing, when they must go home
-any sort of salutations, comments about the showing procedure
-comments about the city, neighborhood (general
-comments about interest rates
-general comments about the housing market's health
-any general comments about turning off lights, closing windows, etc. while in the house
-any neutral tones of voice: can't tell if they are interested or not
-any general comments about realtor selling experience, practices, etc.

Participants were thanked for their time and debriefed.

APPENDIX C. REALTOR DEMOGRAPHIC DATA COLLECTED

PLEASE ANSWER THE FOLLOWING:

I. What is your age?

1. **18-23**
2. **24-29**
3. **30-35**
4. **36-41**
5. **42-47**
6. **48-53**
7. **54-59**
8. **60-65**
9. **over 65**

II. What is your sex?

1. **Male**
2. **Female**

III. How long have you been employed in any capacity?

1. **less than 1 year**
2. **1-2 years**
3. **3-4 years**
4. **5-6 years**
5. **7-8 years**
6. **9-10 years**
7. **more than 10 years: _____ years**

IV. How long have you been employed in any type of sales?

1. **less than 1 year**
2. **1-2 years**
3. **3-4 years**
4. **5-6 years**
5. **7-8 years**
6. **9-10 years**
7. **more than 10 years: _____ years**

V. How long have you been employed in real estate sales?

1. **less than 1 year**
2. **1-2 years**
3. **3-4 years**
4. **5-6 years**
5. **7-8 years**
6. **9-10 years**
7. **more than 10 years: _____ years**

VI. How much formal sales training do you have?

1. **less than 1 year**
2. **1-2 years**
3. **3-4 years**
4. **5-6 years**
5. **7-8 years**
6. **9-10 years**
7. **more than 10 years: _____**
8.

VII. How much formal real estate sales training do you have?

1. **less than 1 year**
2. **1-2 years**
3. **3-4 years**
4. **5-6 years**
5. **7-8 years**
6. **9-10 years**
7. **more than 10 years: _____ years**

VIII. What type of agent are you?

1. **Residential**
2. **Commercial**
3. **Property Management**
4. **Residential and Commercial**
5. **Residential and Property Management**
6. **Residential, Commercial and Property Management.**
7. **Other: _____**

IX. How many hours per week do you work, on average?

1. **less than 10 hours per week**
2. **10-20**
3. **21-30**
4. **31-40**
5. **41-50**
6. **51-60**
7. **more than 60 hours per week**

X. How many deals do you make in an average year?

1. **less than 10 deals per year**
2. **10-20**
3. **21-30**
4. **31-40**
5. **41-50**
6. **51-60**
7. **more than 60 deals per year: _____**

XI. What is the average value of your deals?

1. **under $100,000**
2. **$100,000 - $200,000**
3. **$200,001 - $300,000**
4. **$300,000 - $400,000**
5. **$400,000 - $500,000**
6. **over $500,000**

XII. Rate your own performance as an agent, from 0 -100, where 50 is average : _____

APPENDIX D. PRETEST ONE

Procedures:

The researcher went to local real estate offices and asked the receptionist if there were any agents available to complete a experimental task which the researcher was completing for her PhD at the University of Alberta. If there were agents available the researcher explained the nature of the research to the agents, and asked if they would be willing to participate in the tasks (See Appendix F). Participants filled out Appendix C information, and then completed the main task. They were told verbally, and in writing, to read statements that customer made to them while viewing a house. In the participant's opinion, did the statement or action make the participant think the customer would or would not buy the house? Or did the statement or action not assist in determining the customer's opinions about the house? Participants were told to circle the number which best reflected their opinions.

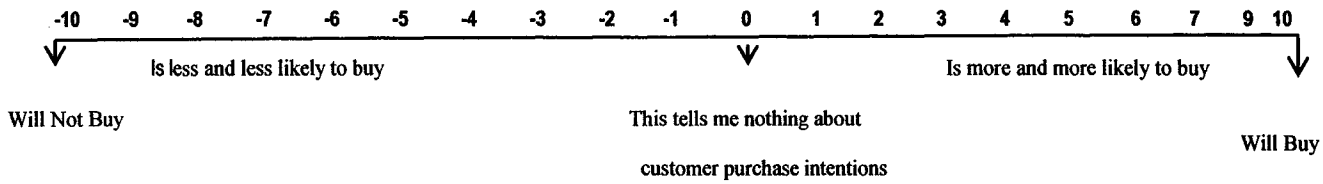
Pretest One Examples

An agent friend of yours has had a family emergency and has asked you to look after his clients while he is gone. You are meeting some clients at several houses for him today, but have not had a chance to speak with any of these clients before meeting them. All you have been told is that the houses that you are showing are approximately what the clients are looking for, and that if you sell the houses, you will get the full commission.

While at the houses, the clients tell you certain things, or acts in certain ways. Please indicate whether the statements or actions below make you think that the customer is likely **to buy, not buy**, or if the statement or action does not indicate customer purchase intentions at all.

Example:
"I REALLY LOVE THIS HOUSE"

This statement or action makes me think the customer: (please circle)



If you have any questions, please ask them now. If not, please continue with the rating of the following statements and actions.

1. THE APPLIANCES NEED UPDATING
2. I'M NEW IN TOWN, I JUST MOVED HERE
3. ARE YOU SELLING LOTS OF HOUSES THIS YEAR?
4. SHOULD I TURN OFF THESE LIGHTS?
5. CLIENT SOUNDS HAPPIER
6. THE CARPETS LOOK RELATIVELY NEW
7. HOW LONG HAVE YOU BEEN A REAL ESTATE AGENT?
8. THE FOUNDATION LOOKS DAMP
9. THIS HOUSE NEEDS RENOVATIONS
10. THE ROOMS SEEM SMALL
11. YOU ARE LUCKY, THE LOCK BOX WAS HARD TO OPEN FOR THE OTHER REALTOR
12. THE OWNERS OF THIS HOUSE HAVE LOTS OF ANTIQUES
13. CLIENT SOUNDS UNHAPPY

14. THERE IS A FIREPLACE
15. ARE THOSE THE STAIRS TO THE BASEMENT?
16. 'THIS HOUSE IS PRICED ABOUT RIGHT
17. THERE IS LOTS OF STORAGE SPACE
18. I LIKE THE BATHROOM FIXTURES
19. THIS HOUSE IS BIG ENOUGH FOR A LARGE FAMILY
20. THIS HOUSE IS A GOOD SIZE FOR US
21. THIS HOUSE WILL SELL QUICKLY
22. CLIENT'S VOCAL PATTERNS REMAIN MONOTONE
23. THIS YARD IS QUITE LARGE
24. THE APPLIANCES DON'T NEED UPDATING
25. THERE IS LITTLE STORAGE SPACE
26. THE CARPETS LOOK RELATIVELY OLD
27. THIS HOUSE DOES NOT NEED RENOVATIONS
28. THE FOUNDATION LOOKS DRY
29. THIS HOUSE IS NOT BIG ENOUGH FOR A LARGE FAMILY
30. CLIENT SOUNDS ANGRY
31. THIS HOUSE IS NOT PRICED RIGHT
32. THE ROOMS SEEM LARGE
33. THE YARD IS QUITE SMALL
34. I DON'T LIKE THE BATHROOM FIXTURES
35. THIS HOUSE WILL NOT SELL QUICKLY
36. CLIENT SOUNDS EXCITED
37. THIS HOUSE IS A POOR SIZE FOR US
38. ALRIGHTY, LET'S GO THROUGH THIS HOUSE
39. IT'S SUPER BUSY AT WORK THIS WEEK
40. DO MANY OF YOUR CLIENTS SEARCH FOR HOUSES ON THE NET?
41. THE LISTING SHEET IS VERY INFORMATIVE
42. CLIENT SOUNDS BORED
43. I'VE GOT ONE OF THOSE ENDLESS MEETINGS COMING UP AT WORK
44. I REALLY APPRECIATE YOU MEETING ME HERE
45. HOW LONG HAVE YOU BEEN A REAL ESTATE AGENT?
46. IT SURE IS A BEAUTIFUL DAY.

APPENDIX E. PRETEST TWO

Procedures

The researcher went to a local real estate office and asked the receptionist if any agents were available to complete an experimental task that the researcher was completing for her Ph.D. requirements. If the receptionist indicated there were agents available, the researcher explained the nature of the task and asked if the agent would be willing to participate (Appendix F). If the agents indicated their willingness to participate, they would complete Appendix C and the following task. Verbally, it was explained that the research was about how agents perceive another realtor's comments about a house and that they would read a number of statements or actions that another agent could say to them while viewing an open house. The participants were then told to circle the number that represented what the statement or action said about the other agent's opinion of the house: was the agent positive, neutral or negative about the house.

When completed, agents were thanked and debriefed.

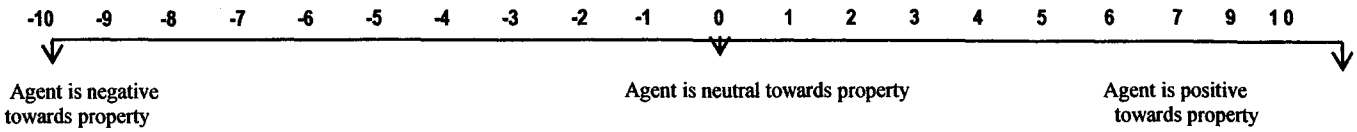
Pretest Two Examples

You are meeting another agent at a house. While at the house, the agent says certain things, or acts in certain ways. What do these statements make you think about the opinion of the agent of the property?

Example:

"I THINK THIS HOUSE IS LOVELY"

This statement or action makes me think the agent is: (please circle)



1. THE APPLIANCES NEED UPDATING
2. I'M NEW IN TOWN, I JUST MOVED HERE
3. ARE YOU SELLING LOTS OF HOUSES THIS YEAR?
4. SHOULD I TURN OFF THESE LIGHTS?
5. AGENT SOUNDS HAPPIER
6. THE CARPETS LOOK RELATIVELY NEW
7. HOW LONG HAVE YOU BEEN A REAL ESTATE AGENT?
8. THE FOUNDATION LOOKS DAMP
9. THIS HOUSE NEEDS RENOVATIONS
10. THE ROOMS SEEM SMALL
11. YOU ARE LUCKY, THE LOCK BOX WAS HARD TO OPEN FOR THE OTHER REALTOR
12. THE OWNERS OF THIS HOUSE HAVE LOTS OF ANTIQUES
13. AGENT SOUNDS UNHAPPY
14. THERE IS A FIREPLACE
15. ARE THOSE THE STAIRS TO THE BASEMENT?

16. 'THIS HOUSE IS PRICED ABOUT RIGHT
17. THERE IS LOTS OF STORAGE SPACE
18. I LIKE THE BATHROOM FIXTURES
19. THIS HOUSE IS BIG ENOUGH FOR A LARGE FAMILY
20. THIS HOUSE IS A GOOD SIZE FOR MY CLIENTS
21. THIS HOUSE WILL SELL QUICKLY
22. AGENT'S VOCAL PATTERNS REMAIN MONOTONE
23. THIS YARD IS QUITE LARGE
24. THE APPLIANCES DON'T NEED UPDATING
25. THERE IS LITTLE STORAGE SPACE
26. THE CARPETS LOOK RELATIVELY OLD
27. THIS HOUSE DOES NOT NEED RENOVATIONS
28. THE FOUNDATION LOOKS DRY
29. THIS HOUSE IS NOT BIG ENOUGH FOR A LARGE FAMILY
30. AGENT SOUNDS ANGRY
31. THIS HOUSE IS NOT PRICED RIGHT
32. THE ROOMS SEEM LARGE
33. THE YARD IS QUITE SMALL
34. I DON'T LIKE THE BATHROOM FIXTURES
35. THIS HOUSE WILL NOT SELL QUICKLY
36. AGENT SOUNDS EXCITED
37. THIS HOUSE IS A POOR SIZE FOR MY CLIENTS
38. ALRIGHTY, LET'S GO THROUGH THIS HOUSE
39. IT'S SUPER BUSY AT WORK THIS WEEK
40. DO MANY OF YOUR CLIENTS SEARCH FOR HOUSES ON THE NET?
41. THE LISTING SHEET IS VERY INFORMATIVE
42. AGENT SOUNDS BORED
43. I'VE GOT ONE OF THOSE ENDLESS MEETINGS COMING UP AT WORK
44. I REALLY APPRECIATE YOU MEETING ME HERE
45. HOW LONG HAVE YOU BEEN A REAL ESTATE AGENT?
46. IT SURE IS A BEAUTIFUL DAY.

EXTRA STIMULI INCLUDED, UNAMBIGUOUS POSITIVE AND NEGATIVE:

1. I JUST HATE THIS HOUSE
2. I JUST LOVE THIS HOUSE
3. MY CLIENTS WILL MAKE AN OFFER ON THIS HOUSE
4. MY CLIENTS WILL NOT MAKE AN OFFER ON THIS HOUSE
5. I AM SURE MY CLIENT'S HUSBAND WON'T LIKE THIS HOUSE
6. I AM SURE MY CLIENT'S HUSBAND WILL LIKE THIS HOUSE
7. MY CLIENTS ARE INTERESTED IN PURCHASING THIS HOUSE
8. MY CLIENTS ARE NOT INTERESTED IN PURCHASING THIS HOUSE
9. MY CLIENTS SURE LIKE THIS HOUSE
10. MY CLIENTS SURE DO NOT LIKE THIS HOUSE
11. I AM SURE MY CLIENT'S FAMILY WILL LOVE THIS HOUSE
12. I AM SURE MY CLIENT'S FAMILY WILL HATE THIS HOUSE

APPENDIX F. PRETESTS OF SOUNDS: REALTORS AND STUDENTS

Procedure: Realtors

The researcher presented herself at local real estate agencies and asked the receptionist if there were any agents available to participate in a 5 minute experimental task that she was completing as part of her Ph.D. requirements. If agents were available, the researcher described the nature of the task to the agent. In particular, verbally it was explained that the realtors would listen to a number of customer statements, (played on the researcher's laptop), and indicate on a sheet whether the statement made the participant think the customer was or was not interested in purchasing the house that she was talking about. The researcher also explained that there was some general demographic data (Appendix C), which the participant would like to collect. If the realtor agreed (see Appendix F), the participant completed the tasks.

Procedure: Students

As a Marketing Research class that she was teaching was ending, the researcher asked the class if there were any volunteers who wanted to participate in a five minute experimental task. The researcher explained that there was no incentive for participation, and no obligation to participate. A number of student volunteers wanted to learn more about the task, so the researcher explained that the participants would listen to some customer cues, and rate whether or not that customer wanted to purchase a house, based on those cues. The students who did not want to participate left the classroom, and the others were given the consent form (Appendix F) and did the experimental task. No other information was collected. The nature of the research, the experimental procedures, and a number of other pedagogical points were discussed. Participants were thanked and debriefed.

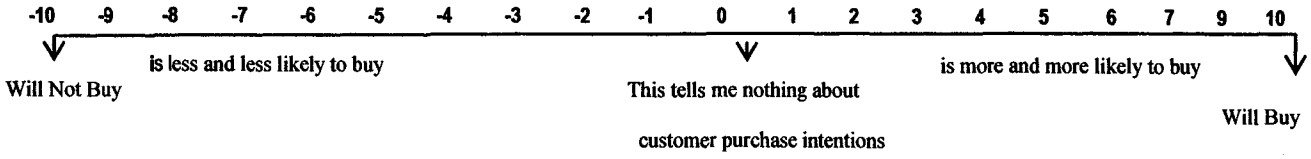
Form Used: Realtors and Students.

The form used for both realtors and students was a one page sheet of paper, an example of is as follows:

A customer is looking at a house. While looking at the house, she makes a number of statements which will now be played for you. Based on what you hear, indicate whether you think the statement indicates the customer will purchase the house, the customer will not purchase the house, or that the statement does not help you decide whether or not the customer will purchase.

Example. (play recording)

This statement or action makes me think the customer: (please circle)



The participants were given approximately 10-20 seconds between each cue to complete the task.

This format was used for all of the cues pretested.

