

Can Real Estate Agents Influence Homebuyer Property Perceptions Through Their Appearance and Hyperbolic Rhetoric?

by

Michael J. Seiler*
Professor and Robert M. Stanton Chair of Real Estate
Old Dominion University
2154 Constant Hall
Norfolk, VA 23529-0223
mseiler@odu.edu
757.683.3505 phone
757.683.3258 fax

Mark Lane
Associate Professor of Finance
Hawaii Pacific University
College of Business Administration
Honolulu, HI
mlane@hpu.edu
808.544.0826

Vicky L. Seiler
Research Professor
Johns Hopkins University
Carey Business School
The Edward St. John Department of Real Estate
vickyseiler@cox.net
757.321.3030

and

David M. Harrison
Associate Professor of Finance
Box 42101
Rawls College of Business
Texas Tech University
Lubbock, TX 79409-2101
david.m.harrison@ttu.edu
806.742.3190

* Contact Author

August, 2010

Can Real Estate Agents Influence Homebuyer Property Perceptions Through Their Appearance and Hyperbolic Rhetoric?

This study takes 1,594 potential homebuyers on a Web-based audio/visual tour of a typically priced home in their area. Using voice altering software as well as before and after extreme make-over photos, we are able to isolate the effect of real estate agent characteristics (attractiveness, gender, and hyperbolic rhetoric) on their ability to change the opinions of potential homebuyers. We find that attractive female agents who employ hyperbolic rhetoric are significantly able to alter the impression of the property in the minds of respondents primarily through establishing source credibility (trust). The rooms most influenced by the effective agent are the first (curb appeal) and last (back yard/view) impressions of the home.

Key words: Behavioral real estate; hyperbolic rhetoric; physical attractiveness

Can Real Estate Agents Influence Homebuyer Property Perceptions Through Their Appearance and Hyperbolic Rhetoric?

Introduction

The ability to persuade is important because it can get you out of a speeding ticket, help get your kids to eat their vegetables, find employment (Morrow, 1990), earn a higher salary (Biddle and Hamermesh, 1998), and even get promoted (Marlowe, Schneider, and Nelson, 1996). Persuasiveness is not just conveyed through words. Even criminals (who are commonly advised not to take the stand and speak) benefit from having the “right” look during judge sentencing. Montepare and Zebrowitz (1998) document that judges are more likely to believe (and give more lenient sentences to) baby-faced defendants who deny charges relating to intentional transgressions. This is because baby-faced individuals, whose appearance is more child-like, are viewed as being more innocent. Conversely, in cases where the defendant is being charged with a crime of neglect or carelessness, judges are softer on those with mature faces which are perceived as being more competent. In the political arena, Todorov et al. (2005) find that physical attractiveness alone can successfully predict nearly 70% of elections. In sum, persuasiveness is a characteristic that can be achieved through words and/or mere physical appearance.

In this study, we examine the effect that real estate agent physical attractiveness, gender, and hyperbolic rhetoric (extra words/opinions/oratory) have on a homebuyer’s perception of residential real estate. To conduct this experiment, we create 8 (2 x 2 x 2) unique variations of a Web-based tour of the same home. The key to experimental design is to hold constant other factors while changing only the variable of interest. To control

for the level of agent physical attractiveness, we use before and after makeover photos for both a male and female real estate agent¹. This is done because variables such as ethnic make-up, facial shape and symmetry, eye shape and color², size of forehead³, and so forth, are essentially impossible to hold constant when photos of two different people are used⁴. To isolate the effect of hyperbolic rhetoric versus a neutral presentation of the home, we begin by recording a positive description of the property. Throughout this tour, hyperbolic rhetoric is used to enhance the perception of the property. We then digitally delete all the superlatives to arrive at our neutral presentation of the property where just the objective, quantifiable facts about the property are provided.

In an ideal experiment, to examine the effect of gender while holding everything else constant, we would have liked to have found before and after makeover photos of people who immediately afterwards underwent a gender re-orientation and then again did a before and after makeover. Since this is not practical/possible, we attempt the next best thing. We selected “makeover” photographs for a man and women of similar physical attractiveness. By using these before and after paired photos, we captured a shift from unattractive to attractive for both genders⁵. We then took the identical neutral and positive property descriptions spoken with a female voice and digitally altered them to

¹ Feingold (1992) and Langlois et al. (2000) find that measures of beauty are highly reliable (consistent) both within and across-cultures. Interestingly, even infants seem to agree with what constitutes beauty (Langlois et al., 1991; Langlois, Roggman, and Rieser-Danner, 1990; and Langlois et al., 1987).

² In a study of consumers, Simpson, Sturges, and Tanguma (2008) conclude that advertisers can better connect with their target market when their spokesperson shares the same eye color.

³ Zebrowitz et al. (2003) associates large foreheads with a higher perceived level of intelligence.

⁴ After considering thousands of photos, images of a Caucasian man and woman were chosen that are as similar in age, genetic make-up, hair and eye color, etc., as humanly possible. The images were adjusted so that the facial features were the same size across all images.

⁵ We use an Ohanian (1990) inspired approach to ensure that the level of attractiveness was held as reasonably constant as possible when switching agent genders.

create a male's voice⁶. This allows us to hold constant countless subtle, otherwise variable attributes such as voice inflection, dialect, word emphasize, and so forth, when going from the female agent photo to the male agent photo.

We even designed the experiment to steer clear of biases relating to the name we choose for the agent. We did not want to change the name across gender, so we selected a common, yet gender-neutral first name. Concerning the agent's last name and firm name, we wanted to remain neutral as well. That is, we did not want to use a unique name that participants thought they recognized. After conducting a search through the Social Security Administration database for the most common gender-neutral first names and the most common last names in the United States, we decided on using a constant fictitious agent named Chris Brown of Jones Realty. To our knowledge, this is the most complete and exhaustive effort to hold constant so many key variables at once.

In this study, we investigate a precise set of questions. Specifically, "Can an attractive agent positively influence a homebuyer's perception of a property?" "Can a real estate agent influence the perception of the home simply by using hyperbolic rhetoric when describing the residence?" "Do the results hold independent of the agent's gender?" Do any of these answers change when considering the characteristics of the potential homebuyer?

Literature Review

Agent Characteristics: Physical Attractiveness

⁶ This new audio file was then played to a test group unfamiliar with the project. The people's thoughts and reactions to the altered voice were recorded. None of the people tested suspected that the voice had been digitally altered in any way, shape, or form. No one suspected the altered recording was not a male's.

Past studies by Praxmarer and Rossiter (2009), Cialdini (2009), Bower and Landreth (2001), Kamins (1990), and Patzer (1985, 1983), among countless others, have shown a distinctive and powerful linkage between a person's physical attractiveness and their ability to persuade others (both intentionally and unintentionally and on both a conscious and subconscious level⁷). Babad, Inbar, and Rosenthal (1982) document that attractive students receive better grades. Upon graduation, attractive individuals are far more likely to be hired (Rynes and Gerhart, 1990; Bardack and McAndrew, 1985; Marlowe, Schneider, and Nelson, 1996; Morrow, 1990; and Raza and Carpenter, 1987), will earn more money (Frieze, Olson, and Russell, 1991; Biddle and Hamermesh, 1998; Hamermesh and Biddle, 1994)⁸, and are more likely to be promoted (Jackson, 1983; Marlowe, Schneider, and Nelson, 1996; Ross and Ferris, 1981; and Morrow et al. 1990).

In the financial sector, Graham, Harvey, and Puri (2010) examine the still photo facial features of CEOs. CEOs' photos are associated with the qualities of being more competent, but less likeable than non-CEOs. This result is even stronger for CEOs of large firms. Moreover, the more mature (as opposed to baby-faced) a CEO looks, the higher people rate them in terms of overall perceived competence. Interestingly, the authors find no linkage between competent looking CEOs and their firm's performance. As a compliment to this study, Rule and Ambady (2008) also examined CEO facial features as they relate to corporate profits and found that power-related traits such as a look of competence and facial maturity are linked with profits.

⁷ The subconscious attractiveness effect was most prominently displayed when Cialdini (2009) examined voter choices of political candidates. Attractive candidates were favored 5:2 over unattractive candidates. Yet voters polled afterwards vehemently denied (even to the point of being personally offended) that physical features of the candidates had anything to do with their vote. In support of Cialdini's (2009) finding is the Todorov et al. (2005) result that winners of political races could be predicted, using a only still photograph, in almost 70% of all races.

⁸ Roszell, Kennedy, and Grabb (1989) found that only attractive men earn more. The result did not hold for women.

Ravina (2008) examined unsecured personal loans to see if qualitative borrower characteristics influence the decision to loan money as well as the characteristics of the resulting loan. The author finds that attractive borrowers are 1.41% more likely to get a loan. Moreover, attractive borrowers pay 81 basis points less than an average-looking borrower holding borrower risk constant. Consistent with the better treatment results of Mobius and Rosenblat (2006) and Andreoni and Petrie (2008), Ravina (2008) finds that the better treated attractive borrowers actually had substantially lower loan performance.