APPENDIX G. DATA COLLECTION FROM BROKERS

Form Used for Data Collection From Brokers

Dear (name of broker);

Your agent, (insert name of agent) has participated in a University of Alberta study on sales communication. The study was completed by Jane Saber (613-565-4088) and Dr. Richard Johnson (780-492-5345).

Part of the data that we are collecting is to have you, the broker, rate the agent on a scale of 0-100, where 50 represents the performance of an average agent.

We would ask you to please rate this agent. The agent has agreed to this rating procedure by providing his or her consent on the testing website. The consent was given by the agent providing their names while completing the experimental tasks.

We would also request that you keep this rating confidential, since confidentiality is an important part of the ethics requirements that the University of Alberta requires in procedures involving human subjects.

This task should take you approximately two minutes to complete. There is no monetary compensation for your participation. We do not anticipate any risks in this paper and pencil task. You are free to withdraw your consent and discontinue participation at any time. In order to withdraw, please return this sheet to the researcher. You do not have to answer any questions that you are not comfortable answering. If you decline to continue or you withdraw from the study, your data will be removed from the study upon your request. If you have any questions or concerns later, please contact Dr. Richard Johnson, at (780) 492-5345, in the Department of Marketing, Business Economics and Law, at the University of Alberta, or Jane Saber at (613) 562-5800 extension 4775, at the Faculty of Administration, University of Ottawa. On the basis of the information presented on this page, please indicate to the experimenter your oral and written consent for participation in this study.

I _____(print name) have had the risks and nature of the research explained to me, and I freely agree to participate in this research, recognizing that I can withdraw my consent for participation at any time.

Signature: _____ Date: _____

I have received a copy of this consent form. (initial) _____

Investigator signature: _____

I rate the agent _____ (print name) at _____ out of 100.

APPENDIX H. SUBJECT RECRUITMENT, EXPERIMENTS

Emails and letters sent out to recruit subjects read as follows.

Re: Real Estate Listening Research:

Dear (participant name):

My name is Jane Saber. I am currently conducting research on the listening skills of real estate agents for my Ph.D. at the University of Alberta, and wondered if you would be willing to participate in the study.

The main purpose of the study is to determine how a real estate agent determines whether or not a customer is likely to buy a house. In this task, you will hear a number of statements that a client makes, and will be asked to respond to those statements. We will also ask for some general information about yourself and ask you to fill out two scales that measure selling attributes (customer orientation, adaptability) that you have. All of this information will be kept confidential.

In addition, we will also be asking your broker to rate your performance out of 100. There will be a section in the experiment for you to agree to this rating. We cannot guarantee that the broker will keep this rating confidential, although we will ask him or her to do so.

As an incentive to participate, we will send you an executive summary of the results for all of the participants. This information will summarize whether or not success and / or customer orientation and adaptability are related to listening patterns of agents.

If you wish to participate, please contact Jane Saber at 613-565-4088 or janeleesaber@yahoo.com for a password. The website is **sales-test.com**.

If you would like further information, please contact Jane Saber, above, or Professor Richard Johnson, at the University of Alberta, 780-492-5345.

I thank you in advance for your consideration.

Best wishes,

Jane Saber

APPENDIX I. POSTER

Invitation to Participate in Listening Research

Jane Saber (613-565-4088) and Professor Richard Johnson (780-492-5345) of the University of Alberta are looking for real estate agent participants for a 30 minute study relating listening to sales success, customer orientation and adaptability.

In return for your participation, you will receive an executive summary of the results of our study.

Please contact either researcher for more information.
Thank you.

APPENDIX J. CONSENT FORMS

Used For Pretest One

Sales Decisions

Thank you for participating in this study of how agents make decisions about whether or not customers want to purchase or sign contracts for properties.

The first part of the study consists of you providing some general information about yourself. All this information is strictly confidential and anonymous, and you will not be asked to provide us with your name. To ensure confidentiality, raw data will be coded and stored in a locked file cabinet to that only the investigators have access. The data will be retained for a period of five years post publication, after which it will be destroyed.

The second part of this study asks you to read some information that a customer could give you, while asking about a property. Please rate each statement on how informative it would be to you in determining whether or not the customer is likely to purchase a house.

The main purpose of this research is to understand how agents understand what customers are communicating.

This survey should take you approximately fifteen minutes to complete. There is no monetary compensation for your participation. We do not anticipate any risks in this paper and pencil task. You are free to withdraw your consent and discontinue participation at any time. In order to withdraw, return the booklet to the researcher. You do not have to answer any questions that you are not comfortable answering. If you decline to continue or you withdraw from the study your data will be removed from the study upon your request.

If you have any questions about the procedures, please feel free to ask them now. If you have any questions or concerns later, please contact Dr. Richard Johnson, at (780) 492-5345, in the Department of Marketing, Business Economics and Law, at the University of Alberta, or Jane Saber at (613) 562-5800 extension 4775, at the Faculty of Administration, University of Ottawa.

On the basis of the information presented on this page, please indicate to the experimenter your oral and written consent for participation in this study.

I _____(print name) have had the risks and nature of the research explained to me, and I freely agree to participate in this research, recognizing that I can withdraw my consent for participation at any time.

Signature: _____ Date: _____

I have received a copy of this consent form. (initial) _____

Investigator signature: _____

Used For Pretest Two

Sales Decisions

Thank you for participating in this study of how agents make decisions about whether or not customers want to purchase or sign contracts for properties.

The first part of the study consists of you providing some general information about yourself. All this information is strictly confidential and anonymous, and you will not be asked to provide us with your name. To ensure confidentiality, raw data will be coded and stored in a locked file cabinet to that only the investigators have access. The data will be retained for a period of five years post publication, after which it will be destroyed.

The second part of this study asks you to read some information that another realtor could say, while you are both looking at a house. Please rate each statement on how informative it would be to you in determining the other realtor's opinion of the house.

The main purpose of this research is to understand how agents understand what customers are communicating.

This survey should take you approximately fifteen minutes to complete. There is no monetary compensation for your participation. We do not anticipate any risks in this paper and pencil task. You are free to withdraw your consent and discontinue participation at any time. In order to withdraw, return the booklet to the researcher. You do not have to answer any questions that you are not comfortable answering. If you decline to continue or you withdraw from the study your data will be removed from the study upon your request.

If you have any questions about the procedures, please feel free to ask them now. If you have any questions or concerns later, please contact Dr. Richard Johnson, at (780) 492-5345, in the Department of Marketing, Business Economics and Law, at the University of Alberta, or Jane Saber at (613) 562-5800 extension 4775, at the Faculty of Administration, University of Ottawa.

On the basis of the information presented on this page, please indicate to the experimenter your oral and written consent for participation in this study.

I _____(print name) have had the risks and nature of the research explained to me, and I freely agree to participate in this research, recognizing that I can withdraw my consent for participation at any time.

Signature: _____ Date: _____

I have received a copy of this consent form. (initial) _____

Investigator signature: _____

Used For Depth Interviews

Sales Decisions

Thank you for participating in this study of how agents make decisions about whether or not customers want to purchase or sign contracts for properties.

The main purpose of this research is to understand how agents understand what customers are communicating.

We would like to ask you your opinions how you can tell if customers are likely or not likely to purchase a house. This interview should take you approximately one hour to complete. There is no monetary compensation for your participation. We do not anticipate any risks in this task. You are free to withdraw your consent and discontinue participation at any time. In order to withdraw, simply tell the researcher that you will not participate further. You do not have to answer any questions that you are not comfortable answering. If you decline to continue or you withdraw from the study your data will be removed from the study upon your request.

If you have any questions about the procedures, please feel free to ask them now. If you have any questions or concerns later, please contact Dr. Richard Johnson, at (780) 492-5345, in the Department of Marketing, Business Economics and Law, at the University of Alberta, or Jane Saber at (613) 562-5800 extension 4775, at the Faculty of Administration, University of Ottawa.

On the basis of the information presented on this page, please indicate to the experimenter your oral and written consent for participation in this study.

I _____ have had the risks and nature of the research
(print name)
explained to me, and I freely agree to participate in this research, recognizing that I can withdraw my consent for participation at any time.

Signature: _____ Date: _____

I have received a copy of this consent form. (initial) _____

Investigator signature: _____

Used for Pretests of Sounds with Realtors

Sales Decisions

Thank you for participating in this study of how agents make decisions about whether or not customers want to purchase or sign contracts for properties.

The main purpose of this research is to understand how agents understand what customers are communicating.

The first part of the study consists of you providing some general information about yourself. All this information is strictly confidential and anonymous, and you will not be asked to provide us with your name. To ensure confidentiality, raw data will be coded and stored in a locked file cabinet to that only the investigators have access. The data will be retained for a period of five years post publication, after which it will be destroyed.

The second part of this study consists of listening to some recorded statements that a customer has made while looking at a house. Please rate each statement on the sheet provided to you how likely it is that the customer would buy the house, based on each statement that you hear.

This task should take you approximately five minutes to complete. There is no monetary compensation for your participation. We do not anticipate any risks in this paper and pencil task. You are free to withdraw your consent and discontinue participation at any time. In order to withdraw, return the sheet to the researcher. You do not have to answer any questions that you are not comfortable answering. If you decline to continue or you withdraw from the study your data will be removed from the study upon your request.

If you have any questions about the procedures, please feel free to ask them now. If you have any questions or concerns later, please contact Dr. Richard Johnson, at (780) 492-5345, in the Department of Marketing, Business Economics and Law, at the University of Alberta, or Jane Saber at (613) 562-5800 extension 4775, at the Faculty of Administration, University of Ottawa.

On the basis of the information presented on this page, please indicate to the experimenter your oral and written consent for participation in this study.

I _____(print name) have had the risks and nature of the research explained to me, and I freely agree to participate in this research, recognizing that I can withdraw my consent for participation at any time.

Signature: _____ Date: _____

I have received a copy of this consent form. (initial) _____

Investigator signature: _____

Used for Pretests of Sounds with Students

Sales Decisions

Thank you for participating in this study of how people perceive statements.

The main purpose of this research is to understand communication.

This study consists of you listening to recorded statements that a customer is saying while looking through a house with a realtor. Please rate the statements on the sheet provided by circling the number that best represents your opinion on how negative or positive the statement is.

This task should take you approximately five minutes to complete. There is no monetary compensation for your participation. We do not anticipate any risks in this paper and pencil task. You are free to withdraw your consent and discontinue participation at any time. In order to withdraw, return the sheet to the researcher. You do not have to answer any questions that you are not comfortable answering. If you decline to continue or you withdraw from the study your data will be removed from the study upon your request.

If you have any questions about the procedures, please feel free to ask them now. If you have any questions or concerns later, please contact Dr. Richard Johnson, at (780) 492-5345, in the Department of Marketing, Business Economics and Law, at the University of Alberta, or Jane Saber at (613) 562-5800 extension 4775, at the Faculty of Administration, University of Ottawa.

On the basis of the information presented on this page, please indicate to the experimenter your oral and written consent for participation in this study.

I _____ have had the risks and nature of the research explained to me, and I
(print name)
freely agree to participate in this research, recognizing that I can withdraw my consent for participation at any time.

Signature: _____ Date: _____

I have received a copy of this consent form. (initial) _____
Investigator signature: _____

APPENDIX K. SELECTED CUES FROM PRETEST TWO

The selection of the cues was based on several factors. First, cue strength was averaged over all participants and cues were selected as follows. For unambiguous verbal cues, cue strength had to be over 7.5 in either a positive or negative direction to be selected. For neutral cues, cue strength had to be within 1 positive or negative of 0. Neutral cues had to pertain to some feature of the house. Noise cues, in contrast to neutral cues, did not pertain specifically to the property or any features of it, and had to be within 1 of 0 on the scale.

Ambiguous cues were selected on the following basis. Ambiguous cues were selected if they had a value between 6.5 and 2.5, positive or negative. Cues with a range of values were selected to have a more complete representation of cue types in this category.

For all selected cues, where there was a positive and negative version of the cue, the cue was selected only if the positive version of the cue had a value corresponding to the negative version of the cue, within a one unit tolerance. This procedure was used to reduce possible noise in the design that would possibly arise due to different words being used for cues. This procedure limited the types of cues that could be tested, and will be considered as an area for future research.

Paralanguage cues were selected by using the strongest negative, neutral or positive value indicated for the manipulation.

As a follow-up test, participants were categorized based on their factor scores into two groups: high score and lower score salespeople. T-tests for each selected cue were employed to ensure that the selected cues were perceived in a similar fashion by both groups. After this procedure, the cues were re-worded to reflect a customer stating these cues, rather than an agent stating the cue. Means are presented first, followed by standard deviations.

Verbal Unambiguous Positive Cues

1. I JUST LOVE THIS HOUSE: 8.30,1.33
2. I WILL MAKE AN OFFER ON THIS HOUSE: 8.91, 1.04
3. I AM INTERESTED IN PURCHASING THIS HOUSE: 8.17, 1.34
4. I SURE LIKE THIS HOUSE: 7.522, 1.702
5. I AM SURE MY FAMILY WILL LOVE THIS HOUSE: 7.96, 1.99

Verbal Ambiguous Positive Cues

1. THE CARPETS LOOK RELATIVELY NEW: 3.48, 1.44
2. THERE IS LOTS OF STORAGE SPACE: 3.61, 2.25
3. I LIKE THE BATHROOM FIXTURES: 2.35, 1.47
4. THIS HOUSE IS BIG ENOUGH FOR A LARGE FAMILY: 3.22, 1.38
5. THE APPLIANCES DON'T NEED UPDATING: 2.13, 1.29
6. THIS HOUSE DOES NOT NEED RENOVATIONS: 4.57,2.02

7. THE ROOMS SEEM LARGE: 3.70, 2.01

Neutral Cues

1. THE OWNERS OF THIS HOUSE HAVE LOTS OF ANTIQUES: .26, .75
2. THERE IS A FIREPLACE: .44, .23
3. ARE THOSE THE STAIRS TO THE BASEMENT?: .39, .83

Verbal Ambiguous Negative Cues

1. THE APPLIANCES NEED UPDATING: -2.27, 2.41
2. THIS HOUSE NEEDS RENOVATIONS: -4.81, 1.72
3. THE ROOMS SEEM SMALL: -2.73, 2.41
4. THERE IS LITTLE STORAGE SPACE:-3.27, 2.94
5. THE CARPETS LOOK RELATIVELY OLD: -2.98, 2.58
6. THIS HOUSE IS NOT BIG ENOUGH FOR A LARGE FAMILY:-2.82, 2.93
7. I DON'T LIKE THE BATHROOM FIXTURES: -2.27, 2.41

Verbal Unambiguous Negative Cues

1. I AM SURE MY FAMILY WILL HATE THIS HOUSE: -7.70, 1.96
2. I JUST HATE THIS HOUSE: -8.00, 1.68
3. I SURE DO NOT LIKE THIS HOUSE: -7.58, 1.88
4. I WILL NOT MAKE AN OFFER ON THIS HOUSE: -8.74, 1.29
5. I AM NOT INTERESTED IN PURCHASING THIS HOUSE: -8.35, 1.47

Noise Cues

1. I'M NEW IN TOWN, I JUST MOVED HERE: .04, .21
2. ARE YOU SELLING LOTS OF HOUSES THIS YEAR?: .13, .34
3. IT SURE IS A BEAUTIFUL DAY: 0.00, .102
4. ALRIGHTY, LET'S GO THROUGH THIS HOUSE: .09, .52
5. IT'S SUPER BUSY AT WORK THIS WEEK : -.04, .37
6. DO MANY OF YOUR CLIENTS SEARCH FOR HOUSES ON THE NET? : -.13, .69
7. THE LISTING SHEET IS VERY INFORMATIVE: .22, .52
8. I'VE GOT ONE OF THOSE ENDLESS MEETINGS COMING UP AT WORK: -.39, .84
9. I REALLY APPRECIATE YOU MEETING ME HERE: .44, .73
10. HOW LONG HAVE YOU BEEN A REAL ESTATE AGENT?: .48, .67
11. YOU ARE LUCKY, THE LOCK BOX WAS HARD TO OPEN FOR THE OTHER REALTOR: .13, .26

Paralanguage Positive Cues

1. AGENT SOUNDS HAPPIER: 4.22, 1.83

Paralanguage Neutral Cues

1. AGENT'S VOCAL PATTERNS REMAIN MONOTONE: -.30, .23

Paralanguage Negative Cues

1. AGENT SOUNDS UNHAPPIER : -2.83, 0.59

APPENDIX L. TESTING OF RECORDED CUES

Paralanguage cue manipulations were accepted if, as compared to neutral, manipulations changed the value by at least .75 of one point on a scale of 21 for unambiguous cues, and over 1 for ambiguous or noise cues. (-10 to 0 to +10). This level was chosen because in the case of unambiguous cues, the wording was so strong that large changes due to paralanguage were unexpected. The data, however, showed that even for unambiguous cues, paralanguage manipulations were still effective in modifying the value of the cue at the 1 point level. Means are displayed first, and standard deviations are in brackets.

Verbal Cue Type	Cue Number	Para Positive: change from 0: paralanguage positive manipulation value – paralanguage neutral value.	Para Negative change from 0: paralanguage neutral value – paralanguage negative manipulation value.
++	1	1.00 (.426)	-1.50 (.522)
++	2	1.08 (.289)	-1.17 (.389)
++	3	1.25 (.452)	-1.17 (.389)
++	4	1.25 (.452)	-1.33 (.492)
++	5	1.08 (.289)	-1.50 (.522)
+	1	1.17(.389)	-1.92 (.289)
+	2	1.58 (.515)	-2.25 (.452)
+	3	1.42(.515)	-2.25 (.452)
+	4	2.17 (.389)	-1.83 (.389)
+	5	1.58 (.515)	-2.83 (.389)
+	6	1.83 (.389)	-1.92 (.289)
+	7	2.00 (.426)	-1.33 (.492)
0	1	1.25 (.452)	-3.00 (.603)
0	2	2.42 (.669)	-2.33 (.492)
0	3	1.33 (.492)	-2.17 (.718)
-	1	2.00 (.426)	-1.75 (.452)
-	2	2.00 (.426)	-1.25 (.452)
-	3	1.00 (.426)	-1.17 (.389)
-	4	1.50 (.522)	-2.33 (.492)
-	5	2.08 (.289)	-1.17 (.389)
-	6	2.17 (.389)	-2.50 (.522)
-	7	1.58 (.515)	-1.25 (.452)
--	1	1.33 (.492)	-1.00 (.426)
--	2	1.83 (.389)	-1.17 (.389)
--	3	1.58 (.515)	-1.42 (.515)
--	4	1.00 (.426)	-1.33 (.492)
--	5	1.42 (.515)	-1.00 (.426)

APPENDIX M. SCRIPTS OF TRIALS

T	v	p		1	2	3	4	5	6	7	8	9	
A	++	+	n	n	n	n	s	n	s	n	s	n	n
B	++	0	n	n	n	n	s	n	n	s	n	s	n
C	++	-	n	n	n	n	n	s	n	n	s	s	n
D	+	+	n	n	n	n	s	n	s	n	n	s	n
E	+	0	n	n	n	s	n	n	s	s	n	n	n
F	+	-	n	n	n	n	n	s	n	n	s	s	n
G	0	+	n	n	n	n	n	s	s	n	s	n	n
H	0	0	n	n	n	s	n	n	n	s	n	s	n
I	0	-	n	n	n	n	n	s	s	n	s	n	n
J	-	+	n	n	n	n	s	n	n	n	s	s	n
K	-	0	n	n	n	s	n	n	s	s	n	n	n
L	-	-	n	n	n	n	s	n	s	n	n	s	n
M	--	+	n	n	n	n	n	s	n	n	s	s	n
N	--	0	n	n	n	n	s	n	n	s	n	s	n
O	--	-	n	n	n	n	s	n	s	n	s	n	n

All trials began with the phrase "Trial will start in 3, 2, 1", and ended with the phrase "End of Trial, please press continue". These cues are indicated in grey shading. These statements have been excluded from the scripts. Trial position in experiments were randomized after each 10th participant.

A. verbal ++, p +

1. Hello.
2. My name is Laurie Jacobs.
3. Wow, you are lucky, the lock box was hard to open for other realtor..
4. I just love this house. (positive)
5. Are you selling lots of houses this year?
6. I sure like this house. (positive).
7. It sure is a beautiful day.
8. I will make an offer on this house. (positive)
9. Do many of your clients search for houses on the net?

B. verbal ++, p 0

1. Hi there.
2. My name is Chianti Draline.
3. Alrighty lets go through this house
4. I sure like this house. (neutral)
5. It's super busy at work this week.
6. Yep I've got one of those endless meetings coming up. Excellent.

7. I'm sure my family would love this house. (neutral)
8. This listing sheet is very informative.
9. I am interested in buying this house. (neutral)

C. verbal ++, p -

1. Hi.
2. My name is Sandra Garbo.
3. I really appreciate you meeting me here.
4. This listing sheet is very informative.
5. I would like to make an offer. (negative)
6. How long have you been a real estate agent?
7. It sure is a beautiful day.
8. I am interested in purchasing this house? (negative)
9. I just love this house. (negative)

D. verbal +, p +

1. Well hello.
2. My name is Dorothy Smith.
3. I'm new in town I just moved here.
4. Well, the rooms seem large. (positive)
5. Are you selling lots of houses this year?
6. The foundation looks dry. (positive)
7. Do many of your clients search for houses on the net?
8. It's super busy at work this week.
9. This house seems big enough for a large family. (positive)

E. verbal +, p 0

1. Well, hello there.
2. My name is Mary Chardon.
3. This yard is quite large. (neutral)
4. Are you selling lots of houses this year?
5. This listing sheet is very informative.
6. Well I like the bathroom fixtures. (neutral)
7. There is lots of storage space. (neutral)
8. It sure is a beautiful day.
9. Do many of your clients search for houses on the net?

F. verbal +, p -

1. Hey hello.
2. My name is Jackie Dobson.
3. Wow, you are lucky, the lock box was hard to open for other realtor.
4. Are you selling lots of houses this year?

5. The carpets look relatively new. (negative)
6. How long have you been a real estate agent?
7. This listing sheet is very informative.
8. This house does not need renovations. (negative)
9. The appliances need don't need updating. (negative)

G. verbal 0, p +

1. Well hi there.
2. My name Leslie Robertson.
3. I've been living in city for a while now actually.
4. Are you selling lots of houses this year?
5. The owners of house have lots of antiques. (positive)
6. Are those the stairs to basement? (positive)
7. This listing sheet is very informative.
8. There is a fire place. (positive)
9. How long have you been a real estate agent?

H. verbal 0, p 0

1. Hey, hello there.
2. My name is Karen Opgenorth.
3. The owners of house have lots of antiques. (neutral)
4. This listing sheet is very informative.
5. I've been living I city for a while now actually.
6. It sure is a beautiful day.
7. Are those the stairs to the basement. (neutral)
8. Are you selling lots of houses this year?
9. There is a fireplace. (neutral)

I. verbal 0, p -

1. Well hi there.
2. My name is Jen Addison.
3. I'm new in town I just moved here.
4. Wow, you are lucky, the lock box was hard to open for other realtor.
5. The owners of this house have lots of antiques. (negative)
6. Are those the stairs to the basement? (negative)
7. This listing sheet is very informative.
8. There is a fireplace. (negative)
9. Are you selling lots of houses this year?

J. verbal -, p +

1. Hey, hello.
2. My name is Angela Barnes.

3. I've been living I city for a while now actually.
4. How long have you been a real estate agent?
5. The carpets look relatively old. (positive)
6. It's super busy at work this week.
7. It sure is a beautiful day.
8. This house needs renovations. (positive)
9. The appliances need updating. (positive)

K. verbal -, p 0

1. Well hello there.
2. My name is Brenda White.
3. This yard is quite small. (neutral)
4. I'm new in town I just moved here.
5. This listing sheet is very informative.
6. Well I don't like bathroom fixtures. (neutral)
7. There is little storage space. (neutral)
8. It's super busy at work this week.
9. Do many of your clients search for houses on the net?

L. verbal -, p -

1. Well hello.
2. My name is Shelly Winters.
3. I have been living in this city for a while now actually.
4. Well, the rooms seem small. (negative)
5. This listing sheet is very informative.
6. The foundation looks damp. (negative)
7. How long have you been a real estate agent?
8. Do many of your clients search for houses on the net?
9. This house does not seem big enough for a large family. (negative)

M. verbal --, p +

1. Hi.
2. My name is Rebecca Kreeker.
3. I'm new in town I just moved here.
4. This listing sheet is very informative.
5. I will not make an offer. (positive)
6. It's super busy at work this week.
7. It sure is a beautiful day.
8. I am not interested in purchasing this house. (positive)
9. I just hate this house. (positive)

N. verbal --, p 0

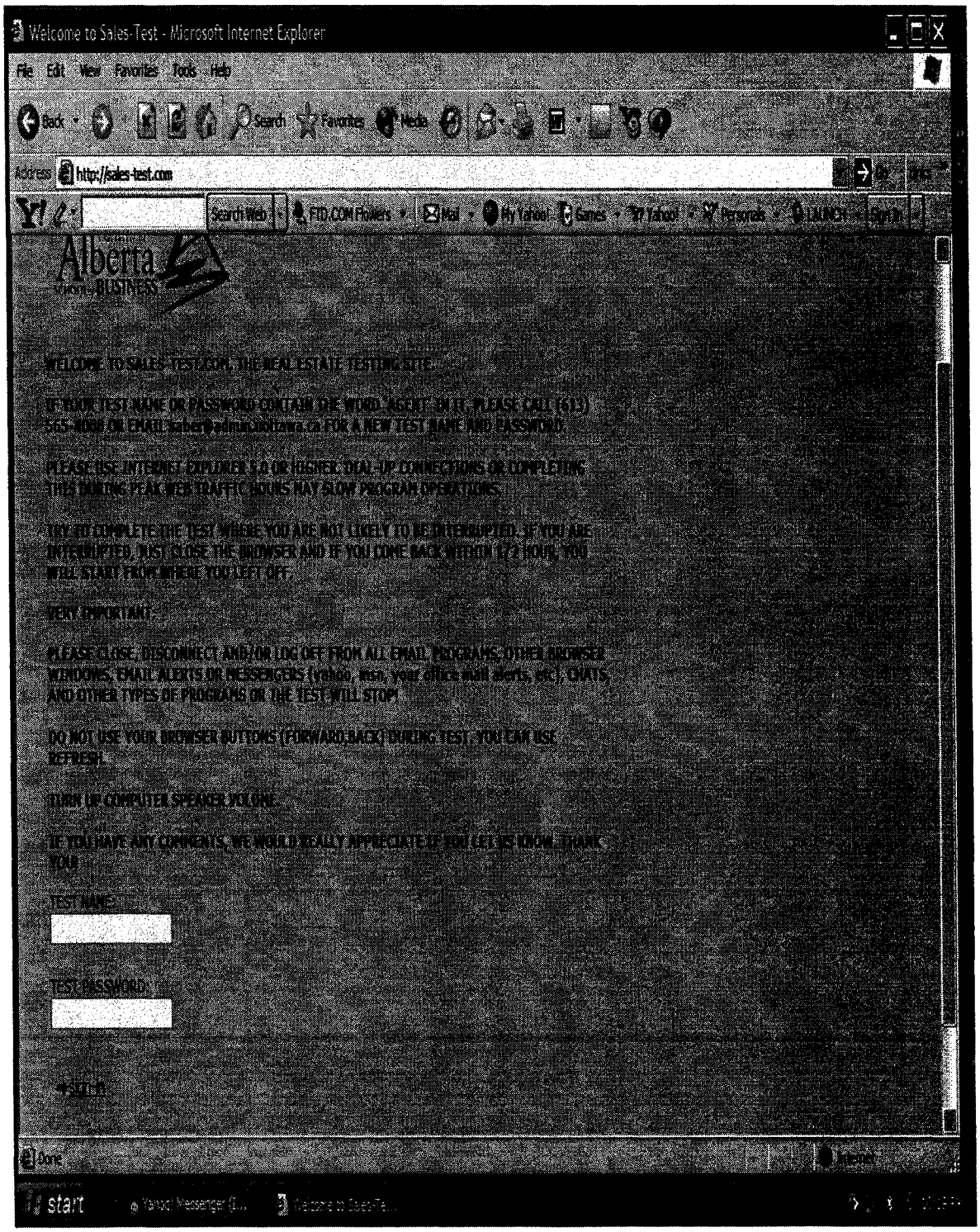
1. Hi there.
2. My name is Elisa Baker.
3. Alrighty, lets go through this house.
4. I sure don't like this house. (negative)
5. This listing sheet is very informative.
6. Do many of your clients search for houses on the net?
7. I am sure my family will hate this house. (negative)
8. It sure is a beautiful day.
9. I am not interested in buying this house.(negative)

O. verbal --, p -

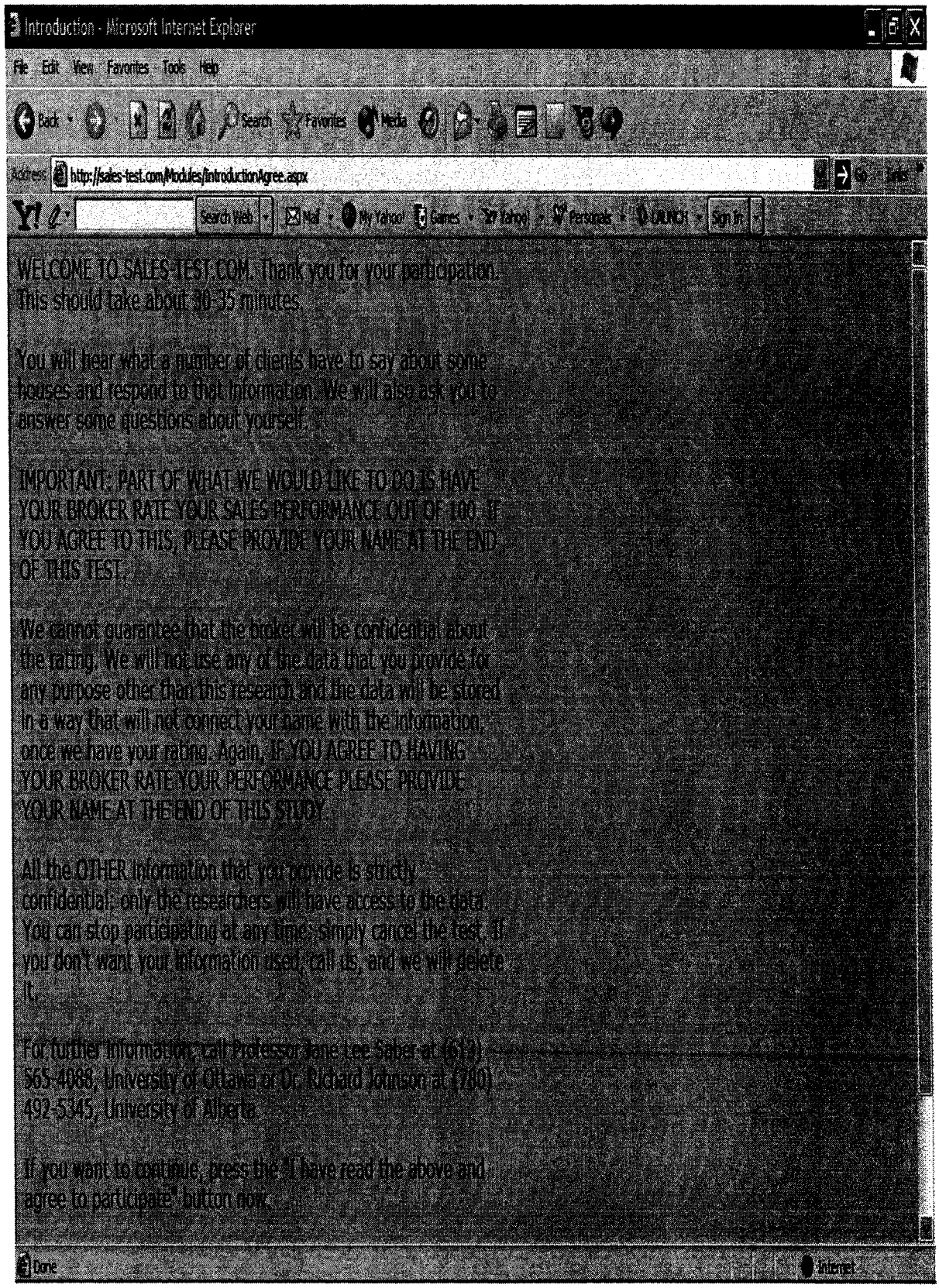
1. Hello.
2. My name is Lauren Brown.
3. Wow you are lucky, the lock box was hard to open for the other realtor.
4. I just hate this house. (negative)
5. How long have you been a real estate agent?
6. I sure don't like this house. (negative)
7. Are you selling lots of houses this year?
8. I am not interested in buying this house. (negative)
9. Do many clients search for houses on net?