Agent Characteristics: Hyperbolic Rhetoric in the Property Description

When a residential real estate property is listed on the Multiple Listing Service (MLS), in addition to the standard quantifiable characteristics of the home (number of bedrooms and bathrooms, square footage, and so forth), there is an area where the real estate agent can include a qualitative description of the property or anything else they choose to share about the home. Haag, Rutherford, and Thomson (2000) examined the remarks included in property listings and their resulting impact on both time on the market (TOM) and ultimate selling price. The authors further divided agent comments into remarks that are (1) factually verifiable such as being recently painted, new roof, located on or near a lake, and (2) mere statements of opinion such as “good buy,” “motivated seller,” “good location,” and “well-maintained.” The authors find that three of the four variables relating to the agents’ statements of opinion were statistically significant in explaining selling prices. Interestingly, the negative coefficients indicate that the homes sold for less, not more, as hypothesized. Consistent with the pricing result, homes in their sample took significantly longer to sell based on the inclusion of three of the four groups of opinion-

based agent comments. The authors reason that the significance of their results imply the agent comments do provide valuable information about the home. Concerning the incorrect signs on their significant variables, the authors argue that maybe agents include the positive words in their property description to create interest in cases where the property was not attractive enough to generate interest on its own. That is, homebuyers might have viewed the positive claims in a “thou dost protest too much” sense.

Agent Characteristics: Agent’s Gender

Langlois et al. (2000) and Feingold (1992) document that the level of physical attractiveness causes evaluators to project positively perceived attributes onto both males and females (and for both adults and children) who are evaluated. Moreover, these results do not vary based on the age of the person being evaluated. A theoretically opposing argument is made in Buss and Barnes (1986) and Buss and Schmitt (1993) who posit that it is women who should benefit more from the beauty premium because men hold beauty as the primary factor when evaluating women. Alternatively, when women evaluate men, beauty is only one of several important factors including wealth, health, power, etc. Because many of these attributes cannot be gleaned from a still photograph, the effect of physical attractiveness should be more pronounced for women in our study.

Respondent’s Gender

The level of persuasion is a function of both the recipient and deliverer of the message. In a study of advertising effectiveness, Baker and Churchill (1977) find that when a male model was used in an advertisement, females were more likely to indicate a purchase

intention than men. Interestingly, it did not matter if the male was attractive or not. In the context of political campaigns, Berggren, Jordahl, and Poutvaara (2010) show that women almost always vote for the more attractive candidate; Men do most of the time.

Source Credibility/Trust

Ohanian (1990) uses the phrase “source credibility” or “trust” to describe the degree to which a buyer believes and incorporates into their decision-making process the information that is being conveyed by the sales person. O’Mahony and Meenaghan (1998), O’Hara, Netemeyer, and Burton (1991), and Petty and Cacioppo (1986) document the positive linkage between a source’s trustworthiness and their ability to persuade or influence recipients of their message. Buchan, Croson, and Solnick (2008), Chaudhuri and Gangadharan (2007), and Scharlemann et al. (2001) find that men are more willing to give trust than women, whereas Croson and Buchan (1999) and Glaeser et al. (2000) find no gender differences relating to trust.

In a more detailed examination, it seems that trust is dependent on the gender of both the presenter of information and the recipient. Scharlemann et al. (2001) show that males trust females more, and that females trust males more. Finally, women do not trust other women.

Similarity

Smith (1998) finds that the greater the similarity between the sales person and the evaluator, the more able the salesperson is to persuade. Race, gender, and age, all of which can be gleaned from a photograph, are the most important variables of similarity

(Chawla and Natarajan, 1995; Palmer and Bejou, 1995; Caballero, Lumpkin, and Madden, 1989; Turner, 1982; and Woodside and Davenport, 1974). But, any common ground should represent a move towards similarity and therefore persuasion.

Ethnicity

Ravina (2008) finds that black lenders are more likely to lend to black borrowers. Moreover, these borrowers were less likely to default on the loan. And while white lenders were not more likely to lend to white lenders, they did offer loans at a lower interest rate. Eckel and Wilson (2003) and Burns (2003) find less trust when going across black and white racial lines. Fershtman and Gneezy (2001) find trust breaks down when crossing ethnic barriers in Israel. These findings are consistent with social network research of McPherson, Smith-Lovin, and Cook (2001) who find that people are most likely to form groups of similar race/ethnic make-up. Considerations such as age, education, workplace, and gender are all secondary grouping considerations. Taken together, we hypothesize that Caucasians will provide higher (more favorable) home price estimation than any other races within our sample because both real estate agents we use are ostensibly Caucasian.

Study Design

Why Residential Real Estate?

The exact market clearing price of a particular residential property is difficult to agree upon because of differences in individual tastes and preferences. The result is a price that Rees (1993) refers to as a “zone of indeterminacy.” Alternatively stated, a potential

buyer's willingness to pay (WTP) for a property is both a subjective and emotional decision. As such, it would seem a likely arena in which behavioral consideration might be taken into consideration (again, on either a conscious or subconscious level).

Residential real estate also continues to gain a greater Internet presence over time (Seiler et al., 2008). Agent Websites have been repeatedly shown to be necessary and effective places to showcase homes that are for sale (Seiler, Seiler and Bond, 2001). Studies also show that when people search for homes on the Internet, first impressions can make all the difference (Seiler, Madhavan, and Potts, 2010). With thousands of homes on the market to consider, potential homebuyers spend mere seconds evaluating a property (usually by seeing the front of the home - a.k.a. the "curb appeal" photo). If the property has no curb appeal, the homebuyer will quickly move on to the next home's photo. It is reasonable to conclude then that anything that catches the eye of an Internet surfer, might slow them down long enough to take a second look⁹. An attractive property can catch the eye of a potential homebuyer, and an attractive agent might be able to do the same thing¹⁰.

The level of product involvement is a concept that could be used to argue that a real estate agent would *not* be able to influence a homebuyer's perception of a residential

⁹ Huhmann, Franke, and Mothersbaugh (2009) study the impact of including a photograph with an advertisement in a magazine. Including a photo of an average-looking person increased customer attention to the ad by 4%. But, including a photo of an attractive celebrity increased the attention score of the ad by 20%. Internet advertisers often use the photo of an attractive woman to sell unrelated things, say financial services. Their hope is to draw the eye of the individual within the target market to the photo just long enough that the person might observe (even read) their advertisement. Although scientifically yet to be tested, the concept is certainly being employed on the Internet as well.

¹⁰ Observationally speaking, real estate agents who pay to use their photograph on the side of a bus or on a park bench tend to be more on the attractive end of the spectrum. It would seem this strategy is already at work within the field.

real estate property¹¹. Low involvement items are characterized by lower prices and lower importance such as buying a pack of gum. Conversely, a high involvement item typically has a very high cost and requires much time and consideration. Examples include buying a wedding ring or a new car. It can be argued that buying a home represents one of, if not the, highest involvement purchases one will ever make. Petty, Cacioppo, and Schumann (1983) and Chaiken (1980) maintain that high involvement items require a person to devote a high degree of cognitive effort and attention towards the decision. As such, the person is more likely to look past the superficial and superfluous issues and key in on the underlying product. If this is the case, a homebuyer might be able to steer clear of the behavioral issues involved in the persuasion equation. Alternatively, if these influences are indeed subconscious, it might not matter how much a participant tries to sidestep issues relating to attractiveness, gender, and hyperbolic rhetoric. The influences will exist just the same.

Data

Current and prospective owner-occupant homeowners from across the United States were used for the collection of all data employed in this experiment. We access an independently formed network of individuals who have identified themselves as being willing to participate in real estate related surveys. We then post notice that our survey is currently available along with a brief description and a list of respondent restrictive qualifiers. In addition to restricting the survey to current (and currently searching) owner-occupants, we also limit it to those with a past approval rating of greater than 95%.

¹¹ Richins and Bloch (1986), among others, sometimes refer to the distinction as situational (low) versus enduring (high) involvement.

Participant approval ratings are achieved by having done a thorough and thoughtful job on past surveys¹².

We take various additional steps to ensure that respondents fully engage in our experiment. For example, after the participant is taken on the guided home tour, we provide an audible code that must be entered into the survey correctly to be included in our final sample. Given that one of our variants is “hyperbolic rhetoric,” it is necessary to verify the respondent is able to hear the voice of the agent. Another step to ensure the participants are focused on the experiment involves asking the respondent to enter a certain number, say “3,” for a particular survey question. Two of these questions are sprinkled throughout the survey, and if either one is answered incorrectly, that respondent is pulled from the final sample.