APPENDIX N. EXAMPLES OF SCREENS SEEN BY PARTICIPANTS

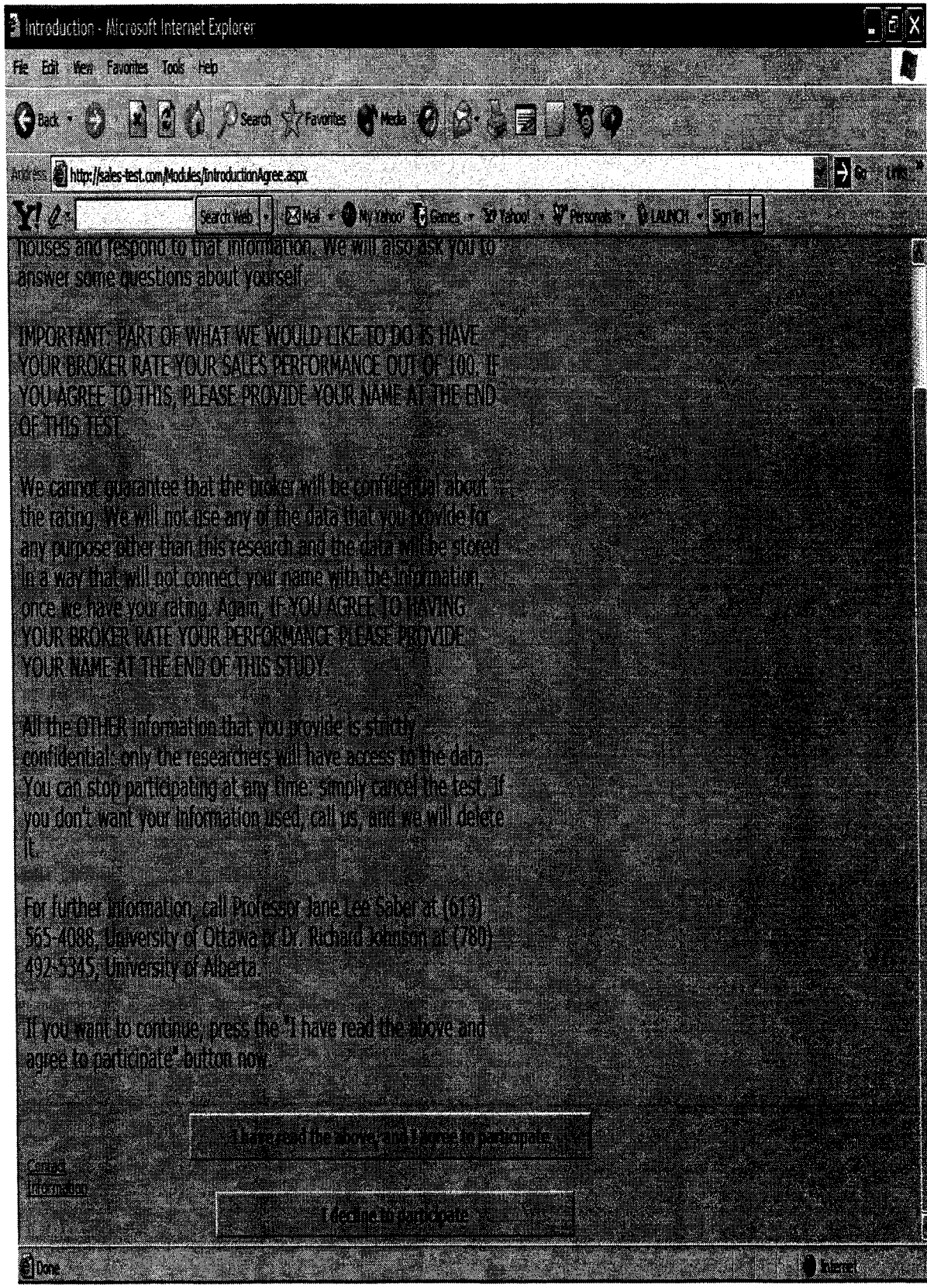
Page One: Used for Experiments One and Two



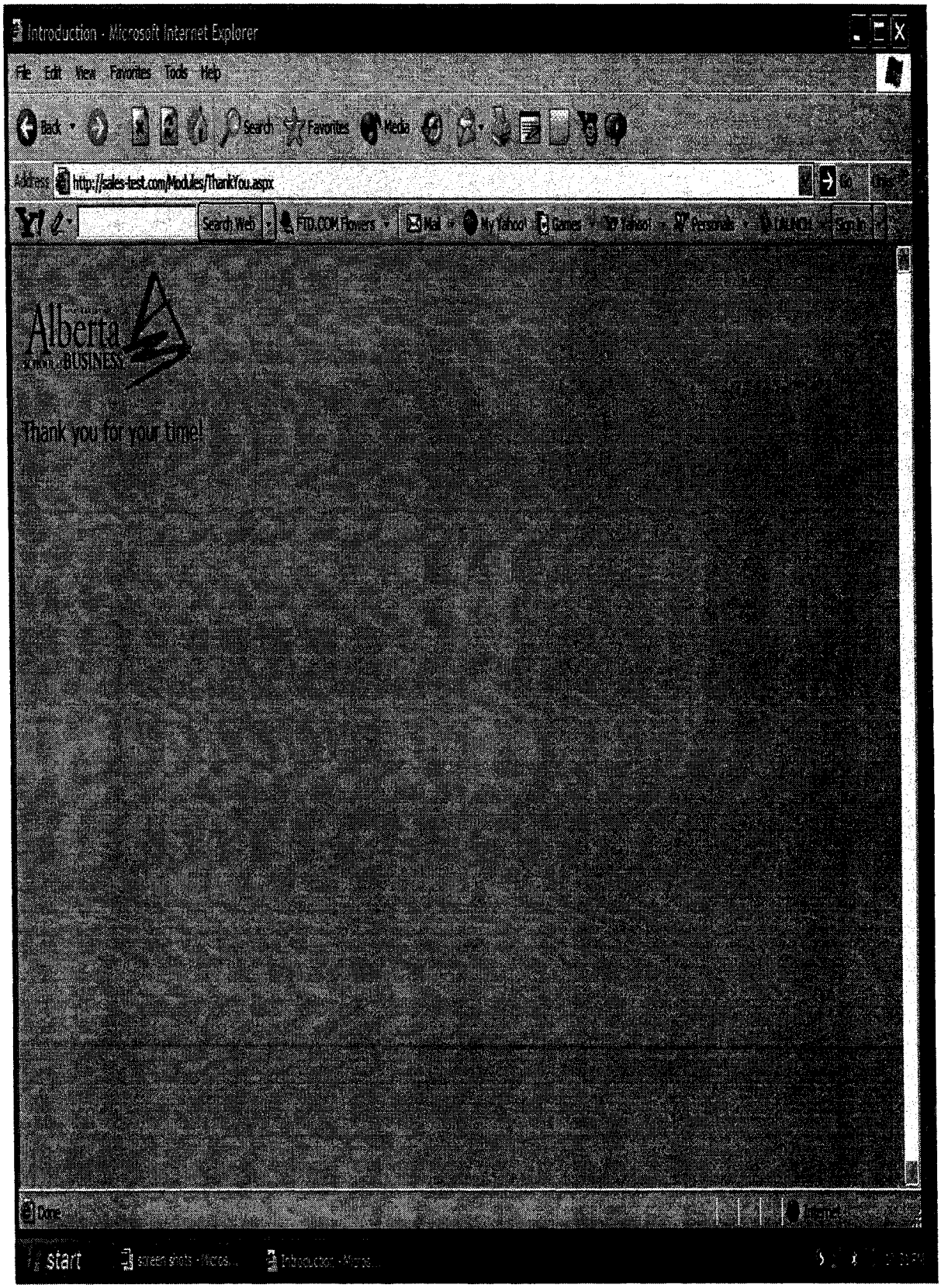
Page Two: Used for Experiments One and Two: Upper portion of page



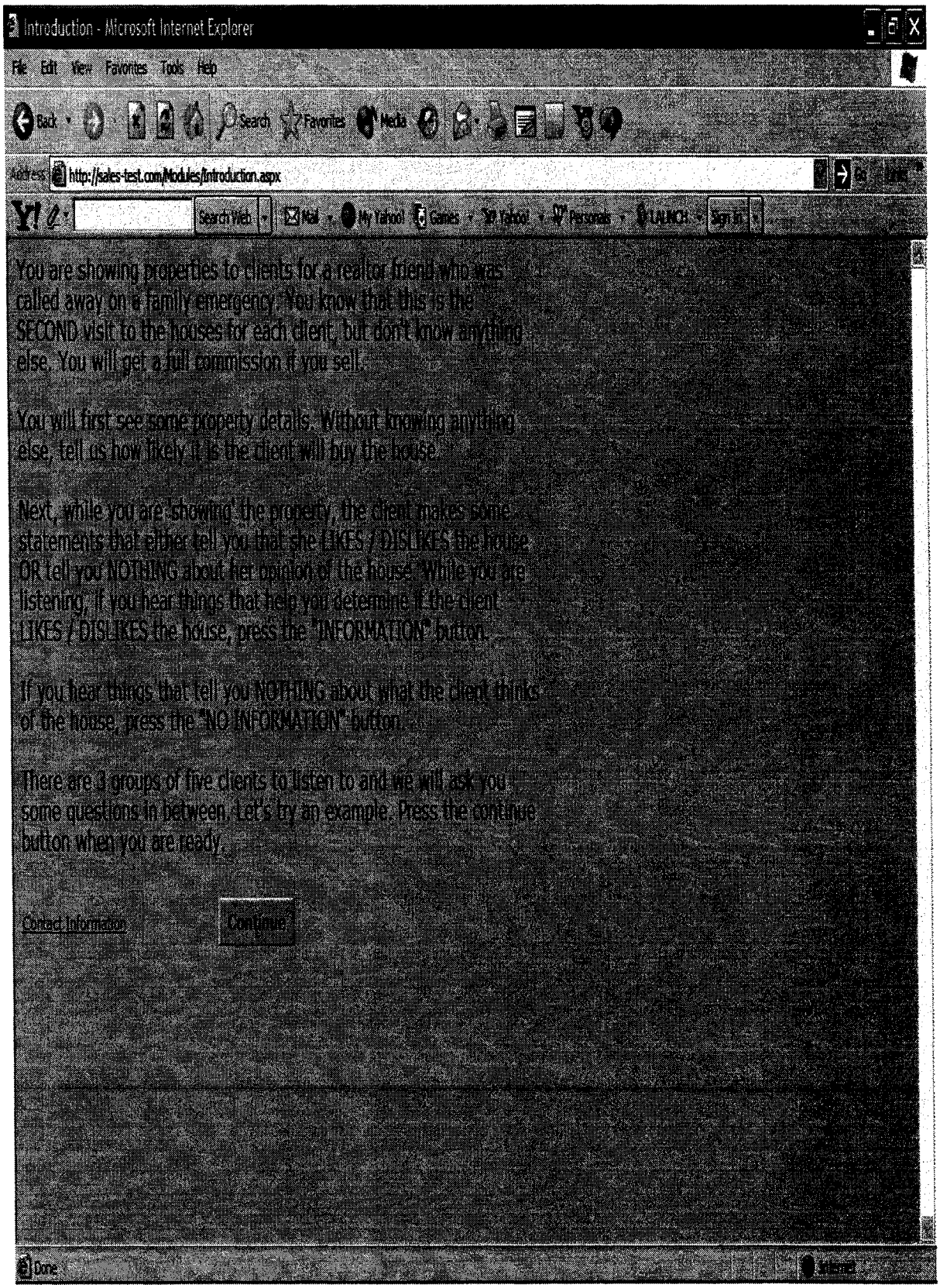
Lower portion of second page:



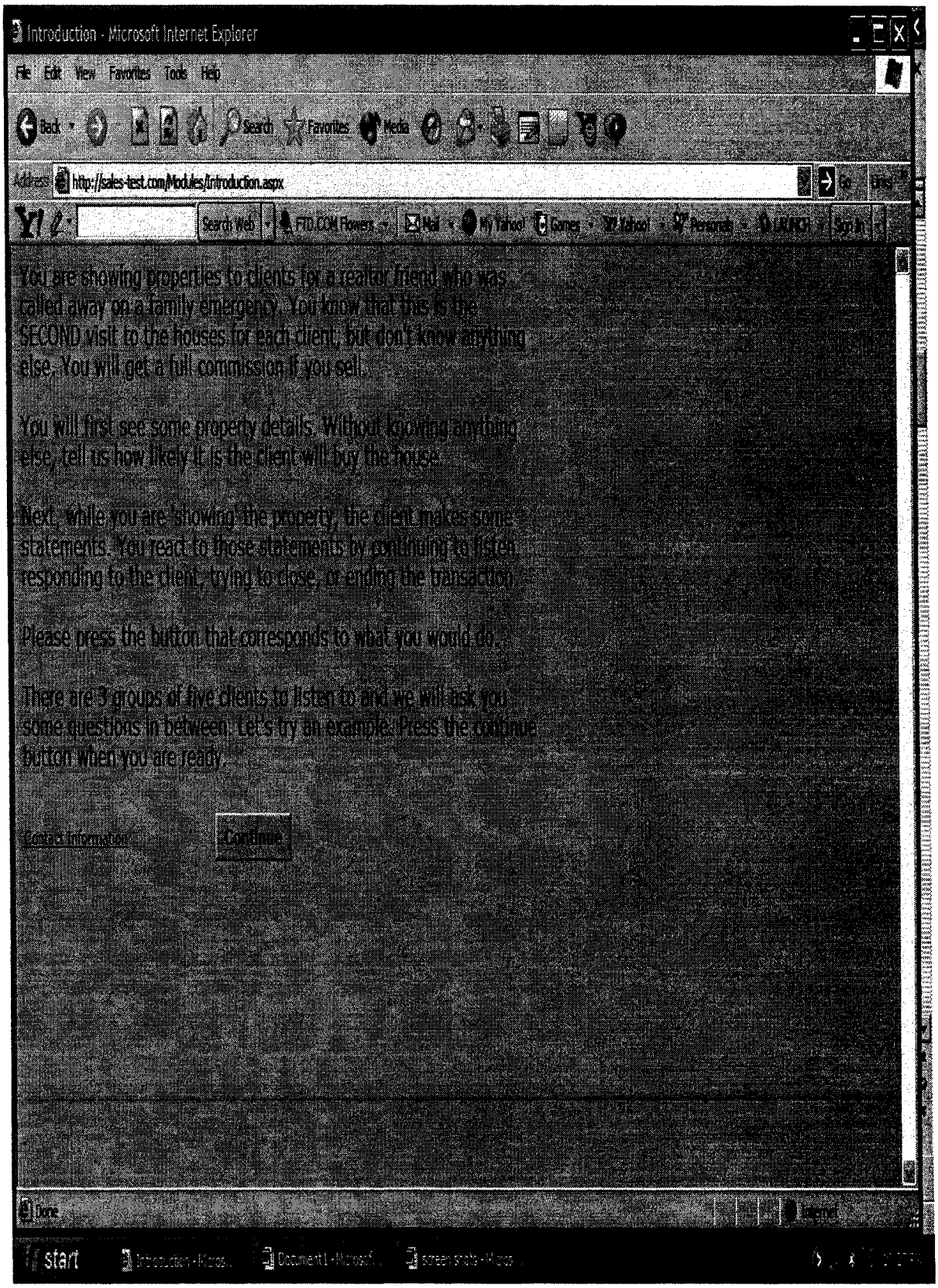
If participants declined, the following page would appear.



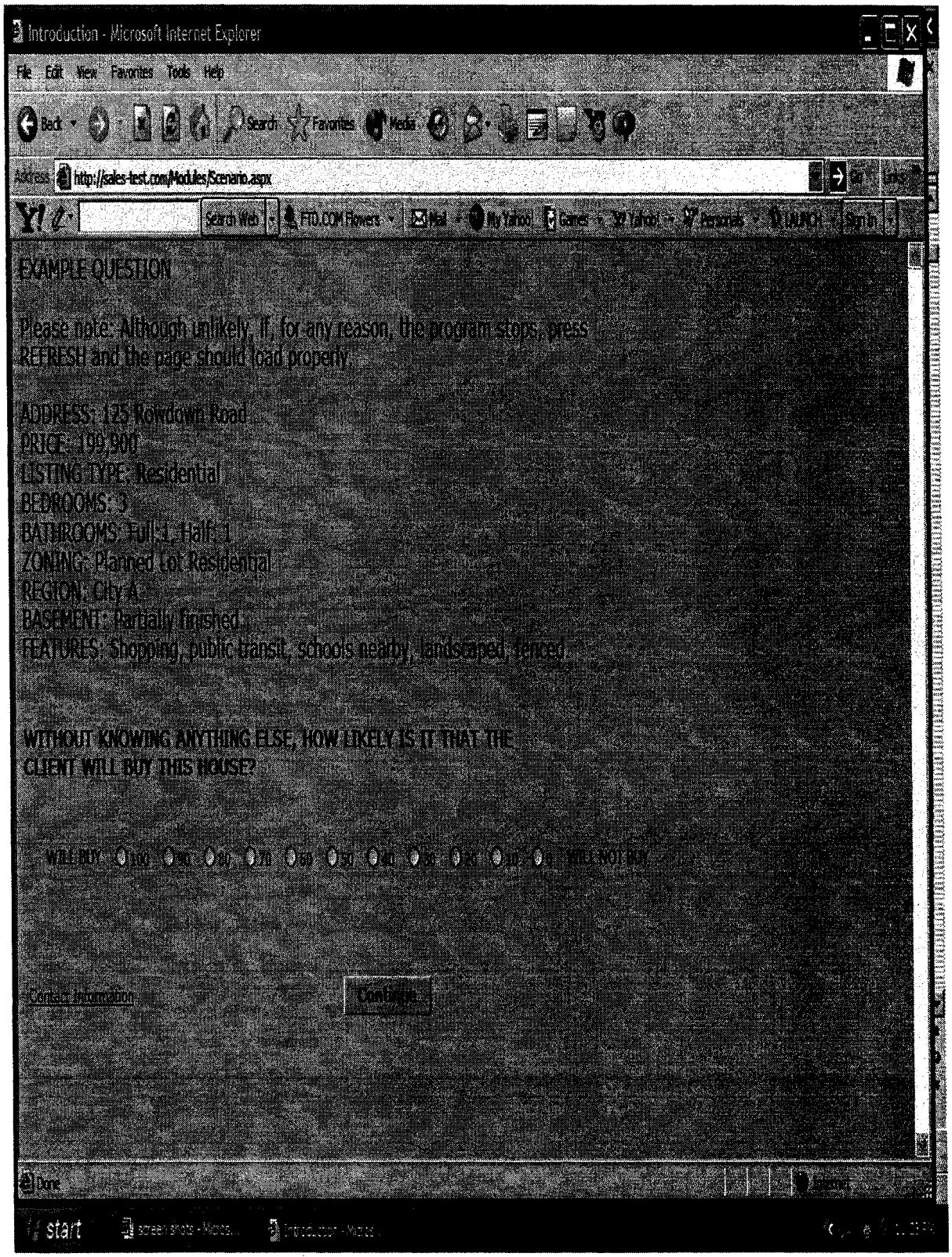
Instruction Page, Experiment One



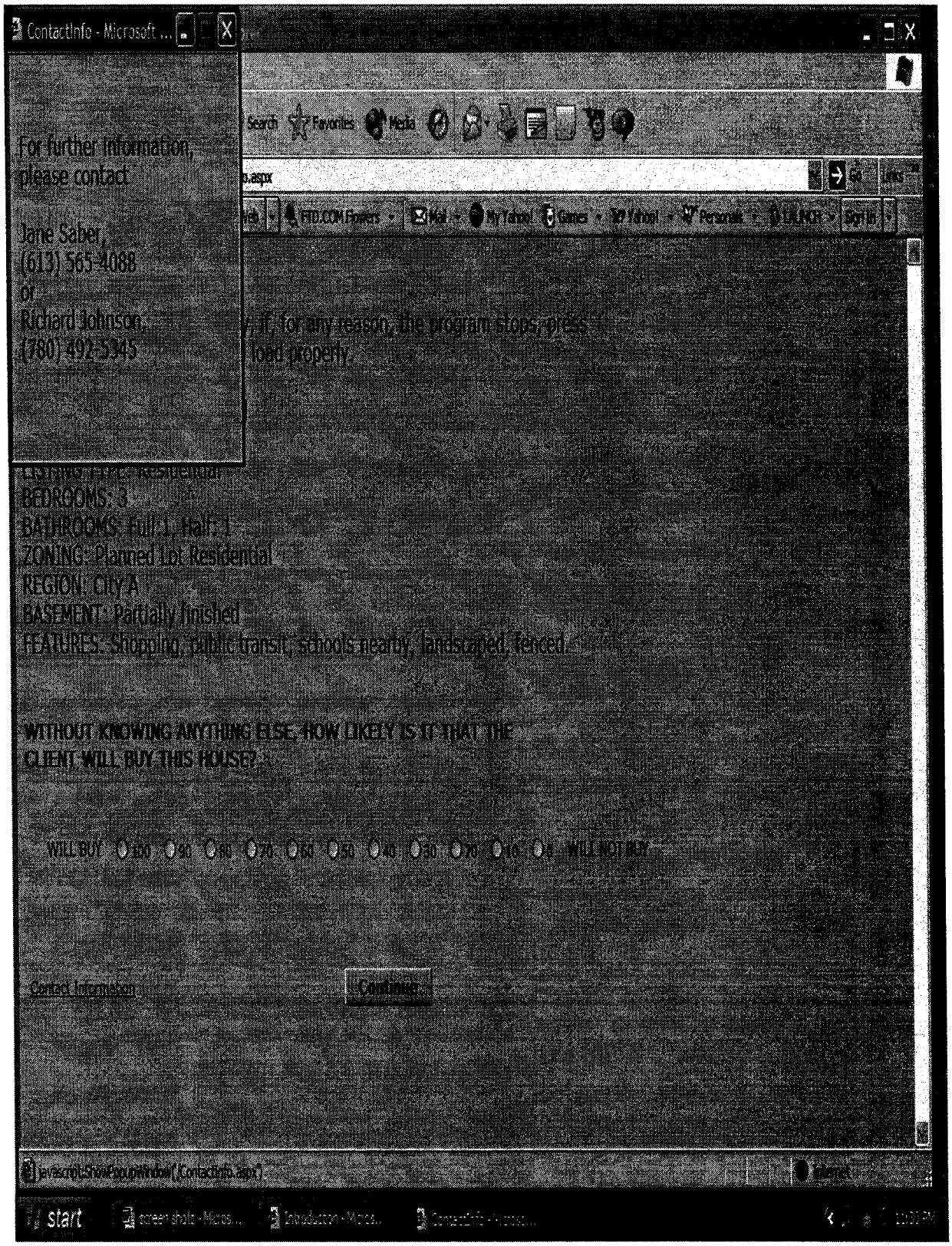
Instruction Page Experiment Two



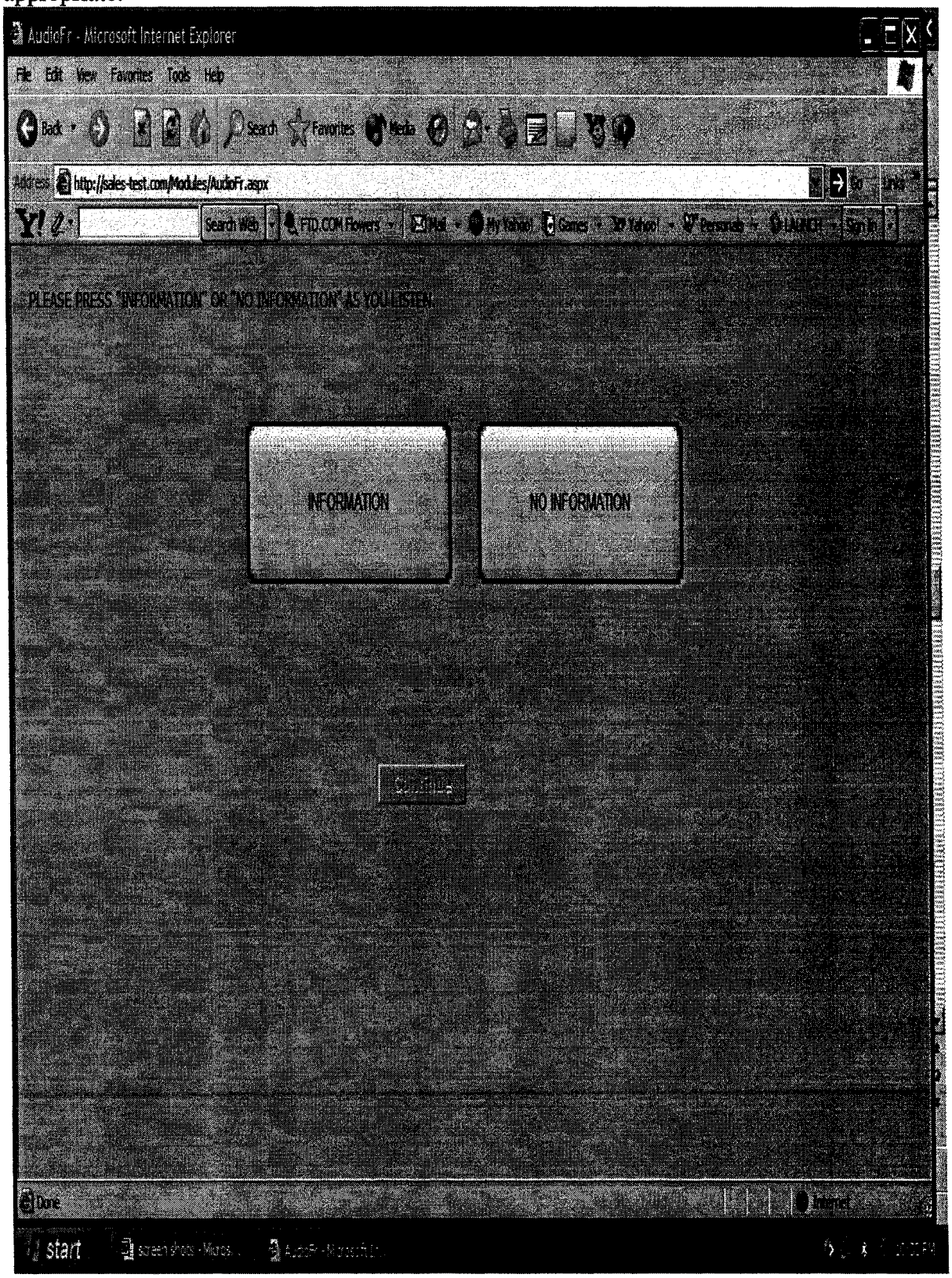
Example Page: All other pages in the 15 trials were identical to this, except for content, and did not have the warning about the problems with the program.



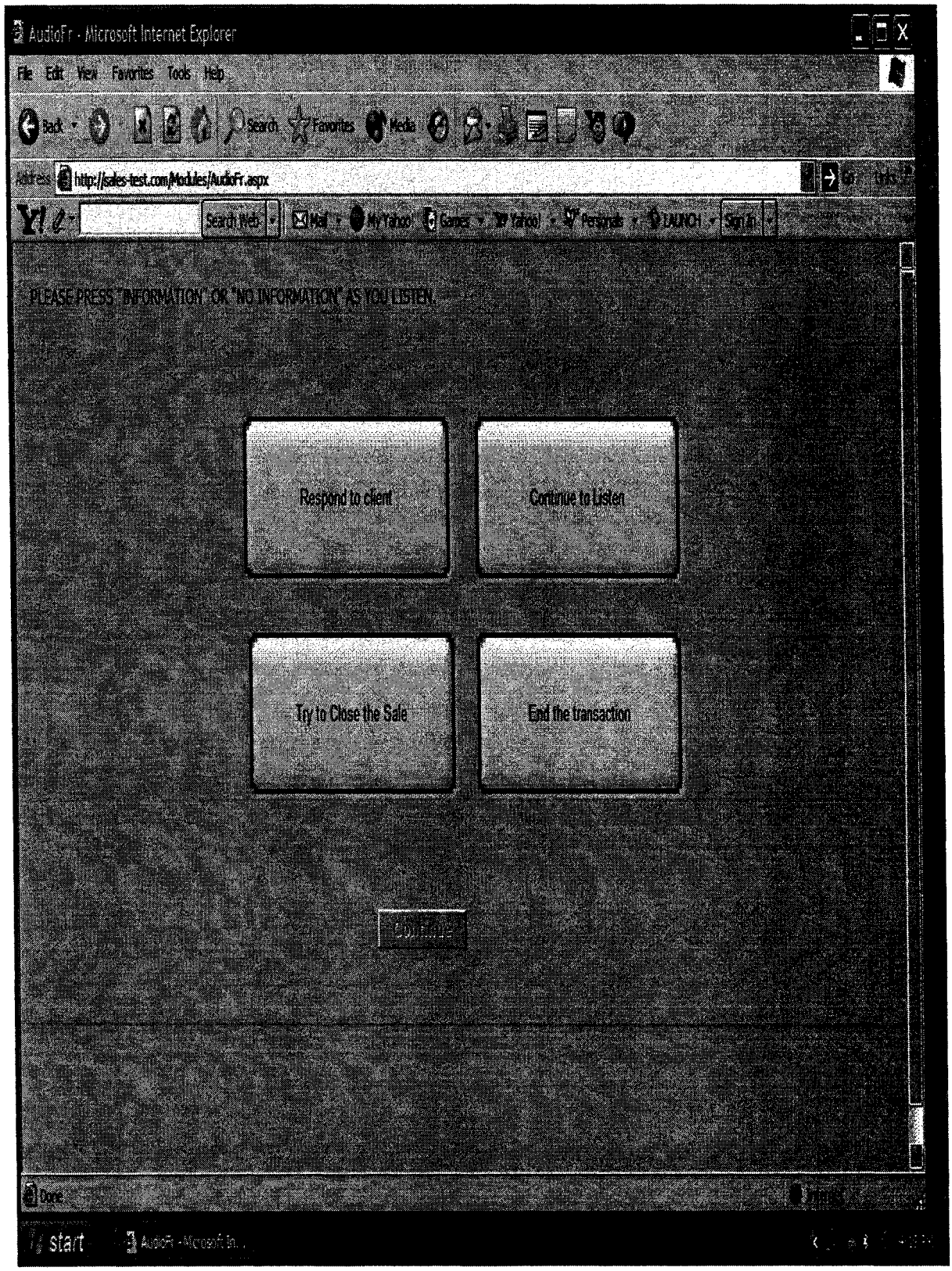
On each of the pages, except the button pages, the words, contact information included, and when those words were clicked on, the following popup box was presented.