To examine the impact of attractiveness, we are truly able to hold constant other agent characteristics because we use before and after make-over photos for each gender. This design allows for us to hold constant (within the gender, but not across) such intangibles as subtle nuances in ethnic make-up that past cited studies have shown can make a difference. In terms of voice and hyperbolic rhetoric, we begin by recording a single tour of the home using the female voice with hyperbolic rhetoric. Then, using this recording, we go back and remove all the hyperbolic rhetoric phrases and words to arrive at a “Sargent Joe Friday” type property description – where just the facts of the home are conveyed. Now there is a hyperbolic rhetoric and a non-hyperbolic rhetoric recording that is otherwise perfectly identical. In an attempt to hold these variants constant across

¹² Organizations within the pool of survey providers can “flag” participants who did not do a good job on a survey collection effort. Examples for being flagged include not completing the survey, providing nonsense answers, etc. It is relatively easy to identify those who sped through too quickly since exact start and stop times are recorded electronically and stored as part of the output files.

gender lines, we use a voice altering software program to convert each female recording into a male recording equivalent. Finally, since voice and physical appear are unrelated, we use the resulting voice recordings to map onto our four real estate agent photographs. What results is our best effort to truly isolate the impact of each of these three variables (agent attractiveness, agent gender, and hyperbolic rhetoric) to determine which is most important in changing the opinions of potential homebuyers. We use a still photo of a person's face to measure physical attractiveness because this has been found to be a reliable method in past studies (Patzner, 1985; and Morrow, 1990).

This study was launched on May 2, 2010, and ended on July 9, 2010. Over this time period, 1,594 valid home tours were completed. In addition to the potential homebuyers who completed the tour and the survey that followed, we had to jettison several potential respondents for reasons ranging from mistakenly hitting the “end” button instead of the “next” button (which caused them to erroneously submit the survey without any means of being reset to not correctly answering both of our control questions to failing to correctly answer our safeguard questions.¹³

Methodology

Our central hypothesis is that the overall impression of a home can be influenced by the characteristics of the agent showing the property. As such, we estimate the regression specified in equation (1). Secondary hypotheses will be examined using variations of this equation.

¹³ As previously discussed, we inserted two control questions to ensure the respondent was paying sufficient attention to our survey questions. If a respondent missed either of the questions, we disregarded their entire survey. Our respondent rejection rate equaled roughly 5% in this study.

$$\text{Overall impression of the home} = f(\text{agent characteristics, source credibility, similarity characteristics, interaction term}) \quad (1)$$

Where the independent variables are defined as:

Agent Characteristics	<ol style="list-style-type: none"> 1. Hyperbolic Rhetoric: the use of non-essential words and property description in an attempt to “talk-up” a home. 2. Agent Gender 3. Attractiveness: the level of physical attractiveness of the agent
Source Credibility	The level of trust the potential homebuyer has for the agent
Similarity Characteristics	<ol style="list-style-type: none"> 1. Caucasian Dummy: equals 1 if the respondent is a Caucasian – the same as the real estate agent 2. Respondent Gender: equals 1 if the respondent is a female 3. Respondent Age: The absolute value of the difference between the respondent’s age and 45 – the age of the agent
Interaction Term	Agent Gender * Respondent Gender

Results

To ensure we have selected agent photos appropriately, we begin by comparing the respondent’s rating of real estate agent attractiveness across all eight categories. Since each of the four agent photos are used twice, we perform a series of means comparison tests to determine if there is heterogeneity between the “attractive” and “unattractive” photo pairs. The analysis is performed separately for the male and female agent. The results confirm that the photos we selected do in fact statistically significantly differentiate between attractive and unattractive agents. Interestingly, when comparing rating scores across respondent and agent gender, we find that respondent men are hesitant to rate the attractive male agent as being too attractive, but both genders have no problem rating the attractive female agent as such. In defense of their brotherhood, however, male respondents do slightly rate the unattractive male agent as being not as bad looking as the female respondents report.

(insert Table 1 here)

Table 1 reports mean scores for the overall house rating and for each of the eight categories (containing each combination of the three real estate agent characteristics). Part A of the table examines the main effects. That is, we parse the overall house rating result by respondent demographic data. Part B then considers the two-level interaction effects. This involves a deeper analysis by combining all combinations of respondent demographic pairs. In the two-level interaction effects, we intentionally omit the combination “married and gay” because of the legal restrictions that exist in most states. Because of resulting small sample sizes, we also omit “gay” and “non-Caucasian” groups, at times. Part C of Table 1 displays eight three-way interaction terms. Additional cuts of the data are suppressed because of small sample sizes. Bold figures in Part A highlight means that are significantly different at a minimum 10% level. What stands out the most in Table 1 is the statistically significantly higher rating that results from the attractive female agent who uses hyperbolic rhetoric. Not only is this category significantly higher than others, but it is specifically significantly higher than Category 2 – the results associated with the same attractive female who did *not* employ hyperbolic rhetoric. This result supports our central hypothesis that perspective buyers listen to attractive female agents who try to persuade them.

The question that remains is who is more susceptible to her influence? To get an initial indication, we turn to Parts A, B, and C of the table. In Part A, we see that most of the significant differences appear in the ethnicity variable. For example, with few

exceptions, African Americans and Asians report significantly different opinions of the home across agent categories, particularly 3 through 7. It also seems clear that homosexual respondents, both men and women, are tremendously positively influenced by the attractive female agent who uses hyperbolic rhetoric.

(insert Table 2)

Table 2 takes a much closer look at each of the three real estate agent characteristics. We isolate the effect of each by considering four category pairs. For example, to more deeply examine the impact of hyperbolic rhetoric, we match four sets of categories where only hyperbolic rhetoric differs. Groupings include categories 1&5 (“unattractive female agent *without* hyperbolic rhetoric” versus “unattractive female agent *with* hyperbolic rhetoric”), 2&6 (“attractive female agent *without* hyperbolic rhetoric” versus “attractive female agent *with* hyperbolic rhetoric”), 3&7 (“unattractive male agent *without* hyperbolic rhetoric” versus “unattractive male agent *with* hyperbolic rhetoric”), and 4&8 (“attractive male agent *without* hyperbolic rhetoric” versus “attractive male agent *with* hyperbolic rhetoric”). By comparing the categories where nothing is different except hyperbolic rhetoric, we can isolate its true impact on the respondent’s overall impression of the home.

The Hyperbolic Rhetoric column of the table reports only significant pairs of categories. Moreover, the first number in the pair has the higher associated mean score for the overall evaluation of the home. Intuitively, we see that the pair 6&2 is significant for many of the respondent demographic groups. Counter-intuitive results are reported in

three of the cases, namely 4&8 (twice) and 1&5. In these cases, trying to “talk up” the property backfired and resulted in an even lower opinion of the home. Haag, Rutherford, and Thomson (2000) argue that when agents try to oversell a home, buyers can often see through their hyperbole, and the result is worse than if the agent had just accurately described the property. However, because we completely control for the presentation of the property by making it absolutely identical to the other category presentations, this explanation seems insufficient.

In the Agent Gender column of Table 2, we see that the attractive female agent who uses hyperbolic rhetoric is significantly more able to persuade buyers of the property’s desirability than is the attractive male agent who used it. This is exactly as hypothesized. The only conflicting result in this area of the table is for those with and without a college degree. College graduates preferred the attractive male, whereas those without a degree preferred the attractive female.

Column 3 of Table 2 shows that male respondents are more persuaded by the unattractive female rather than the attractive one when she sticks to just the facts (a Sergeant Joe Friday approach). However, when hyperbolic rhetoric is employed, males significantly change their opinion and are more persuaded by the attractive female. This result displays the true power of persuasion that attractive females possess. In examining the remainder of the table, it seems that male agents are not able to make this jump. Specifically, unattractive male agents yield respondents with a higher impression of the home than attractive male agents (6.30 versus 6.22) when they stick to the facts (no hyperbolic rhetoric). However, when they attempt to “talk up” the property, attractive male agents do themselves damage (6.27 versus 6.02). In sum, attractive females in our

sample did well to employ hyperbolic rhetoric, whereas attractive males should not implement this technique.

(insert Table 3 here)

Table 3 reports regression results to identify respondent demographic characteristics that lead to a high rating of the home. We restrict our list of demographic data to those variables associated with a theoretically based hypothesized linkage. The analysis begins by considering the full sample of respondents across all eight categories. In the full sample, agent attractiveness, agent gender, and hyperbolic rhetoric are not explicitly controlled. Therefore, we must include them as independent variables. Hyperbolic rhetoric and agent gender are dummy variables based on one of the eight corresponding categories, while agent attractiveness is measured on a 1 to 9 Likert scale. Main effect independent variables include source credibility (trust) and three respondent similarity measures: a Caucasian dummy variable (since both agents are ostensibly Caucasian), respondent gender, and Age (as measured by the number of years the respondent's age is away from 45 – the agent's age). Based on the previously cited literature that find females are hesitant to trust (and therefore be persuaded by) other females, we also include an interaction term between agent gender and respondent gender.