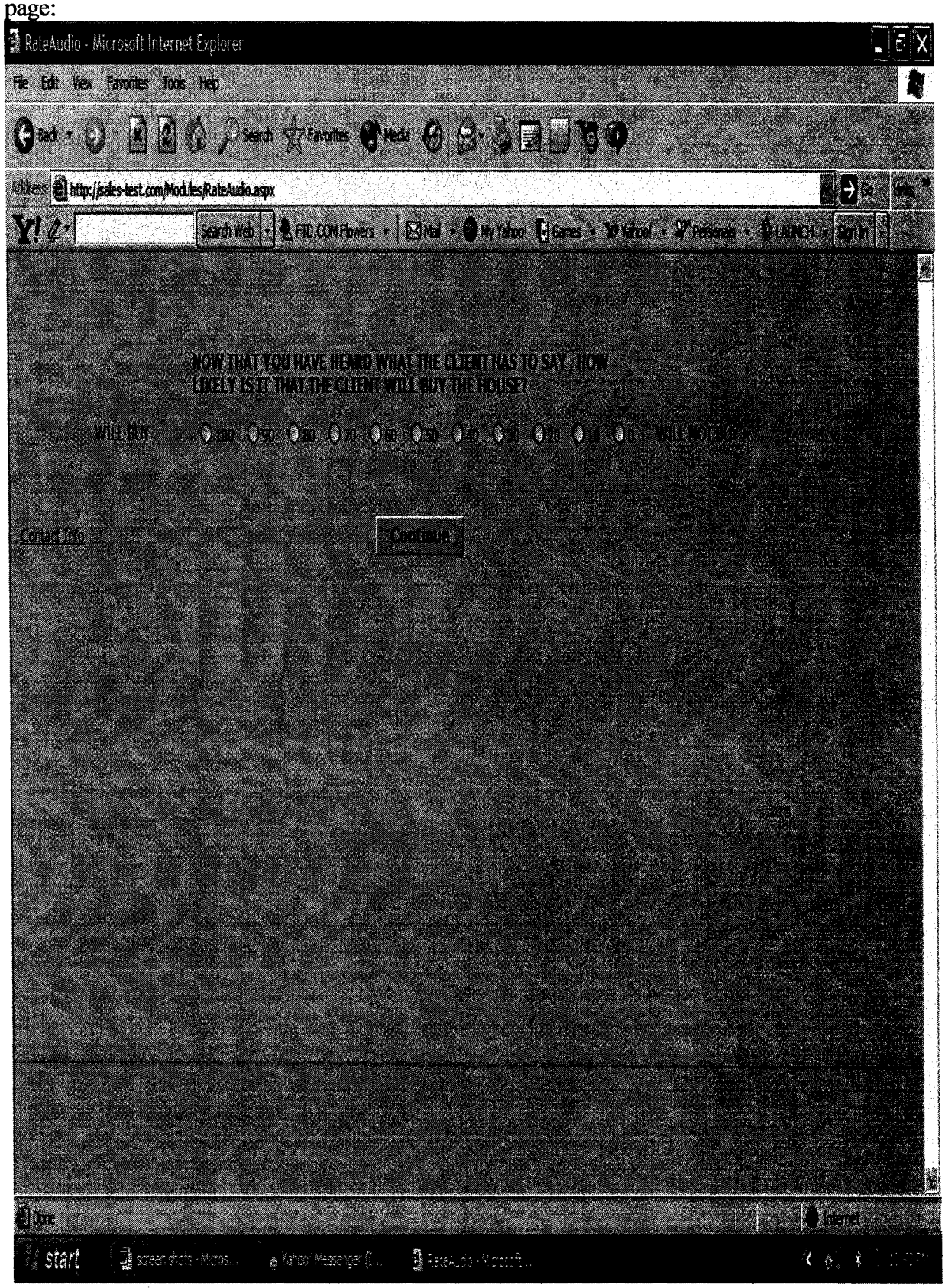
Button page: Experiment One: The continue button did not light up until all the cues had been played, and participants were thus unable to continue until such an action was appropriate.



Button Page, Experiment Two. The same continue button lit up when the cues had finished playing.

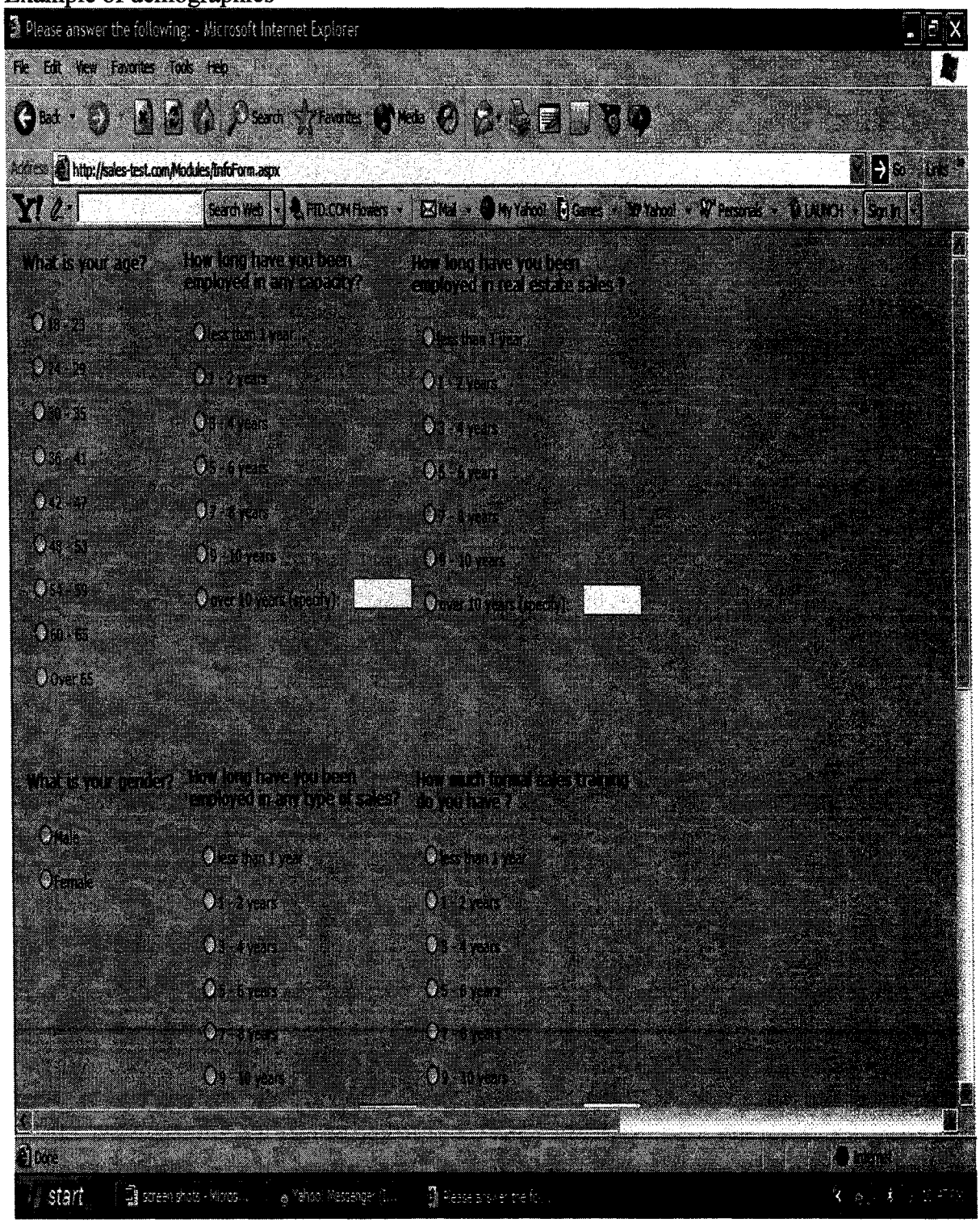


After clicking the buttons after each statement, the program would move to the following page:

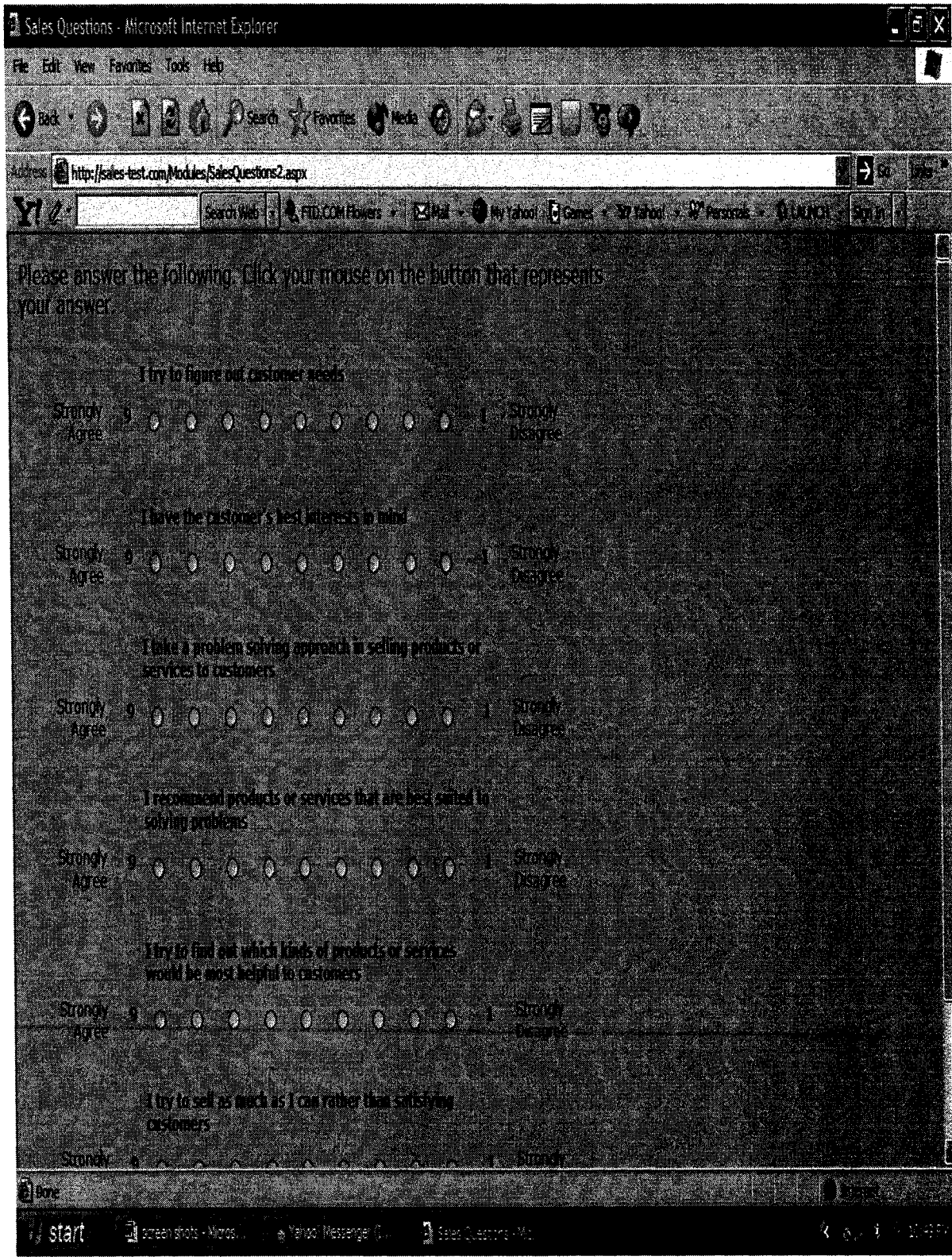


After five trials, the participants would complete demographics, then complete another five trials, then SOCO, then another five trials, then adapts, and the final five trials. The following are examples of what the various tasks in between appeared like for the participants.

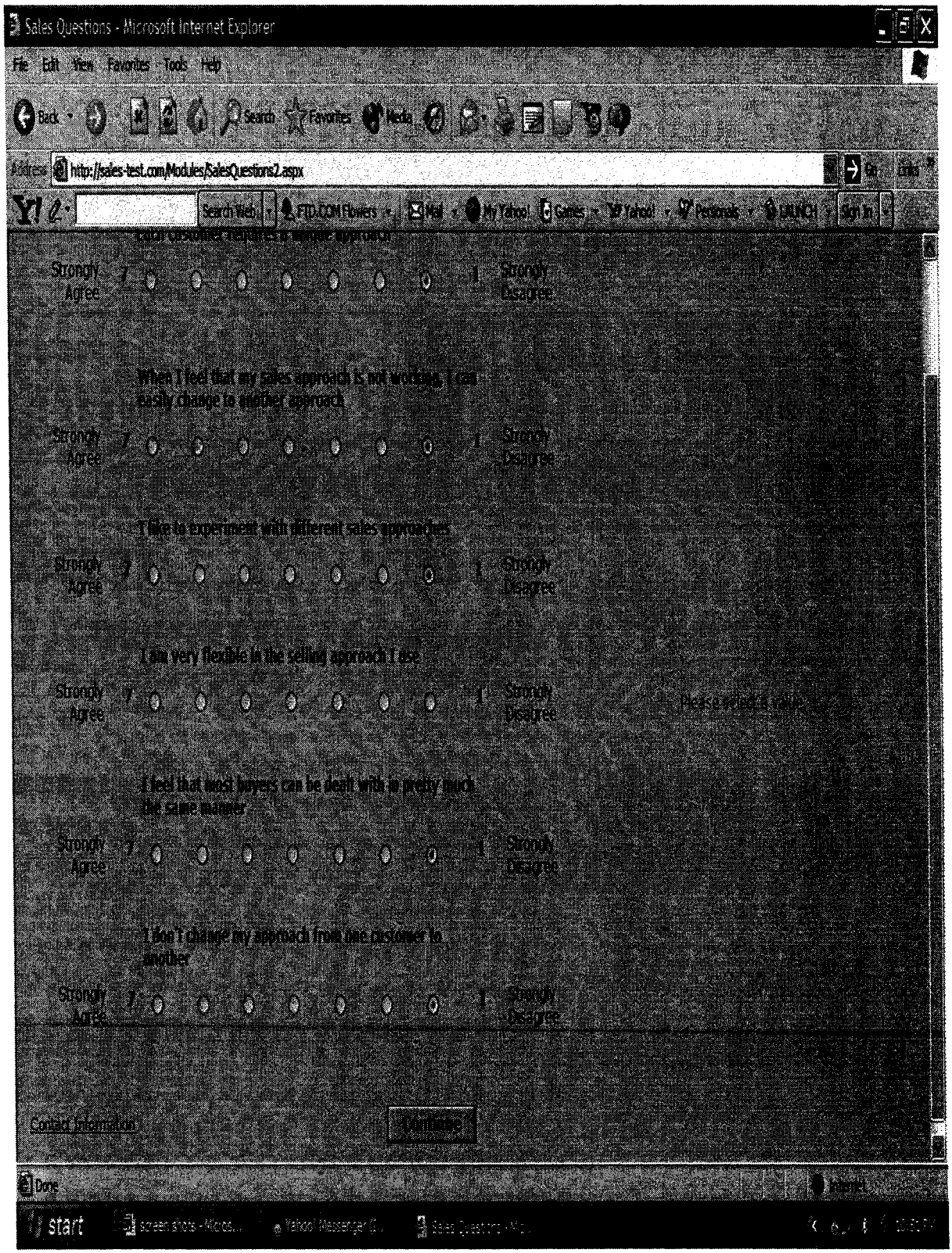
Example of demographics



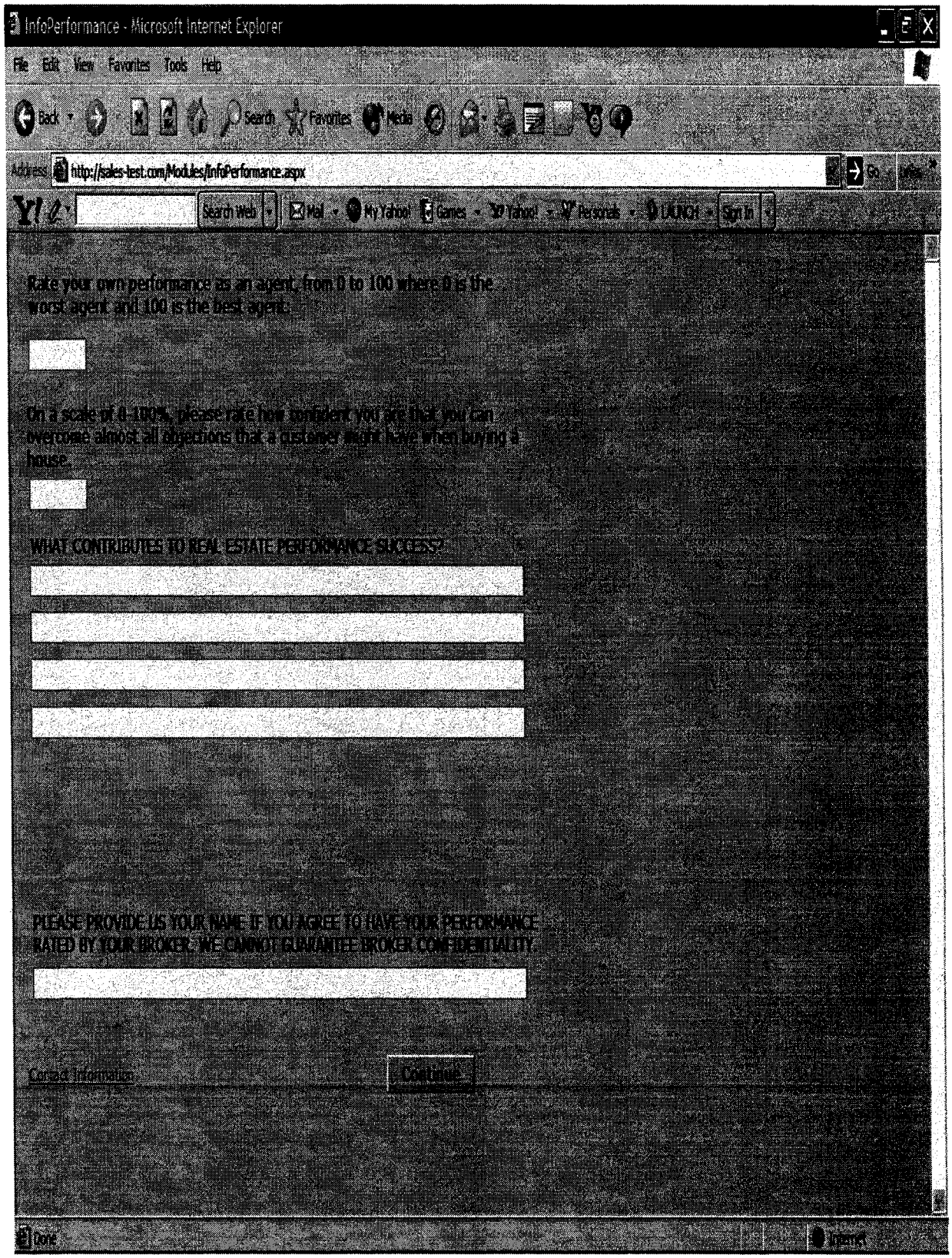
Examples of how SOCO and ADAPTS scales appeared. At the bottom of the page, which could not be captured for the purposes of this presentation, the words, continue, were at the bottom in a box.



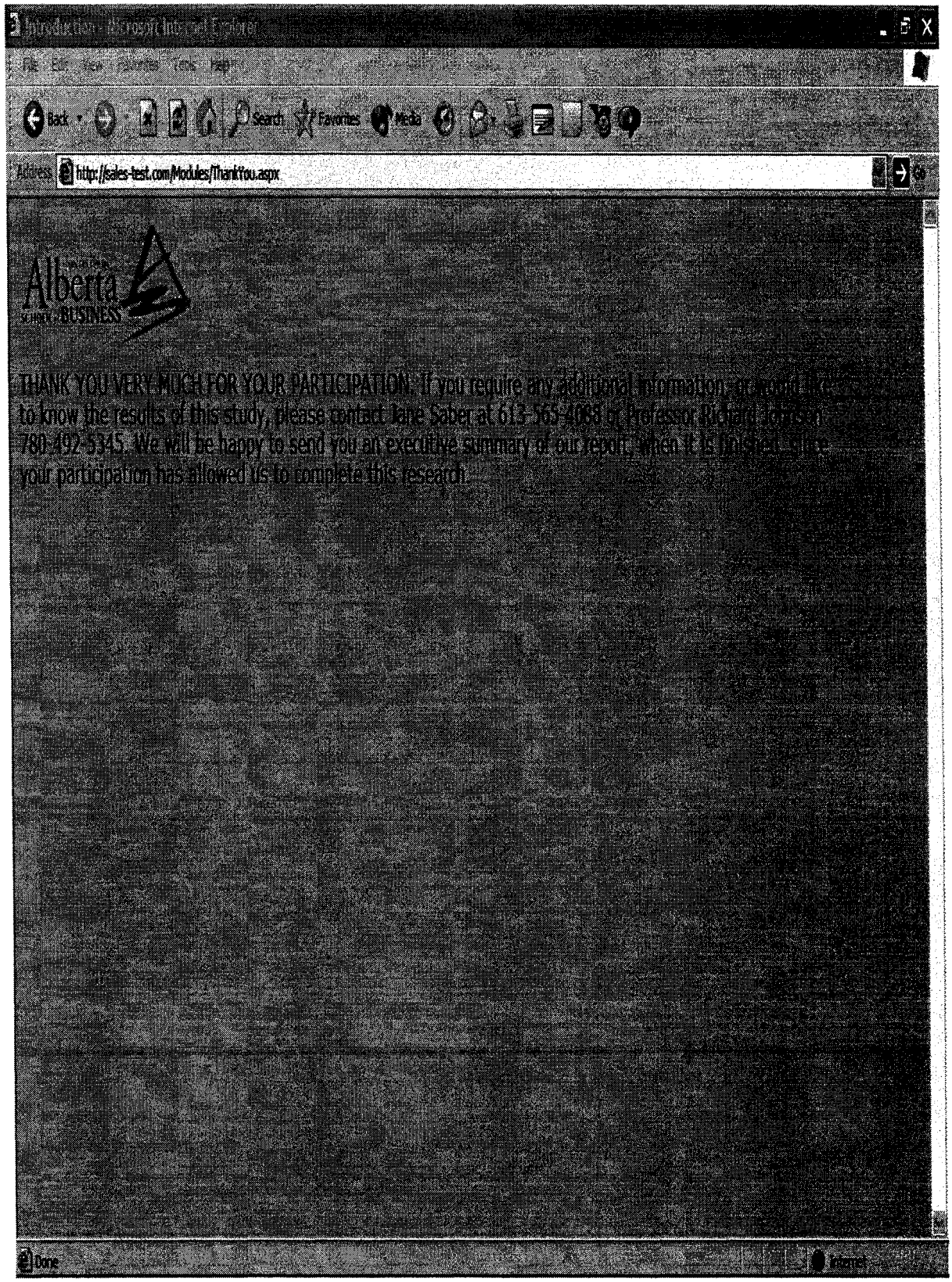
If, at any time, participants did not respond, they were presented with an error message, as follows:



Final consent page where participants gave names if they agreed to have us contact the brokers.



Once the studies were completed, the participants saw the following screen.



APPENDIX O. SEQUENTIAL LOGISTIC FITTING PROCEDURE

The results of the model fitting procedures are as follows.

Table 6-1; Model Fitting for SF

Model Comparison	Variables Included	Log Likelihood	DF	McFadden's Rho Squared	Term Included in Model
One	SF	142.13	3	0.01	Yes
Two	SF Button	145.62	6	0.01	No
Three	SF, Order	174.90	6	0.02	yes
Four	SF, Order, Cue position	762.65	9	0.07	Yes
Five	SF, Order, Cue position, signal	1046.21	12	0.10	Yes
Six	SF, Order, Cue position, signal, V	1625.84	15	0.15	Yes
Seven	SF, Order, Cue position, signal, V, V^2	1723.31	18	0.16	Yes
Eight	SF, Order, Cue position, signal, V, V^2 P	1856.27	21	0.17	Yes
Nine	SF, Order, Cue position, signal, V, V^2 P, P^2	1860.21	24	0.17	No
Ten	SF, Order, Cue position, signal, V, V^2 P, Cue position^2	1880.95	24	0.17	Yes
Eleven	SF, Order, Cue position, signal, V, V^2 P, Cue position^2, Order^2	1882.41	27	0.17	No
Twelve	SF, Order, Cue position, signal, V, V^2 P, Cue position^2, SF^2	1884.68	27	0.17	No
Thirteen	SF, Order, Cue position, signal, V, V^2 P, Cue position^2, V x SF	1894.91	27	0.17	Yes
Fourteen	SF, Order, Cue position, signal, V, V^2 P, Cue position^2, V x SF, P x SF	1897.53	30	0.17	Yes: theoretical
Fifteen	SF, Order, Cue position, signal, V, V^2 P, Cue position^2, V x SF, P x SF, Cue x Signal	1958.68	33	0.18	Yes
Sixteen	SF, Order, Cue position, Signal, V, V^2 P, Cue position^2, V x SF, Cue x Signal, V x P	1997.81	36	0.18	No

The subject number was included to control for subject heterogeneity.

The model that will be used for testing H4A is as follows:

Choice = SF + ID + Order + Cue position + Signal + V + P + Cue position^2 + V x SF + P x SF + Cue x Signal + V x P

Table 6-2: Model Fitting for SOCO

Model Comparison	Variables Included	Log Likelihood	DF	McFadden's Rho Squared	Term Included in Model
One	SOCO	80.07	3	0.01	Yes
Two	SOCO, Button	83.33	6	0.01	No
Three	SOCO, Order	111.08	6	0.01	yes
Four	SOCO, Order, Cue position	695.82	9	0.06	Yes
Five	SOCO, Order, Cue position, signal	977.38	12	0.09	Yes
Six	SOCO, Order, Cue position, signal, V	1554.93	15	0.14	Yes
Seven	SOCO, Order, Cue position, signal, V, V^2	1650.06	18	0.15	Yes
Eight	SOCO, Order, Cue position, signal, V, V^2 P	1781.09	21	0.16	Yes
Nine	SOCO, Order, Cue position, signal, V, V^2 P, P^2	1783.92	24	0.16	No
Ten	SOCO, Order, Cue position, signal, V, V^2 P, Cue position^2	1805.56	24	0.16	Yes
Eleven	SOCO, Order, Cue position, signal, V, V^2 P, Cue position^2, Order^2	1807.18	27	0.16	No
Twelve	SOCO, Order, Cue position, signal, V, V^2 P, Cue position^2, SOCO^2	1808.99	27	0.16	No
Thirteen	SOCO, Order, Cue position, signal, V, V^2 P, Cue position^2, V x SOCO	1823.23	27	0.17	Yes
Fourteen	SOCO, Order, Cue position, signal, V, V^2 P, Cue position^2, V x SOCO, P x SOCO	1826.40	30	0.17	Yes: theoretical
Fifteen	SOCO, Order, Cue position, signal, V, V^2 P, Cue position^2, V x SOCO, P x SOCO, Cue x Signal	1887.66	33	0.17	Yes
Sixteen	SOCO, Order, Cue position, Signal, V, V^2 P, Cue position^2, V x SOCO, Cue x Signal, V x P	1926.30	36	0.17	No

The subject number was included to control for subject heterogeneity.

The model that will be used for testing H4B is:

Choice = SOCO + ID + Order + Cue position + signal + V + P + Cue position^2 + Cue x Signal + V x SOCO + P x SOCO + V x P

Table 6-3: Model Fitting for ADAPTS

Model Comparison	Variables Included	Log Likelihood	DF	McFadden's Rho Squared	Term Included in Model
One	ADAPTS	399.74	3	.036	Yes
Two	ADAPTS, Button	402.05	6	.036	No
Three	ADAPTS, Order	432.64	6	.039	yes
Four	ADAPTS, Order, Cue position	1037.30	9	.094	Yes
Five	ADAPTS, Order, Cue position, signal	1326.16	12	.120	Yes
Six	ADAPTS, Order, Cue position, signal, V	1933.79	15	.175	Yes
Seven	ADAPTS, Order, Cue position, signal, V, V^2	2038.82	18	.185	Yes
Eight	ADAPTS, Order, Cue position, signal, V, V^2 P	2181.21	21	.197	Yes
Nine	ADAPTS, Order, Cue position, signal, V, V^2 P, P^2	2184.16	24	.198	No
Ten	ADAPTS, Order, Cue position, signal, V, V^2 P, Cue position^2	2206.88	24	.200	Yes
Eleven	ADAPTS, Order, Cue position, signal, V, V^2 P, Cue position^2, Order^2	2208.34	27	.200	No
Twelve	ADAPTS, Order, Cue position, signal, V, V^2 P, Cue position^2, ADAPTS^2	2211.04	27	.201	No
Thirteen	ADAPTS, Order, Cue position, signal, V, V^2 P, Cue position^2, V x ADAPTS	2218.90	27	.201	Yes
Fourteen	ADAPTS, Order, Cue position, signal, V, V^2 P, Cue position^2, V x ADAPTS, P x ADAPTS	2219.54	30	.201	Yes: theoretical
Fifteen	ADAPTS, Order, Cue position, signal, V, V^2 P, Cue position^2, V x ADAPTS, P x ADAPTS, Cue x Signal	2279.93	33	.206	Yes
Sixteen	ADAPTS, Order, Cue position, Signal, V, V^2 P, Cue position^2, V x ADAPTS, Cue x Signal, V x P	2324.34	36	.210	No

The subject number was included to control for subject heterogeneity.

The model chosen for H4C is as follows:

Choice = ADAPTS + ID + Order + Cue Position + Signal + V + P + Cue position^2 + V x ADAPTS + P x ADAPTS + V x P

APPENDIX P. LOGISTIC REGRESSION PROCEDURES

No Covariates: Logistic Regression

Multinomial LOGIT Analysis.

Dependent variable: CHOICE
Input records: 9960
Records for analysis: 9960
Sample split

Category choices

2	8528
3	501
4	209
9 (REFERENCE)	722
Total:	9960

Choice Group: 2: Respond

Parameter	Estimate	S.E.	t-ratio	p-value
CONSTANT	2.58	0.18	14.46	0.00
ID	0.00	0.00	-0.15	0.88
CUE	-0.09	0.09	-1.10	0.27
CUE2	0.02	0.01	2.08	0.04
V	0.37	0.06	6.09	0.00
P	-0.06	0.10	-0.63	0.53
ORDER	-0.02	0.01	-2.54	0.01
SIGNAL	-1.21	0.23	-5.26	0.00
V2	0.00	0.05	0.02	0.99
CUE*SIGNAL	0.29	0.05	5.80	0.00
V*P	0.18	0.07	2.50	0.01

Choice Group 3: Close

Parameter	Estimate	S.E.	t-ratio	p-value
CONSTANT	-3.15	.51	-.617	.000
ID	.01	.003	1.98	.48
CUE	-.002	.187	-011	.991
CUE2	.071	.08	3.85	.000
V	.867	.078	11.13	.000
P	.399	.136	2.94	.003
ORDER	-.053	.015	-3.53	.000
SIGNAL	1.21	.458	2.64	.008
V2	.319	.062	5.17	.000
CUE*SIGNAL	-.015	.077	-.19	.848
V*P	.485	.093	5.22	.000

Choice Group 4: End

Parameter	Estimate	S.E.	t-ratio	p-value
CONSTANT	-4.49	0.83	-5.39	0.00
ID	0.00	0.00	1.22	0.22
CUE	0.11	0.29	0.39	0.70
CUE2	0.04	0.03	1.32	0.19
V	-0.35	0.11	-3.33	0.00
P	-0.13	0.19	-0.65	0.51
ORDER	-0.04	0.02	-1.74	0.08
SIGNAL	0.93	0.77	1.21	0.23
V2	0.47	0.08	5.71	0.00
CUE*SIGNAL	0.19	0.13	1.45	0.15
V*P	0.46	0.12	3.93	0.00

Choice Group: 2: Respond

Parameter	Odds Ratio	Upper	Lower
ID	1.00	1.00	1.00
CUE	0.91	1.08	0.77
CUE2	1.02	1.04	1.00
V	1.44	1.62	1.28
P	0.94	1.14	0.77
ORDER	0.98	1.00	0.96
SIGNAL	0.30	0.47	0.19
V2	1.00	1.10	0.91
CUE*SIGNAL	1.33	1.47	1.21
V*P	1.20	1.38	1.04

Choice Group 3: Close

Parameter	Odds Ratio	Upper	Lower
ID	1.01	1.01	1.00
CUE	1.00	1.44	0.69
CUE2	1.07	1.11	1.04
V	2.38	2.77	2.04
P	1.49	1.95	1.14
ORDER	0.95	0.98	0.92
SIGNAL	3.36	8.23	1.37
V2	1.38	1.55	1.22
CUE*SIGNAL	0.99	1.15	0.85
V*P	1.62	1.95	1.35

Choice Group 4: End

Parameter	Odds Ratio	Upper	Lower
ID	1.00	1.01	1.00
CUE	1.12	1.96	0.64
CUE2	1.04	1.10	0.98
V	0.71	0.87	0.58
P	0.88	1.29	0.61
ORDER	0.96	1.01	0.92
SIGNAL	2.52	11.37	0.56
V2	1.61	1.89	1.37
CUE*SIGNAL	1.20	1.55	0.94
V*P	1.58	1.99	1.26

Log Likelihood of constants only model = LL(0) = -5523.913
2*[LL(N)-LL(0)] = 1819.977 with 30 df Chi-sq p-value = 0.000
McFadden's Rho-Squared = 0.165

SF: General Logistic Procedure

Multinomial LOGIT Analysis.