In the remaining columns of Table 3, each category of real estate agent characteristics is examined separately. Note that the three agent characteristics are not included in the models because they are completely accounted for in the design of each

category. Alternatively stated, hyperbolic rhetoric, agent gender, and agent attractiveness are all explicitly controlled for outside the model. For similar reasons, it is not necessary to include the interaction term in each of the eight category regressions since agent gender is constant. Because of the carefully crafted design of each category, all that remains to be regressed are the four source credibility and similarity variables. The source credibility variable is significant in all regressions. Consistent with the literature, if you trust a person, they are much more able to persuade you to adopt their viewpoint. The results for similarity are far less convincing. The Caucasian dummy is significant in only two of the regressions, while gender is significant in only one. It could be argued that a null result is to be expected if one believes in absolute rationality – that people form their impression of the home independent of the person who takes them on a tour and independent of their attempts to “talk up” the property.

(insert Table 4 here)

We have established a clear winner in the ability to persuade other’s opinions of the overall home – attractive female agents who utilize hyperbolic rhetoric. We next turn to a deeper analysis of hyperbolic rhetoric as it relates to each room within the home. The home tour contains six still photographs that are shown while the agent verbally describes the property to the potential buyer. Hyperbolic rhetoric has been used in every room in an attempt to positively persuade the buyer. As such, we next attempt to quantify the level of hyperbolic rhetoric associated with each room inside the house. Specifically, we calculate

the number of hyperbolic words used to describe each room and hypothesize that the greater the number, the greater will be the influence on the homebuyer.

In five of the tested pair cases, the real estate agent was able to positively influence the perception of the property using hyperbolic rhetoric. The most influenced opinion was achieved in the “view/back yard” photo. It was the only significant room overall, and the one most affected by the attractive female agent. The attractive female agent was also able to improve perceptions of the curb appeal. This is important because the curb appeal photo is the first picture homebuyers typically see whether in person or on the Internet. That the attractive female agent was able to set an effective (hyperbolic rhetoric) tone during the very first photo of the tour, might explain why she was the only agent to significantly change respondent’s impression of the overall house. Like in other areas of life, first impressions appear to matter.

(insert Table 5 here)

In all eight real estate agent trials, only the attractive female agent who uses hyperbolic rhetoric was successful in significantly positively changing the perceptions of potential buyers. For this reason, we now isolate this agent and perform a series of room-by-room regressions to see which respondent demographic variables are most indicative of a receptive potential buyer. As in the overall regressions, source credibility (trust) is a significant determinant. The more you trust someone, the more likely you are to be swayed by what they have to say. Moreover, while all the similarity variables (consisting

of the Caucasian dummy, gender, and age) are individually sporadically significant, no consistent room-by-room pattern emerges.

(insert Table 6 here)

Table 6 examines hyperbolic rhetoric in terms of excess scores. Specifically, the dependent variable “excess overall impression of the house,” defined as the score in Category 6 minus the average score in Category 2, is regressed against the “excess room ratings” scores, defined in a similar fashion. Source credibility and similarity variables are included as well. As in prior specifications, source credibility is again statistically significant, while the similarity variables are not. Concerning rooms within the house, curb appeal, kitchen and main living area significantly contribute to the excess impression of the home.

Conclusions

This study takes 1,594 potential homebuyers on an internet-based guided audio/visual tour of a typical home. One of eight real estate agents, who differ in only one characteristic at a time – attractiveness, gender, and hyperbolic rhetoric, guides each respondent through the tour. We then compare the full sample results across these eight (2^3) permutations where a clear winner emerges. It is only the attractive female real estate agent that utilizes hyperbolic rhetoric (a common selling technique within the industry) who is able to significantly positively affect the overall opinion of the home in the minds of potential buyers. In an examination of which room(s) most contribute to her being able

to affect such change, it seems the first impression and last impression of the home matter most. Specifically, the agent was significantly able to change people's perception of the curb appeal (first) and back yard/view from the home (last).

Other than source credibility (trust), we were not able to consistently identify a respondent profile of who is most likely to be swayed by the three real estate agent characteristics (attractiveness, gender, and hyperbolic rhetoric) either overall or within a subsample parsing of the data. Future studies should develop a more sound theoretical foundation for respondent demographic characteristics that might explain greater susceptibility to such variables, and/or collect different variables for respondents that matter. We leave this effort to future studies.

References

- Andreoni, J. and R. Petrie, 2008, "Beauty, Gender, and Stereotypes: Evidence from Laboratory Experiments," *Journal of Economic Psychology*, 29:1, 73-93.
- Babad, E., J. Inbar, and R. Rosenthal, 1982, "Pygmalion, Galatea and the Golem: Investigations of Biased and Unbiased Teachers," *Journal of Educational Psychology*, 74, 459-474.
- Baker, M., and G. Churchill, 1977, "The Impact of Physically Attractive Models on Advertising Evaluations," *Journal of Marketing Research*, 14(November), 538-555.
- Bardack, N., and F. McAndrew, 1985, "The Influence of Physical Attractiveness and Manner of Dress on Success in a Simulated Personnel Decision." *Journal of Social Psychology*, 125, 777-778.
- Berggren, N., H. Jordahl, and P. Poutvaara, 2010, "The Looks of a Winner: Beauty and Electoral Success," *Journal of Public Economics*, 94:1/2, 8-15.
- Biddle, J., and D. Hamermesh, 1998, "Beauty, Productivity, and Discrimination: Lawyers' Looks and Lucre," *Journal of Labor Economics*, 16:1, 172-201.
- Bower, A. and S. Landreth, 2001, "Is Beauty Best? Highly Versus Normally Attractive Models in Advertising," *Journal of Advertising*, 30:1, 1-12.
- Buchan, N., R. Croson, and S. Solnick, 2008, "Trust and Gender: An Examination of Behavior, Biases, and Beliefs in the Investment Game," *Journal of Economic Behavior and Organization* 68:3/4, 466-476.
- Buss, D., and M. Barnes, 1986, "Preferences in Human Mate Selection," *Journal of Personality and Social Psychology*, 50:3, 559-570.
- Buss, D., and D. Schmitt, 1993, "Sexual Strategies Theory: An Evolutionary Perspective on Human Mating," *Psychological Review*, 100:2, 204-232.
- Caballero, M., J. Lumpkin, and C. Madden, 1989, "Using Physical Attractiveness as an Advertising Tool: An Empirical Test of the Attraction Phenomenon," *Journal of Advertising Research*, 29:4, 16-21.
- Chaiken, S., 1980, "Heuristic Versus Systematic Information Processing and the Use of Source Versus Message Cues in Persuasion," *Journal of Personality and Social Psychology*, 39(November), 752-66.
- Chaudhuri, A. and L. Gangadharan, 2007, "An Experimental Analysis of Trust and Trustworthiness," *Southern Economic Journal*, 73:4, 959-985.

Chawla, S. and R. Natarajan, 1995, "Endorsing an Ethnic Food Product: The Roles of Race and Gender," *Journal of Food Products Marketing*, 2:3, 3-16.

Cialdini, R., 2009, *Influence*. 5th edition. Boston: Pearson.

Croson, R. and N. Buchan, 1999, "Gender and Culture: International Experimental Evidence from Trust Games," *American Economic Review*, 89, 386-391.

Eckel, C., and R. Wilson, 2003, "Detecting Trustworthiness: Does Beauty Confound Intuition?," working paper, Virginia Polytechnic Institute and State University.

Feingold, A., 1992, "Good-Looking People are not What We Think," *Psychological Bulletin*, 111, 304-341.

Fershtman, C., and U. Gneezy, 2001, "Discrimination in a Segmented Society: An Experimental Approach," *Quarterly Journal of Economics*, February, 351-377.

Frieze, I., J. Olson, and J. Russell, 1991, "Attractiveness and Income for Men and Women in Management," *Journal of Applied Social Psychology*, 21, 1039-1057.

Glaeser, E., D. Laibson, J. Scheinkman, and C. Soutter, 2000, "Measuring Trust," *Quarterly Journal of Economics*, 115:3, 811-846.

Graham, J., C. Harvey, and M. Puri, 2010, "A Corporate Beauty Contest," working paper, Duke University.

Haag, J., R. Rutherford, and T. Thomson, 2000, "Real Estate Agent Remarks: Help or Hype?" *Journal of Real Estate Research*, 20(1/2), 205-215.

Hamermesh, D. and J. Biddle, 1994, "Beauty and the Labor Market," *American Economic Review*, 84:5, 1174-1194.