Dependent variable:	CHOICE
Input records:	9960
Records for analysis:	9960
Sample split	

Category choices	
2	8528
3	501
4	209
9 (REFERENCE)	722
Total:	9960

Choice Group: 2: Respond

Parameter	Estimate	S.E.	t-ratio	p-value
CONSTANT	2.58	0.18	14.46	0.00
ID	0.00	0.00	-0.15	0.88
CUE	-0.10	0.09	-1.12	0.27
CUE2	0.02	0.01	2.09	0.04
V	0.36	0.06	5.93	0.00
P	-0.07	0.10	-0.70	0.49
ORDER	-0.02	0.01	-2.57	0.01
SIGNAL	-1.20	0.23	-5.23	0.00
V2	0.01	0.05	0.20	0.84
CUE*SIGNAL	0.29	0.05	5.85	0.00
V*SF	-0.17	0.05	-3.10	0.00
P*SF	0.08	0.09	0.85	0.40
SF	-0.01	0.04	-0.34	0.73
V*P	0.17	0.07	2.31	0.02

Choice Group 3: Close

Parameter	Estimate	S.E.	t-ratio	p-value
CONSTANT	-3.26	0.52	-6.32	0.00
ID	0.00	0.00	0.81	0.42
CUE	-0.01	0.19	-0.08	0.94
CUE2	0.07	0.02	3.92	0.00
V	0.87	0.08	10.71	0.00
P	0.45	0.14	3.13	0.00
ORDER	-0.05	0.02	-3.16	0.00
SIGNAL	1.19	0.46	2.57	0.01
V2	0.35	0.06	5.62	0.00
CUE*SIGNAL	-0.01	0.08	-0.07	0.95
V*SF	-0.14	0.07	-1.93	0.05
P*SF	0.01	0.13	0.07	0.95
SF	0.67	0.08	8.67	0.00
V*P	0.49	0.10	5.19	0.00

Choice Group 4: End

Parameter	Estimate	S.E.	t-ratio	p-value
CONSTANT	-4.45	0.83	-5.34	0.00
ID	0.00	0.00	0.97	0.33
CUE	0.11	0.29	0.38	0.71
CUE2	0.04	0.03	1.33	0.18
V	-0.36	0.11	-3.38	0.00
P	-0.14	0.19	-0.71	0.48
ORDER	-0.04	0.02	-1.72	0.09
SIGNAL	0.87	0.77	1.13	0.26
V2	0.47	0.08	5.62	0.00
CUE*SIGNAL	0.19	0.13	1.51	0.13
V*SF	-0.29	0.09	-3.40	0.00
P*SF	0.11	0.14	0.78	0.44
SF	0.03	0.13	0.25	0.80
V*P	0.45	0.12	3.82	0.00

Choice Group: 2: Respond

Parameter	Odds Ratio	Upper	Lower
ID	1.00	1.00	1.00
CUE	0.91	1.07	0.77
CUE2	1.02	1.04	1.00
V	1.43	1.61	1.27
P	0.93	1.14	0.77
ORDER	0.98	1.00	0.96
SIGNAL	0.30	0.47	0.19
V2	1.01	1.11	0.92
CUE*SIGNAL	1.34	1.48	1.21
V*SF	0.85	0.94	0.76
P*SF	1.08	1.30	0.90
SF	0.99	1.07	0.91
V*P	1.19	1.37	1.03

Choice Group 3: Close

Parameter	Odds Ratio	Upper	Lower
ID	1.00	1.01	1.00
CUE	0.99	1.43	0.68
CUE2	1.08	1.12	1.04
V	-0.14	0.07	-1.93
P	0.01	0.13	0.07
ORDER	0.95	0.98	0.92
SIGNAL	3.29	8.17	1.32
V2	1.42	1.61	1.26
CUE*SIGNAL	1.00	1.16	0.85
V*SF	0.87	1.00	0.76
P*SF	1.01	1.29	0.79
SF	1.96	2.29	1.69
V*P	1.63	1.97	1.36

Choice Group 4: End

Parameter	Odds Ratio	Upper	Lower
ID	1.00	1.01	1.00
CUE	1.12	1.96	0.64
CUE2	1.04	1.10	0.98
V	0.70	0.86	0.56
P	0.87	1.27	0.60
ORDER	0.96	1.01	0.92
SIGNAL	2.39	10.82	0.53
V2	1.61	1.89	1.36
CUE*SIGNAL	1.21	1.56	0.94
V*SF	0.75	0.88	0.63
P*SF	1.11	1.45	0.85
SF	1.03	1.32	0.81
V*P	1.58	1.99	1.25

Log Likelihood of constants only model = LL(0) = -5523.913
2*[LL(N)-LL(0)] = 2000.265 with 39 df Chi-sq p-value = 0.000
McFadden's Rho-Squared = 0.181

SOCO: General Logistic Procedure

Multinomial LOGIT Analysis.

Dependent variable: CHOICE
Input records: 9960
Records for analysis: 9960
Sample split

Category choices

2	8528
3	501
4	209
9 (REFERENCE)	722
Total:	9960

Choice Group: 2: Respond

Parameter	Estimate	S.E.	t-ratio	p-value
CONSTANT	2.57	0.18	14.45	0.00
ID	0.00	0.00	-0.15	0.88
CUE	-0.09	0.09	-1.10	0.27
CUE2	0.02	0.01	2.08	0.04
V	0.36	0.06	5.99	0.00
P	-0.07	0.10	-0.68	0.50
ORDER	-0.02	0.01	-2.54	0.01
SIGNAL	-1.21	0.23	-5.26	0.00
V2	0.00	0.05	0.01	0.99
CUE*SIGNAL	0.29	0.05	5.80	0.00
SOCO	-0.01	0.04	-0.22	0.83
V*SOCO	-0.02	0.05	-0.37	0.71
P*SOCO	-0.05	0.09	-0.48	0.63
V*P	0.18	0.07	2.51	0.01

Choice Group 3: Close

Parameter	Estimate	S.E.	t-ratio	p-value
CONSTANT	-3.20	0.51	-6.23	0.00
ID	0.01	0.00	1.67	0.10
CUE	-0.01	0.19	-0.05	0.96
CUE2	0.07	0.02	3.89	0.00
V	0.86	0.08	10.91	0.00
P	0.43	0.14	3.07	0.00
ORDER	-0.05	0.02	-3.34	0.00
SIGNAL	1.20	0.46	2.59	0.01
V2	0.33	0.06	5.39	0.00
CUE*SIGNAL	-0.01	0.08	-0.14	0.89
SOCO	0.47	0.07	6.42	0.00
V*SOCO	0.04	0.07	0.54	0.59
P*SOCO	-0.14	0.13	-1.12	0.26
V*P	0.50	0.09	5.35	0.00

Choice Group 4: End

Parameter	Estimate	S.E.	t-ratio	p-value
CONSTANT	-4.57	0.84	-5.46	0.00
ID	0.00	0.00	1.11	0.27
CUE	0.12	0.29	0.42	0.68
CUE2	0.04	0.03	1.28	0.20
V	-0.44	0.12	-3.79	0.00
P	-0.17	0.20	-0.85	0.40
ORDER	-0.03	0.02	-1.42	0.16
SIGNAL	0.79	0.77	1.03	0.31
V2	0.44	0.09	5.13	0.00
CUE*SIGNAL	0.19	0.13	1.49	0.14
SOCO	-0.15	0.12	-1.25	0.21
V*SOCO	-0.29	0.09	-3.36	0.00
P*SOCO	-0.12	0.14	-0.84	0.40
V*P	0.44	0.12	3.67	0.00

95.0 % bounds

Choice Group: 2: Respond

Parameter	Odds Ratio	Upper	Lower
ID	1.00	1.00	1.00
CUE	0.91	1.08	0.77
CUE2	1.02	1.04	1.00
V	1.44	1.62	1.28
P	0.93	1.14	0.77
ORDER	0.98	1.00	0.96
SIGNAL	0.30	0.47	0.19
V2	1.00	1.10	0.91
CUE*SIGNAL	1.34	1.47	1.21
SOCO	0.99	1.08	0.91
V*SOCO	0.98	1.09	0.88
P*SOCO	0.96	1.15	0.80
V*P	1.20	1.38	1.04

Choice Group 3: Close

Parameter	Odds Ratio	Upper	Lower
ID	1.01	1.01	1.00
CUE	0.99	1.43	0.69
CUE2	1.08	1.12	1.04
V	2.36	2.76	2.03
P	1.53	2.01	1.17
ORDER	0.95	0.98	0.92
SIGNAL	3.31	8.17	1.34
V2	1.40	1.58	1.24
CUE*SIGNAL	0.99	1.15	0.85
SOCO	1.61	1.86	1.39
V*SOCO	1.04	1.19	0.90
P*SOCO	0.87	1.11	0.68
V*P	1.65	1.98	1.37

Choice Group 4: End

Parameter	Odds Ratio	Upper	Lower
ID	1.00	1.01	1.00
CUE	1.13	1.98	0.64
CUE2	1.04	1.10	0.98
V	0.64	0.81	0.51
P	0.85	1.25	0.58
ORDER	0.97	1.01	0.93
SIGNAL	2.21	10.06	0.49
V2	1.55	1.83	1.31
CUE*SIGNAL	1.21	1.56	0.94
SOCO	0.86	1.09	0.67
V*SOCO	0.75	0.89	0.63
P*SOCO	0.89	1.17	0.68
V*P	1.55	1.97	1.23

Log Likelihood of constants only model = LL(0) = -5523.913
2*[LL(N)-LL(0)] = 1932.438 with 39 df Chi-sq p-value = 0.000
McFadden's Rho-Squared = 0.175

ADAPTS: General Logistic Procedure

Multinomial LOGIT Analysis.

Dependent variable: CHOICE
Input records: 9960
Records for analysis: 9960
Sample split

Category choices

2	8528
3	501
4	209
9 (REFERENCE)	722
Total:	9960

Choice Group: 2: Respond

Parameter	Estimate	S.E.	t-ratio	p-value
CONSTANT	2.58	0.18	14.44	0.00
ID	0.00	0.00	-0.15	0.88
CUE	-0.10	0.09	-1.12	0.26
CUE2	0.02	0.01	2.10	0.04
V	0.34	0.06	5.53	0.00
P	-0.06	0.10	-0.55	0.58
ORDER	-0.02	0.01	-2.51	0.01
SIGNAL	-1.21	0.23	-5.24	0.00
V2	0.01	0.05	0.13	0.90
ADA	0.00	0.04	0.08	0.94
CUE*SIGNAL	0.29	0.05	5.84	0.00
V*ADA	-0.17	0.06	-2.84	0.01
P*ADA	0.11	0.10	1.06	0.29
V*P	0.17	0.07	2.28	0.02

Choice Group 3: Close

Parameter	Estimate	S.E.	t-ratio	p-value
CONSTANT	-3.74	0.53	-7.07	0.00
ID	0.00	0.00	1.31	0.19
CUE	-0.05	0.19	-0.28	0.78
CUE2	0.08	0.02	4.22	0.00
V	0.98	0.09	10.80	0.00
P	0.54	0.16	3.42	0.00
ORDER	-0.05	0.02	-3.26	0.00
SIGNAL	1.26	0.48	2.65	0.01
V2	0.38	0.07	5.87	0.00
ADA	1.41	0.09	16.17	0.00
CUE*SIGNAL	-0.01	0.08	-0.18	0.86
V*ADA	-0.23	0.08	-2.77	0.01
P*ADA	0.02	0.14	0.12	0.90
V*P	0.52	0.10	5.26	0.00

Choice Group 4: End

Parameter	Estimate	S.E.	t-ratio	p-value
CONSTANT	-4.49	0.83	-5.40	0.00
ID	0.00	0.00	1.20	0.23
CUE	0.11	0.29	0.37	0.71
CUE2	0.04	0.03	1.34	0.18
V	-0.39	0.11	-3.59	0.00
P	-0.12	0.19	-0.60	0.55
ORDER	-0.04	0.02	-1.63	0.10
SIGNAL	0.89	0.77	1.16	0.25
V2	0.47	0.08	5.65	0.00
ADA	0.03	0.14	0.22	0.83
CUE*SIGNAL	0.19	0.13	1.49	0.14
V*ADA	-0.25	0.10	-2.64	0.01
P*ADA	0.14	0.15	0.97	0.33
V*P	0.45	0.12	3.79	0.00

Choice Group: 2: Respond

Parameter	Odds Ratio	Upper	Lower
ID	1.00	1.00	1.00
CUE	0.91	1.07	0.77
CUE2	1.02	1.04	1.00
V	1.40	1.58	1.24
P	0.95	1.15	0.78
ORDER	0.98	1.00	0.96
SIGNAL	0.30	0.47	0.19
V2	1.01	1.10	0.92
ADA	1.00	1.09	0.92
CUE*SIGNAL	1.34	1.48	1.21
V*ADA	0.85	0.95	0.76
P*ADA	1.11	1.35	0.91
V*P	1.18	1.36	1.02

Choice Group 3: Close

Parameter	Odds Ratio	Upper	Lower
ID	1.00	1.01	1.00
CUE	0.95	1.39	0.65
CUE2	1.09	1.13	1.05
V	2.66	3.18	2.23
P	1.72	2.34	1.26
ORDER	0.95	0.98	0.92
SIGNAL	3.54	9.00	1.39
V2	1.46	1.66	1.29
ADA	4.08	4.84	3.44
CUE*SIGNAL	0.99	1.15	0.84
V*ADA	0.80	0.94	0.68
P*ADA	1.02	1.34	0.77
V*P	1.68	2.04	1.38

Choice Group 4: End

Parameter	Odds Ratio	Upper	Lower
ID	1.00	1.01	1.00
CUE	1.11	1.95	0.63
CUE2	1.04	1.10	0.98
V	0.68	0.84	0.54
P	0.89	1.30	0.61
ORDER	0.96	1.01	0.92
SIGNAL	2.44	11.04	0.54
V2	1.61	1.89	1.36
ADA	1.03	1.35	0.79
CUE*SIGNAL	1.21	1.56	0.94
V*ADA	0.78	0.94	0.65
P*ADA	1.15	1.53	0.87
V*P	1.57	1.98	1.24

Log Likelihood of constants only model = LL(0) = -5523.913
2*[LL(N)-LL(0)] = 2330.440 with 39 df Chi-sq p-value = 0.000
McFadden's Rho-Squared = 0.211