Huhmann, B., G. Franke, and D. Mothersbaugh, 2009, "Execution Factors, Message Style, and Consumer Readership of Print Ads," working paper, New Mexico State University.

Jackson, L., 1983, "Gender, Physical Attractiveness, and Sex Roles in Occupational Treatment Discrimination: The Influence of Trait and Role Assumption," *Journal of Applied Social Psychology*, 13, 443-458.

Kamins, M., 1990, "An Investigation into the 'Match-Up' Hypothesis in Celebrity Advertising: When Beauty May be Only Skin Deep", *Journal of Advertising*, 19:1, 4-13.

Langlois, J., L. Kalakanis, A. Rubenstein, A. Larson, M. Hallam, and M. Smoot, 2000, "Maxims or Myths of Beauty? A Meta-Analytic and Theoretical Review," *Psychological Bulletin*, 126:3, 390-423.

Langlois, J., J. Ritter, L. Roggman, and L. Vaughn, 1991, "Facial Diversity and Infant Preferences for Attractive Faces," *Developmental Psychology*, 27, 79-84.

Langlois, J., L. Roggman, R. Casey, J. Ritter, L. Rieser-Danner, and V. Jenkins, 1987, "Infant Preferences for Attractive Faces: Rudiments of a Stereotype?," *Developmental Psychology*, 23, 363-369.

Langlois, J., L. Roggman, and L. Rieser-Danner, 1990, "Infants' Differential Social Responses to Attractive and Unattractive Faces," *Developmental Psychology*, 26, 153-159.

Marlowe, C., S. Schneider, and C. Nelson, 1996, "Gender and Attractiveness Biases in Hiring Decisions: Are More Experienced Managers Less Biased?," *Journal of Applied Psychology*, 81, 11-21.

McPherson, M., L. Smith-Lovin, and J. Cook, 2001, "Birds of a Feather: Homophily in Social Networks," *Annual Review of Sociology*, 27, 415-444.

Mobius, M., and T. Rosenblat, 2006, "Why Beauty Matters," *American Economic Review*, 96:1, 222-235.

Montepare, J. and L. Zebrowitz, 1998, "Person Perception Comes of Age: The Salience and Significance of Age in Social Judgments," *Advances in Experimental Social Psychology*, 30, 93-163.

Morrow, P., J. McElroy, B. Stampfer, and M. Wilson, 1990, "The Effects of Physical Attractiveness and Other Demographic Characteristics on Promotion Decisions," *Journal of Management*, 16:4, 723-736.

Morrow, P., 1990, "Physical Attractiveness and Selection Decision Making," *Journal of Management*, 16:1, 45-60.

O'Hara, B., R. Netemeyer, and S. Burton, 1991, "An Examination of the Relative Effects of Source Expertise, Trustworthiness, and Likability," *Social Behavior and Personality*, 19:4, 305-14.

O'Mahony, S., and T. Meenaghan, 1998, "The Impact of Celebrity Endorsements on Consumers," *Irish Marketing Review-Dublin*, 10:2, 15-24.

Ohanian, R., 1990, "Communication and Validation of a Scale to Measure Celebrity Endorser's Perceived Attractiveness and Design to Influence," *Journal of Advertising*, 19:3, 39-52.

Palmer, A. and D. Bejou, 1995, "The Effects of Gender on the Development of Relationships Between Clients and Financial Advisors," *International Journal of Bank Marketing*, 13:3, 18-27.

Patzer, G., 1983, "Source Credibility as a Function of Communicator Physical Attractiveness," *Journal of Business Research*, 11:2, 229-241.

Patzer, G., 1985, "The Physical Attractiveness Phenomena," New York: Plenum Press.

Petty, R., and J. Cacioppo, 1986, "The Elaboration Likelihood Model of Persuasion," in *Advances in Experimental Social Psychology*, L. Berkowitz, Ed. New York: Academic Press.

Petty, R., J. Cacioppo and D. Schumann, 1983, "Central and Peripheral Routes to Advertising Effectiveness: The Moderating Role of Involvement," *Journal of Consumer Research*, 10(September), 135-44.

Praxmarer, S., and J. Rossiter, 2009, "How Does the Presenter's Physical Attractiveness Persuade? A Test of Alternative Explanations," working paper, University of Wollongong.

Ravina, E., 2008, "Beauty, Personal Characteristics and Trust in Credit Markets," working paper, Columbia University.

Raza, S. and B. Carpenter, 1987, "A Model of Hiring Decisions in Real Employment Interviews," *Journal of Applied Psychology*, 72, 596-603.

Rees, A., 1993, "The Role of Fairness in Wage Determination," *Journal of Labor Economics*, 11:1, 243-252.

Richins, M., and P. Bloch, 1986, "After the New Wears Off: The Temporal Context of Product Involvement," *Journal of Consumer Research*, 13(September), 280-285.

Ross, J., and K. Ferris, 1981, "Interpersonal Attraction and Organizational Outcomes: A field Examination," *Administrative Science Quarterly*, 26, 617-632.

Roszell, P., D. Kennedy, and E. Grabb, 1989, "Physical Attractiveness and Income Attainment Among Canadians," *Journal of Psychology*, 123, 547-559.

Rule, N., and N. Ambady, 2008, "The Face of Success: Inferences from Chief Executive Officers' Appearance Predict Company Profits," *Psychological Science*, 19, 109-111.

Rynes, S. and B. Gerhart, 1990, "Interviewer Assessments of Applicant 'Fit': An Exploratory Investigation," *Personnel Psychology*, 43, 13-35.

- Scharlemann, J., C. Eckel, A. Kacelnik, and R. Wilson, 2001, "The Value of a Smile: Game Theory with a Human Face," *Journal of Economic Psychology*, 22:5, 617-40.
- Seiler, M., P. Madhavan, and L. Potts, 2010, "Using Ocular Tracking Technology to Examine the Cognitive Dimensions of Residential Real Estate Sales," working paper, Old Dominion University.
- Seiler, M., V. Seiler, and M. Bond, 2001, "Uses of Information Technology in the Real Estate Brokerage Industry," *Real Estate Issues*, 26:1, 43-52.
- Seiler, Vicky L., **Michael J. Seiler**, Daniel T. Winkler, Graeme Newell, and James R. Webb, 2008, "Service Quality Dimensions in Residential Real Estate Brokerage," *Journal of Housing Research*, 17:2, 101-117.
- Simpson, P., D. Sturgis, and J. Tanguma, 2008, "The Eyes Have It, or Do They? The Effects of Model Eye Color and Eye Gaze on Consumer Ad Response," *Journal of Applied Business and Economics*, 2, 60-71.
- Smith, J., 1998, "Buyer-Seller Relationships: Similarity, Relationship Management, and Quality," *Psychology and Marketing*, 15:1, 3-21.
- Todorov, A., A. Mandisodza, A. Goren, and C. Hall, 2005, "Inferences of Competence from Faces Predict Election Outcomes," *Science*, 308, 1623-1626.
- Turner, J., 1982, "Toward a Cognitive Redefinition of the Social Group," in *Social Identity and Intergroup Relations*, H. Tajfel, Ed. Cambridge: Cambridge University Press.
- Woodside, A., J. Davenport, 1974, "The Effect of Salesman Similarity and Expertise on Consumer Purchasing Behavior," *Journal of Marketing Research*, 11(May), 198-202.
- Zebrowitz, L., J. Fellous, A. Mignault, and C. Andreoletti, 2003, "Trait Impressions as Overgeneralized Responses to Adaptively Significant Facial Qualities: Evidence from Connectionist Modeling." *Journal of Personality and Social Psychology*, 7:3, 194-215.

Table 1. Respondent Demographic Decompositions by Real Estate Agent Characteristic Categories

This table contains mean scores for the overall house rating. Each of the eight categories (containing each combination of the three real estate agent characteristics) as well as results from the overall sample are positioned in each column. Part A examines the main effects. Part B considers the two-way interaction effects, while Part C measures three-way interaction effects, where permitted by sample size.

Respondent Group	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Cat 6	Cat 7	Cat 8	Total
Full Sample	6.28	6.14	6.30	6.22	6.28	6.48	6.27	6.02	6.25
Sample Size	188	200	194	210	203	197	201	201	1594
Part A: Main Effects									
Males (N = 753)	6.52	6.09	6.21	6.16	6.20	6.59	6.11	6.10	6.25
Females (N = 833)	6.11	6.18	6.37	6.32	6.36	6.37	6.41	5.96	6.25
Single (N = 839)	6.23	6.07	6.20	6.08	6.17	6.42	6.13	5.95	6.15
Married (N = 749)	6.34	6.22	6.45	6.38	6.39	6.56	6.41	6.12	6.36
College Degree (N = 900)	6.30	5.85	6.37	6.38	6.19	6.48	6.39	5.85	6.22
No College Degree(N =687)	6.22	6.51	6.23	6.06	6.43	6.48	6.09	6.24	6.28
Gay/Bi-sexual (N = 122)	6.43	6.29	5.94	6.11	6.17	7.33	5.82	6.07	6.20
Not Gay (N = 1462)	6.27	6.13	6.34	6.26	6.29	6.44	6.31	6.02	6.26
Caucasian (N = 1230)	6.34	6.20	6.19	6.28	6.35	6.49	6.27	6.07	6.28
Non-Caucasian (N = 324)	6.38	5.88	6.65	6.37	5.95	6.49	6.38	6.06	6.27
African American (N = 84)	6.00	6.43	6.90	6.87	6.14	5.55	7.38	5.55	6.33
Asian (N = 129)	6.71	5.69	6.94	5.57	5.08	7.09	6.08	6.11	6.16
Hispanic (N = 89)	6.22	5.67	6.43	6.73	6.78	6.82	6.33	6.57	6.46
Caucasian (N = 1230)	6.34	6.20	6.19	6.28	6.35	6.49	6.27	6.07	6.28
Part B: Interaction Effects									
Single Men (N = 444)	6.37	5.90	6.15	6.00	6.14	6.53	6.16	6.11	6.18
Married Men (N = 308)	6.77	6.38	6.32	6.37	6.29	6.69	6.07	6.08	6.35

Single Women (N = 394)	6.09	6.22	6.26	6.18	6.21	6.24	6.10	5.79	6.12
Married Women (N = 438)	6.12	6.13	6.55	6.45	6.46	6.47	6.72	6.15	6.38
Men with a College Degree (N = 433)	6.47	5.80	6.12	6.24	6.21	6.40	6.10	6.06	6.18
Men without a College Degree (N = 319)	6.52	6.51	6.37	6.08	6.18	6.79	6.13	6.15	6.33
Women with a College Degree (N = 465)	6.15	5.88	6.67	6.52	6.16	6.55	6.63	5.67	6.27
Women without a College Degree (N = 366)	6.05	6.50	6.13	6.10	6.71	6.16	6.05	6.31	6.25
Gay Men (N = 42)	7.00	6.50	5.71	5.50	6.67	7.25	4.75	5.67	5.90
Not Gay Men (N = 709)	6.50	6.08	6.27	6.24	6.17	6.56	6.24	6.13	6.28
Gay Women (N = 80)	6.27	6.25	6.09	6.42	5.92	7.40	6.78	6.38	6.35
Not Gay Women (N = 749)	6.08	6.16	6.41	6.31	6.42	6.32	6.38	5.92	6.24
Caucasian Men (N = 571)	6.50	6.18	6.06	6.32	6.28	6.49	6.18	6.13	6.27
Non-Caucasian Men (N = 163)	7.00	5.94	6.54	6.13	5.86	7.00	6.15	6.14	6.30
African American Men (N = 32)	8.00	5.00	7.50	6.86	5.50	6.00	7.67	6.50	6.56
Asian Men (N = 71)	6.83	6.00	6.50	5.27	5.67	7.14	6.00	6.00	6.11
Hispanic Men (N = 50)	7.00	6.20	6.67	6.83	6.50	7.57	6.10	6.00	6.58
Caucasian Women (N = 657)	6.21	6.22	6.31	6.28	6.43	6.49	6.35	6.01	6.28
Non-Caucasian Women (N = 160)	6.05	5.81	6.79	6.71	6.06	5.88	6.63	6.00	6.24
African American Women (N = 52)	5.33	7.00	6.50	6.88	6.63	5.29	7.20	5.00	6.19
Asian Women (N = 57)	6.63	5.17	7.57	6.67	4.50	7.00	6.14	6.22	6.21
Hispanic Women (N = 39)	6.00	5.00	6.00	6.60	7.33	5.50	7.50	6.89	6.31
Single with a College Degree (N = 476)	6.24	5.80	6.21	6.32	6.13	6.34	6.27	5.73	6.12
Married with a College Degree (N = 423)	6.37	5.90	6.55	6.47	6.25	6.62	6.53	6.00	6.34
Single without a College Degree (N = 360)	6.16	6.39	6.27	5.80	6.24	6.49	5.90	6.23	6.19
Married without a College Degree (N = 326)	6.29	6.66	6.28	6.30	6.60	6.47	6.27	6.26	6.39

Caucasian Single (N = 622)	6.29	6.10	6.21	6.10	6.17	6.41	6.19	6.05	6.19
Non-Caucasian Single (N = 199)	6.37	6.09	6.08	6.21	6.13	6.43	6.11	5.93	6.16
African American Single (N = 58)	6.50	6.50	6.71	6.67	6.50	5.75	7.14	5.57	6.41
Asian Single (N = 78)	6.13	6.22	5.86	5.73	4.86	7.13	5.80	6.38	6.03
Hispanic Single (N = 51)	6.57	5.57	6.13	6.38	7.25	6.43	6.00	5.83	6.24
Caucasian Married (N =606)	6.40	6.32	6.24	6.45	6.52	6.58	6.35	6.09	6.37
Non-Caucasian Married (N = 125)	6.38	5.45	7.37	6.75	5.67	6.58	6.70	6.25	6.46
African American Married (N = 26)	5.50	6.00	7.33	7.17	5.25	5.00	9.00	5.50	6.15
Asian Married(N = 51)	7.50	5.00	7.70	5.00	5.40	7.00	6.45	5.50	6.35
Hispanic Married (N = 38)	5.00	6.00	6.83	7.67	6.40	7.50	6.50	7.13	6.76
Gay with a College Degree (N = 71)	6.20	6.50	7.22	5.38	5.64	7.71	5.45	5.00	6.14
Not Gay with a College Degree (N = 825)	6.31	5.77	6.31	6.46	6.24	6.39	6.50	5.88	6.23
Gay without a College Degree (N = 50)	7.00	5.75	4.88	6.70	7.00	6.00	6.50	6.67	6.34
Not Gay without a College Degree (N = 635)	6.16	6.54	6.38	6.03	6.37	6.49	6.06	6.20	6.28
Caucasian with a college degree (N = 702)	6.35	5.91	6.33	6.38	6.25	6.46	6.41	5.99	6.25
Non-Caucasian with a college degree (N = 178)	6.50	5.47	6.56	6.55	5.78	6.52	6.53	5.50	6.21
African American with a college degree (N = 48)	5.67	5.00	6.50	7.00	6.10	5.67	7.33	4.00	6.12
Asian with a college degree (N = 73)	7.11	5.67	6.91	5.60	4.63	7.00	6.25	6.11	6.26
Hispanic with a college degree (N = 46)	6.00	5.14	6.75	6.71	7.67	6.67	6.75	6.40	6.41
Caucasian without a college degree (N = 526)	6.29	6.57	6.08	6.17	6.54	6.52	6.10	6.18	6.31
Non-Caucasian without a college degree (N = 145)	6.21	6.29	6.78	6.19	6.19	6.43	6.06	6.50	6.34
African American without a college degree (N = 36)	6.20	7.00	8.50	6.71	6.25	5.40	7.50	6.83	6.61
Asian without a college degree (N = 55)	6.00	5.70	7.00	5.56	6.00	7.50	5.67	6.10	6.00
Hispanic without a college degree (N = 43)	6.67	7.50	6.30	6.75	6.33	7.00	5.50	6.67	6.51
Caucasian Gay (N = 90)	6.80	6.00	5.71	6.15	6.14	7.25	5.67	5.33	6.09
Non-Caucasian Gay (N = 25)*	7.00	6.50	6.75	6.33	6.00	8.00	6.20	7.40	6.68

Caucasian Not Gay (N = 1136)	6.31	6.21	6.25	6.29	6.37	6.45	6.32	6.11	6.29
Non-Caucasian Not Gay (N = 298)	6.31	5.84	6.64	6.37	5.94	6.44	6.40	5.91	6.23
African American Not Gay (N = 78)	6.00	6.33	6.78	6.71	6.38	5.30	7.38	5.30	6.27
Asian Not Gay (N = 122)	6.67	5.69	6.94	5.69	5.00	7.09	5.92	6.17	6.14
Hispanic Not Gay (N = 78)	6.13	5.63	6.45	6.80	6.50	6.82	6.50	6.33	6.42
Part C: Selected Triple Level Sub-samples									
Single Men with a College Degree (N = 259)	6.28	5.60	6.03	6.09	6.18	6.30	6.14	6.17	6.11
Married Men with a College Degree (N = 173)	6.76	6.10	6.25	6.50	6.27	6.58	6.04	5.91	6.29
Single Women with a College Degree (N = 216)	6.19	6.00	6.43	6.59	6.04	6.37	6.39	5.37	6.13
Married Women with a College Degree (N = 249)	6.12	5.77	6.86	6.45	6.24	6.65	6.88	6.08	6.38
Single Men without a College Degree (N = 184)	6.37	6.33	6.32	5.88	6.05	6.77	6.18	6.04	6.26
Married Men without a College Degree (N = 135)	6.80	6.79	6.46	6.28	6.32	6.82	6.09	6.36	6.44
Single Women without a College Degree (N = 176)	5.95	6.43	6.22	5.71	6.50	6.13	5.60	6.43	6.13
Married Women without a College Degree (N = 189)	6.13	6.58	6.17	6.44	6.86	6.19	6.48	6.21	6.38

Agent Category 1: No Hyperbolic Rhetoric, Female, Unattractive

Agent Category 2: No Hyperbolic Rhetoric, Female, Attractive

Agent Category 3: No Hyperbolic Rhetoric, Male, Unattractive

Agent Category 4: No Hyperbolic Rhetoric, Male, Attractive

Agent Category 5: Hyperbolic Rhetoric, Female, Unattractive

Agent Category 6: Hyperbolic Rhetoric, Female, Attractive

Agent Category 7: Hyperbolic Rhetoric, Male, Unattractive

Agent Category 8: Hyperbolic Rhetoric, Male, Attractive

Note 1: In the Two Level interaction effects, we intentionally omit the combination (married and gay) because of the legal restrictions that exist in most states.

Note 2: Because of small sample sizes in the “Gay” and “non-Caucasian” groups, we omit these from the table.

Note 3: Bold Numbers in Part A indicate statistically significant pairs. When there are only two categories, an Independent Samples T-Test is used. When there are more than two categories, ANOVA and Post Hoc tests are used. In both cases, a Levene statistic is first calculated to determine if it should be assumed that the variances are equal.

* Results omitted due to insufficient sample size

Table 2. Categorical Pairing to Isolate the Effect of each of the three Real Estate Agent Characteristics – Hyperbolic Rhetoric, Gender, and Attractiveness

In this table, matched-pairs are examined for each Agent Characteristic group. The characteristics are isolated by considering the following matched-pairs: Hyperbolic Rhetoric (1&5; 2&6; 3&7; 4&8), Gender (1&3; 2&4; 5&7; 6&8), and Attractiveness (1&2; 3&4; 5&6; 7&8).

Respondent Group	Agent Characteristics		
	Hyperbolic Rhetoric	Gender	Attractiveness
Full Sample (N = 1594)	6 & 2	6 & 8	
Males (N = 753)	6 & 2	6 & 8	1 & 2; 6 & 5
Females (N = 833)		6 & 8	
Single (N = 839)		6 & 8	
Married (N = 749)		6 & 8	
College Degree (N = 900)	6 & 2; 4 & 8	6 & 8; 4 & 2	1 & 2; 7 & 8
No College Degree(N =687)		2 & 4	
Gay/Bi-sexual (N = 122)			
Not Gay (N = 1462)	6 & 2	6 & 8	7 & 8
Caucasian (N = 1230)	6 & 2	6 & 8	
Non-Caucasian (N = 324)			
African American (N = 84)	4 & 8		7 & 8
Asian (N = 129)	1 & 5; 6 & 2		3 & 4; 6 & 5
Hispanic (N = 89)			

Agent Category 1: No Hyperbolic Rhetoric, Female, Unattractive

Agent Category 2: No Hyperbolic Rhetoric, Female, Attractive

Agent Category 3: No Hyperbolic Rhetoric, Male, Unattractive

Agent Category 4: No Hyperbolic Rhetoric, Male, Attractive

Agent Category 5: Hyperbolic Rhetoric, Female, Unattractive

Agent Category 6: Hyperbolic Rhetoric, Female, Attractive

Agent Category 7: Hyperbolic Rhetoric, Male, Unattractive

Agent Category 8: Hyperbolic Rhetoric, Male, Attractive

Note 1: Before Post Hoc Tests were performed, a Levene test for equal variance was conducted. The results are based on the outcome of this test.

Note 2: Listed pairs represent statistically significant differences at a minimum of the 10% level.

Note 3: For each pair, the number that appears first has the higher mean.

Note 4: Each cell can have at most four significant pairs.

Table 3. Regression Results for the Overall Sample and by Real Estate Agent Characteristics Category

This table displays separate regressions for the overall model and for each of the eight categories (containing each combination of the three) real estate agent characteristics.

	Overall	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Cat 6	Cat 7	Cat 8
Agent Characteristics									
Hyperbolic Rhetoric	-.005 (.076)								
Agent Gender	.041 (.113)								
Agent Attractiveness Rating	-.019 (.019)								
Source Credibility (Trust)									
	.303*** (.023)	.287*** (.469)	.219*** (.059)	.217*** (.057)	.245*** (.058)	.403*** (.068)	.397*** (.059)	.318*** (.062)	.333*** (.060)
Respondent Similarity									
Caucasian	.079 (.095)	-.107 (.270)	.301 (.300)	-.384 (.265)	-.061 (.260)	.525* (.276)	.454* (.264)	-.048 (.255)	.035 (.258)
Gender	-.083 (.109)	-.412** (.208)	-.016 (.229)	.310 (.219)	.004 (.209)	.223 (.217)	-.178 (.201)	.343 (.221)	-.109 (.225)
Age	-.005 (.005)	-.016 (.016)	-.015 (.016)	-.019 (.015)	-.022 (.015)	.006 (.015)	-.012 (.014)	.019 (.015)	0.16 (.015)
Interaction Term									
Agent Gender * Respondent Gender	.203 (.153)								
F-Statistic	25.11	7.85	3.87	5.09	5.85	9.51	11.83	7.81	8.32
p-value	.000	.000	.005	.001	.000	.000	.000	.000	.000
Degrees of Freedom	1547	179	191	186	200	198	192	198	197
R-Square	.115	.152	.076	.101	.107	.164	.201	.139	.147

Table 4. Hyperbolic Rhetoric by Agent Characteristics and Room in the House

“# of Words” is the number of Hyperbolic Rhetoric words that are heard during the property (or room) description. “% of Words” is the number of Hyperbolic Rhetoric words divided by the total number of words that are heard during the property (or room) description. “Ex-ante Ranking” reflects the order in which each room is expected to be able to receive a higher rating through Hyperbolic Rhetoric. This ranking is based on a combination of “# of Words” and “% of Words.”

# of Words			Overall	Men	Women	Attractive Men	Attractive Women	Unattractive Men	Unattractive Women
			N =	1590	804	786	410	396	394
	Overall House Rating	Positive	6.26	6.15	6.38	6.02	6.48	6.27	6.28
		Neutral	6.23	6.26	6.21	6.22	6.14	6.30	6.28
8	Kitchen	Positive	5.00	5.06	4.93	5.08	5.03	5.05	4.85
		Neutral	5.07	5.00	5.15	4.92	5.22	5.08	5.07
7	Curb Appeal	Positive	6.22	6.09	6.35	6.13	6.43	6.05	6.27
		Neutral	6.22	6.25	6.19	6.26	6.16	6.23	6.23
6	View/ Back Yard	Positive	7.14	7.06	7.21	6.99	7.29	7.14	7.14
		Neutral	6.98	7.00	6.96	7.02	6.98	6.97	6.94
5	Master Bedroom	Positive	5.58	5.55	5.61	5.44	5.68	5.66	5.55
		Neutral	5.59	5.55	5.64	5.54	5.59	5.56	5.69
3	Main Living Area	Positive	5.10	5.05	5.14	5.00	5.17	5.11	5.11
		Neutral	5.00	4.93	5.08	4.97	5.07	4.89	5.08
2	Master Bathroom	Positive	4.59	4.64	4.53	4.56	4.65	4.73	4.41
		Neutral	4.50	4.48	4.52	4.46	4.45	4.49	4.60

Note: Numbers in bold indicate statistically significant differences at a minimum of 10% based on a Levene test for homogeneity of variance followed by a corresponding Independent Samples T-Test.

Table 5. Category 6 Regression Results for the Overall Home and Each Room within the Home

This table isolates the effect of Hyperbolic Rhetoric for the attractive female real estate agent. The dependent variable is the rating score from Category 6 (Hyperbolic Rhetoric by an Attractive Female real estate agent). Each column in the table represents a separate regression with the dependent variable being the rating scores for the overall house and each room shown during the home tour.

	Overall Home	Kitchen	Master Bedroom	View/ Back Yard	Curb Appeal	Master Bathroom	Main Living Area
Source Credibility (Trust)	.397*** (.059)	.261*** (.067)	.131** (.059)	.270*** (.052)	.232*** (.053)	.225*** (.063)	.208*** (.055)
Respondent Similarity							
Caucasian	.454* (.264)	.204 (.301)	.167 (.272)	.016 (.233)	.347 (.239)	.550* (.284)	.367 (.246)
Gender	-.178 (.201)	-.174 (.229)	.011 (.204)	-.107 (.177)	.131 (.182)	-.425** (.216)	-.165 (.187)
Age	-.012 (.014)	-.012 (.016)	.003 (.015)	.013 (.013)	-.037 (.013)	-.001 (.015)	-.028** (.013)
F-Statistic	11.83	4.10	1.24	8.07	7.12	4.63	4.79
p-value	.000	.003	.297	.000	.000	.001	.001
Degrees of Freedom	192	191	191	192	191	192	192
R-Square	.201	.081	.026	.146	.132	.090	.092

Table 6. Regression Results for Excess Overall Home Impression within Category 6

This table displays regression results for excess overall impression of the home (dependent variable) against source credibility and similarity variables, as well as excess room ratings for the Attractive Female real estate agent who employs Hyperbolic Rhetoric. Variance Inflation Factors (VIFs) are calculated to ensure against multicollinearity.

	Beta	Standard Error	t-stat	p-value	VIF
Source Credibility (Trust)	.198	.049	4.039	.000***	1.348
Respondent Similarity					
Caucasian	.076	.204	.373	.710	1.136
Gender	-.080	.154	-.517	.605	1.106
Age	.005	.011	.461	.645	1.186
Excess Room Scores					
Curb Appeal	.324	.074	4.393	.000***	1.723
Kitchen	.199	.057	3.513	.001***	1.497
Main Living Area	.242	.084	2.864	.005***	2.275
Master Bedroom	.045	.071	.631	.529	1.788
Master Bathroom	.063	.061	1.020	.309	1.604
Back Yard/View	.022	.074	.297	.767	1.584
F-Statistic	22.64				
p-value	.000				
Degrees of Freedom	189				
R-Square	.558				

-
- * indicates significance at the .10 level.
 - ** indicates significance at the .05 level.
 - *** indicates significance at the .01 level.

Appendix: Survey Instrument

SURVEY INSTRUCTIONS:

In an effort to better understand how people search when looking for a home to buy, a team of Ph.D.s at our Research Center is conducting a national study of the residential real estate market. Please help us to better understand homeowner preferences by completing this short tour and survey (5-10 minutes total).

Requirements:

- Only current homeowners or people currently searching for a home as a primary residence (you plan to live there after you buy the home) should complete this survey.
- You must have your **speakers turned on** in order to complete the assignment. You will be given an audio code during the movie that you must remember and enter into the survey.
- You must have the Flash player installed. You will be unable to see the brief movie without the Flash player.
- You should use one of the following web browsers: Internet Explorer 7, Internet Explorer 8, Safari 4, or Firefox 3 (or newer).

If you meet the requirements above, please select your state, and then select the city nearest to you to begin the survey

(Drop down menus for both state and city appear here)

Press the Play button above to start the movie. After watching the movie, answer the questions that will appear below when the movie finishes playing.

(Note that bold words reflect the tour provided in the “hyperbolic rhetoric” versions while neutral presentations are read without the bold words)

(curb appeal photos)

Welcome to this **beautifully maintained** 4 bedroom, 2.5 bath home in the Driftwood Meadows subdivision. Built in 1993, this transitional style home rests on a **full** ¼ acre corner lot **for maximum privacy**. This home offers 2,216 **spacious** square feet of living area **and is favorably priced**.

(Kitchen photos)

The **expansive** 112 square foot **well-appointed** kitchen is equipped with a walk-in pantry. **The master chef will enjoy preparing gourmet meals for the family in this wonderful space**. The kitchen opens up into an eat-in breakfast nook featuring a bay window.

(Main area photos)

The **large** family room features **wonderful** new wood laminate flooring and has, as a centerpiece, a **gorgeous all** brick fireplace – that can be gas log or wood burning.

(Master Bedroom photos)

Upstairs, you will find a **generously sized** 168 square foot master bedroom with **highly desirable** his and hers walk-in closets and an **airy** vaulted ceiling.

(Master Bathroom photos)

Attached to the master bedroom is the **large and private** master bathroom.

(Back yard/Outside photos)

The back of the home leads to a **huge** wooden deck **perfect for barbequing with family and friends**. **Stately**, mature trees compliment the **professional** landscaping. The yard backs up to a heavily wooded area **for maximum privacy**.

(end of movie – audible code spoken)

Survey Body:

At the end of the movie, you were read a "code". What code number were you given at the end of the movie? _____

(Thumbnail photos of both the house and agent remain visible for respondents to see while filling out this section. Otherwise, they might have a hard time accurately remembering each room.)

1. Similar properties in the CITYNAME area have recently sold for a price of \$XXX,XXX. What do you believe to be the “fair market value”? That is, what is an accurate price for this home? \$ _____

2. What is your overall impression of this house?

Not at all Favorable					Neutral					Extremely Favorable
1	2	3	4	5	6	7	8	9		

3. When you think of the property just shown and described to you, what words come to mind? List as many, or as few, words as you like.

_____	_____
_____	_____
_____	_____
_____	_____

4. “Curb appeal” is defined as the first impression you get when you look at the house from the street. How would you describe this house’s **curb appeal**?

Worst Curb Appeal Ever					Average Curb Appeal					Best Curb Appeal Ever
1	2	3	4	5	6	7	8	9		

5. How would you describe the **Kitchen**?

Worst Kitchen Ever					Average Kitchen					Best Kitchen Ever
1	2	3	4	5	6	7	8	9		

6. How would you describe the **Main Living Area**?

Worst Main Living Area Ever					Average Main Living Area					Best Main Living Area Ever
1	2	3	4	5	6	7	8	9		

7. How would you describe the **Master Bedroom**?

Worst Master Bedroom Ever					Average Master Bedroom					Best Master Bedroom Ever
1	2	3	4	5	6	7	8	9		

male					no					female
agent					difference					agent
1	2	3	4	5	6	7	8	9		

The following questions relate to the agent who took you on a tour of this home. Your answers to these questions will not be shared with the agent, so please be as open and honest as possible.

(a thumbnail photo of the agent appears again next to each of these questions)

14. When you think of the real estate agent who just guided you through the tour, what words come to mind? List as many, or as few, words as you like.

15. Please rate the level of **expertise** of the real estate agent who guided you through the tour.

Not at all					Average					Very much
an Expert					Expertise					an Expert
1	2	3	4	5	6	7	8	9		

16. Please rate the level of **trust** you feel with the real estate agent who guided you through the tour.

I do not					Average					I have
trust this					level of					complete trust
agent at all					Trust					in this agent
1	2	3	4	5	6	7	8	9		

17. Please rate the level of **professionalism** of the real estate agent who guided you through the tour.

Not at all					Average					Very much a
professional					Professionalism					professional
1	2	3	4	5	6	7	8	9		

18. Please rate the level of **physical attractiveness** of the real estate agent who guided you through the tour.

Not at all physically attractive				Average level of Attractiveness				Very much physically attractive
1	2	3	4	5	6	7	8	9

(no photos appear beyond this point)

Please share the following information about yourself:

19. Please enter your zip code _____

20. Gender: Male _____ Female _____

21. What is your Age? _____

22. Current Marital Status: Single _____ Married _____ Divorced _____ Widowed _____

23. How would you classify your sexual orientation?

_____ Heterosexual (i.e. you prefer members of the opposite gender)

_____ Homosexual (i.e. you prefer members of the same gender)

_____ Bi-sexual (i.e. you are open to a sexual relationship with either gender)

24. Ethnicity:

_____ Caucasian

_____ African American

_____ Hispanic

_____ Asian

_____ Native American

_____ Other _____

25. Please select the number "3" to answer this question.

1 2 3 4 5 6 7 8 9

26. Highest Education Attained
(Please check the appropriate box)

_____ Ph.D.

_____ Master's Degree

_____ Bachelor's Degree

_____ Some college

27. Your Annual Income Level
(Please check the appropriate box)

_____ Under \$20,000

_____ \$20,001 - \$40,000

_____ \$40,001 - \$60,000

_____ \$60,001 - \$80,000

_____ High School Diploma
_____ Less than High School Diploma

_____ \$80,001 - \$100,000
_____ \$100,001 - \$120,000
_____ Over \$120,000

28. What is your total Net Worth? Net Worth is defined as total assets (stocks, bonds, price of your home, retirement accounts, etc.) minus total liabilities (outstanding mortgage balance, credit card debt, student loans, auto loans, etc.)

_____ Less than -\$400,000
_____ -\$400,000 to -\$200,001
_____ -\$200,000 to \$0
_____ \$1 to \$200,000
_____ \$200,001 to \$400,000
_____ \$400,001 to \$600,000
_____ \$600,001 to \$800,000
_____ \$800,001 to \$1,000,000
_____ Over \$1,000,000

29. How many homes have you purchased in your lifetime? _____ homes

30. What is the total number of people living in your household? _____ people

31. How long have you lived in CITYNAME? _____ years